



# Australian beef

Financial performance of beef cattle producing farms,  
2007-08 to 2009-10

10.1

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June 2010

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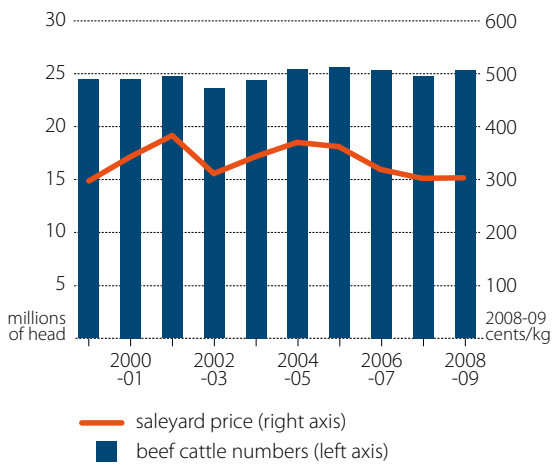
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## Introduction

Over much of the past decade, seasonal conditions have had a significant effect on the Australian beef cattle industry. For example, both the 2002-03 drought and the extended dry period from 2006-07 to 2007-08 resulted in cattle numbers contracting (figure a). Extensive destocking was also one of the factors which caused saleyard prices to fall during these periods. Despite this, cattle numbers were higher in 2008-09 as compared with 1999-2000.

### a Beef cattle numbers and average saleyard price

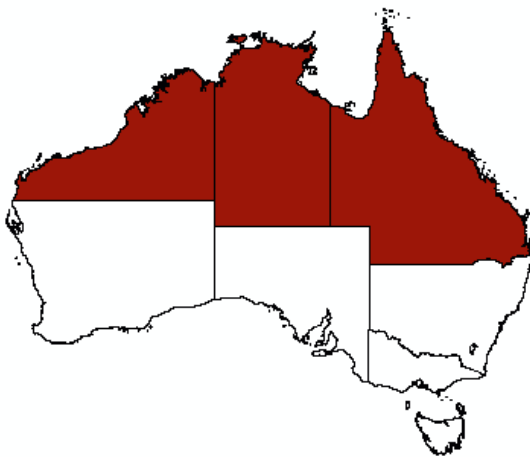


Source: Australian Bureau of Statistics.

Because of variability in seasonal conditions between northern and southern Australia during this period, the changes in beef cattle numbers and beef production in these two regions differed. In southern Australia, many producers continued to experience adverse seasonal conditions throughout much of the period following the 2002-03 drought. This resulted in both reduced calf production and increased turn-off, which had the effect of reducing cattle numbers in this region. In contrast, in northern Australia, improved seasonal conditions in recent years across most regions encouraged many producers to reduce turn-off and expand cattle numbers.

In this report, the implications of these developments on the farm financial performance of beef cattle producing farms in northern and southern Australia over the period 2007-08 to 2009-10 are examined. Northern Australia is defined as northern Western Australia, Queensland and the Northern Territory; the remainder of Australia is defined as southern Australia.

### map 1 Northern Australian beef cattle industry



This report draws heavily on the information obtained from ABARE's annual Australian Agricultural and Grazing Industries Survey (AAGIS), which is partly funded by Meat & Livestock Australia (MLA). This analysis of the survey data is also funded by MLA to monitor the production and financial performance of the Australian beef cattle industry.

This report covers the extent to which the financial performance of beef cattle producers varies between:

- farms with different scales of beef cattle production
- markets targeted (direct for slaughter, live export, feedlots and to other producers)
- the production systems used (including grain finishing and cattle trading).

In addition, the nature and level of capital investments undertaken by beef cattle producers in recent years, and the characteristics of the small proportion of farms with negative income and a low equity ratio are examined.

To provide insights into the performance of farms with different scales of operation, beef cattle farms surveyed by ABARE were stratified into four groups based on the size of their beef cattle herd in each year the farm was surveyed: small; medium; large; and very large. In general, beef cattle producers in northern Australia operate significantly larger farms than their counterparts in southern Australia. Consequently, to enable meaningful analysis of financial performance by scale in northern and southern Australia, different size groups have been used in these regions (table 1).

### 1 Beef cattle herd group, by number of head

	Northern vAustralia	Southern Australia
Small	100-400	100-200
Medium	400-1600	200-400
Large	1600-5400	400-800
Very large	more than 5400	more than 800

## 2 Distribution of broadacre beef cattle farms, by number of cattle, at 30 June

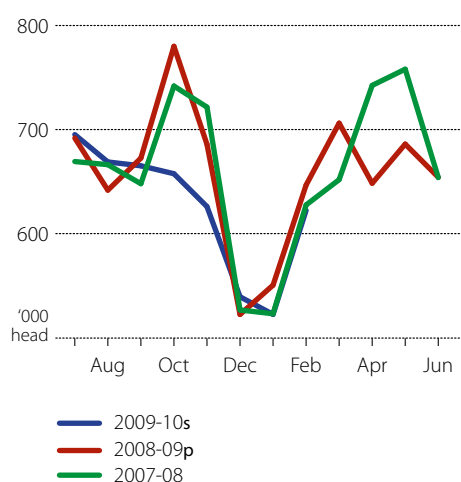
average between 2001–02 and 2008–09

	number of farms no.	share of farms %	share of beef cattle %	share of value of cattle sales %
<b>Northern Australia</b>				
less than 100	2 224	21.3	1	2
100–200 head	1 690	16.2	2	2
200–400 head	1 831	17.5	4	5
400–800 head	1 441	13.8	6	7
800–1600 head	1 462	14.0	13	13
1600–5400 head	1 397	13.4	30	30
more than 5400 head	404	3.9	43	41
Total	10 449	100	100	100
<b>Southern Australia</b>				
less than 100	9 793	32.9	6	7
100–200 head	7 066	23.8	12	11
200–400 head	6 543	22.0	21	18
400–800 head	4 385	14.7	27	23
800–1600 head	1 445	4.9	18	15
1600–5400 head	471	1.6	13	13
more than 5400 head	37	0.1	4	13
Total	29 739	100	100	100
<b>Australia</b>				
less than 100	12 017	29.9	3	4
100–200 head	8 755	21.8	6	7
200–400 head	8 374	20.8	11	12
400–800 head	5 826	14.5	15	15
800–1600 head	2 907	7.2	15	14
1600–5400 head	1 868	4.6	23	21
more than 5400 head	441	1.1	27	26
Total	40 188	100	100	100

Note: Excludes major feedlots.

In both northern and southern Australia, farms with fewer than 100 head of cattle have been excluded from the analysis to focus on larger beef cattle producers. Farms with fewer than 100 head of cattle represent 30 per cent of beef cattle farms, but account for just 3 per cent of the national beef cattle herd and contribute only around 4 per cent of the value of beef cattle sales (table 2).

### b Cattle slaughter



p Preliminary estimate. s Provisional estimate.  
Source: Australian Bureau of Statistics.

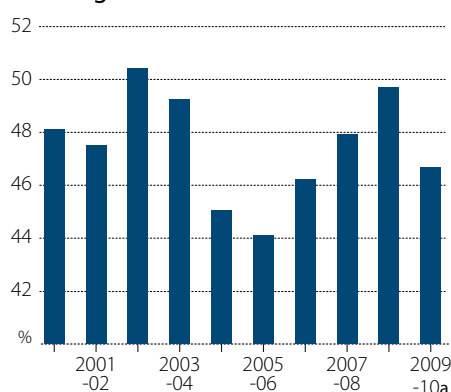
Large feedlot operations have also been excluded from this analysis. A farm with a commercial feedlot has been defined as one that had more than 1000 head of cattle fed on grain for more than 50 days during the financial year. However, farms grain finishing beef cattle on a lesser scale than the definition of a commercial feedlot have been included in the analysis.

### Beef cattle slaughter, 2007–08 to 2009–10

Slaughtering of beef cattle in Australia exhibits a strong seasonal pattern, with slaughter being highest in late spring and lowest in mid to late summer (figure b). In 2007–08 and 2008–09, this pattern was particularly strong as adverse seasonal conditions throughout much of eastern and southern Australia led to producers increasing turn-off of cattle for slaughter before summer.

In 2009–10, the spring turn-off has not been as apparent. Continued dry conditions in the first three months of 2009–10 resulted in producers maintaining high turn-off of cattle for slaughter during this period.

### C Female share of beef cattle slaughter



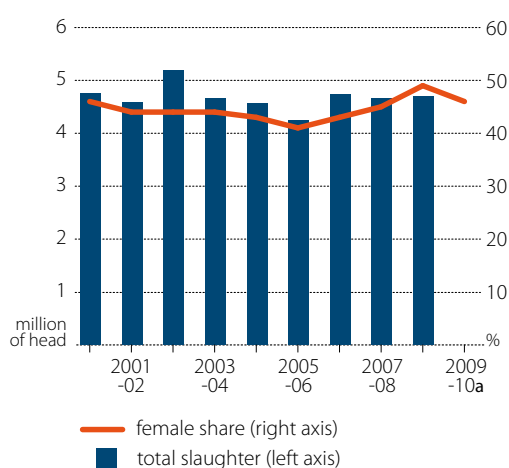
a Year to February 2010.  
Source: Australian Bureau of Statistics.

However, since then, significant rainfall throughout most of Australia (except in south-west Western Australia) has resulted in a sharp reduction in sales of beef cattle for slaughter as producers reduced turn-off to retain animals to expand herd numbers. In October and November 2009, slaughter of beef cattle was 12 per cent lower compared with the same period in both 2007-08 and 2008-09.

Reflecting the move by producers to start rebuilding cattle numbers, the female share of cattle slaughtered in the first eight months of 2009-10 declined to just under 47 per cent, compared with almost 50 per cent in 2008-09 (figure c).

The trend towards reduced sales of female cattle is likely to strengthen in the short to medium term if prices and seasonal conditions remain favourable. During the 2002-03 drought, the female share of beef cattle slaughtered increased to over 50 per cent, reflecting widespread destocking of producers' breeding stock. However, over the following three years, improved seasonal conditions resulted in the share of female cattle slaughtered falling to just over 44 per cent in 2005-06 as producers retained female calves and replacement heifers to boost breeding cow numbers and future calf production.

### d Beef cattle slaughter, south eastern Australia



a Year to February 2010.  
Source: Australian Bureau of Statistics.

Over this period, there were also some important differences in the number and composition of cattle sold for slaughter in northern and southern Australia. During the 2002-03 drought, total slaughter increased significantly in northern and southern Australia. However, in south eastern Australia—New South Wales, Victoria, South Australia and Tasmania—the female share in total beef cattle slaughtered increased only slightly and remained well below 50 per cent (figure d). This suggests that producers in this region were more willing to purchase fodder and hold onto the majority of the breeding herd in order to come out of the drought in a strong position to maintain or expand production relative to pre-drought levels. In contrast, producers in northern Australia appear to have responded to the drought by increasing the female turn-off rate and running down breeding herds.

Between 2005-06 and 2008-09, the extended dry period in south eastern Australia resulted in high fodder prices and appears to have

reduced producers' capacity to continue purchasing large quantities of fodder and resulted in producers reducing breeding herds by increasing turn-off of female cattle for slaughter. In contrast, improved seasonal conditions in northern Australia, particularly in the latter half of this period, resulted in reduced turn-off of female cattle and some rebuilding of cattle numbers.

## Effect of seasonal conditions on cattle production

Production of calves by Australian beef cattle farms is dependent on the number of cows available for mating and the seasonal conditions in terms of feed availability and quality. Favourable seasonal conditions allow cows to be in good condition prior to mating to maximise fertility rates and enables quality feed to be available during gestation and lactation. In 2008-09 and 2009-10, there was considerable variability in the seasonal conditions experienced by beef cattle producers throughout Australia. Furthermore, destocking and restocking in different regions in 2007-08 also affected the number of cows available for mating during this period.

### Northern Australia

Favourable seasonal conditions and expansion of cow numbers throughout much of northern Australia during 2007-08 enabled many producers to increase the number of cows mated for calving during 2008-09 (table 3). Combined with some improvement in branding rates, this resulted in increased production of calves for small,

### 3 Selected physical characteristics, by herd size

average per farm

		small			medium			large		
		2007-08	2008-09 <sup>p</sup>	2009-10 <sup>s</sup>	2007-08	2008-09 <sup>p</sup>	2009-10 <sup>s</sup>	2007-08	2008-09 <sup>p</sup>	2009-10 <sup>s</sup>
<b>Northern Australia</b>										
Change in beef cattle numbers	%	1.4	1.6	-1.2	1.9	5.6	-0.2	2.2	0.9	1.4
Cows and heifers mated	no.	103	110	na	339	339	na	1028	1020	na
Calves branded	no.	75	79	89	245	267	290	747	753	812
Beef cattle purchases	no.	16	21	21	40	42	41	76	75	67
Beef cattle sales	no.	82	89	102	242	256	300	676	710	749
Change in sheep numbers	%	-10.1	16.6	5.5	10.5	-5.8	6.1	-8.5	-20.6	8.5
Area operated as at 30 June	ha	2 613	1 903	1 972	9 687	8 235	13 303	38 441	41 569	42 391
Area cropped	ha	82	82	188	106	95	124	211	138	79
<b>Southern Australia</b>										
Change in beef cattle numbers	%	-8.2	2.9	-0.5	5.6	-3.4	3.1	6.2	5.1	4.9
Cows and heifers mated	no.	63	60	na	119	138	na	243	252	na
Calves branded	no.	51	55	61	100	120	109	201	214	219
Beef cattle purchases	no.	16	18	19	33	21	29	37	40	52
Beef cattle sales	no.	74	66	77	111	140	120	193	213	229
Change in sheep numbers	%	-7.6	-6.7	-9.0	-3.2	-6.6	1.1	-0.5	-6.5	-7.2
Area operated as at 30 June	ha	1 151	899	785	2 511	4 611	2 120	6 796	9 357	7 180
Area cropped	ha	199	153	99	274	241	160	160	265	192
		very large			all farms					
		2007-08	2008-09 <sup>p</sup>	2009-10 <sup>s</sup>	2007-08	2008-09 <sup>p</sup>	2009-10 <sup>s</sup>			
<b>Northern Australia</b>										
Change in beef cattle numbers	%	2.5	1.7	4.8	2.2	2.2	1.8			
Cows and heifers mated	no.	6 047	6 396	na	664	624	na			
Calves branded	no.	4 316	4 219	3 307	478	442	365			
Beef cattle purchases	no.	154	392	521	42	54	50			
Beef cattle sales	no.	2 914	3 089	2 787	393	384	349			
Change in sheep numbers	%	na	na	na	-0.4	-0.7	6.1			
Area operated as at 30 June	ha	261 158	262 176	166 726	25 135	22 439	16 928			
Area cropped	ha	47	196	83	111	100	147			
<b>Southern Australia</b>										
Change in beef cattle numbers	%	4.1	-0.5	4.1	3.1	0.4	3.4			
Cows and heifers mated	no.	735	749	na	184	190	na			
Calves branded	no.	639	652	646	156	165	156			
Beef cattle purchases	no.	88	107	247	33	32	48			
Beef cattle sales	no.	619	738	786	165	185	180			
Change in sheep numbers	%	2.7	-8.6	3.3	-2.0	-7.1	-2.1			
Area operated as at 30 June	ha	27 975	21 298	5 308	5 442	5 672	2 809			
Area cropped	ha	748	631	500	271	252	171			

<sup>p</sup> Preliminary estimates. <sup>s</sup> Provisional estimates.

medium and large scale producers. In the case of the very large scale beef cattle producers, dry conditions leading up to mating in some parts of the northern pastoral zone adversely affected cow fertility and resulted in lower branding rates, on average, in 2008-09 (figure e). Consequently, calf brandings by these farms fell, on average, by 2 per cent, despite a 6 per cent increase in the number of cows mated.

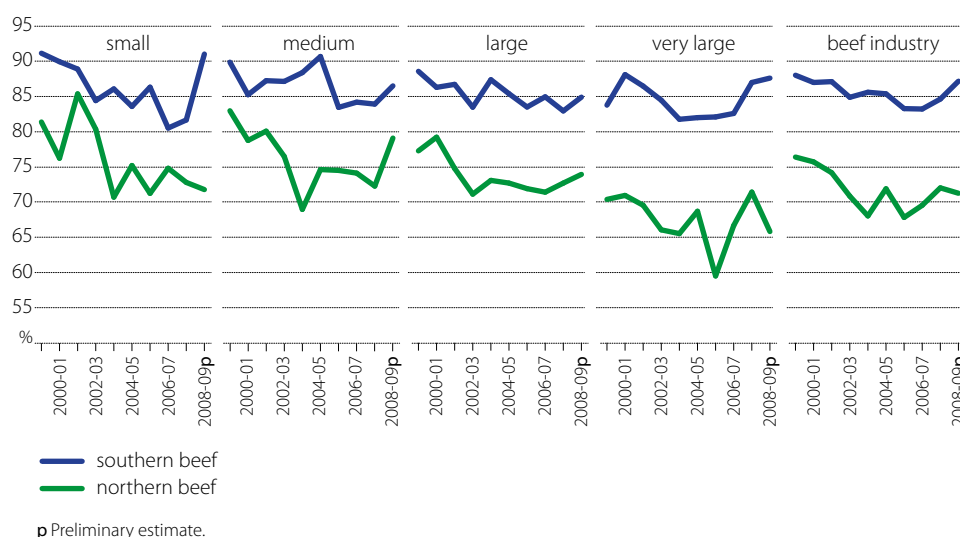
The increase in cow numbers during 2008-09 provided producers with the opportunity to increase the number of cows mated in 2009-10. However, variable seasonal conditions across the region affected the expansion of calf production in northern Australia.

Small and medium scale producers are more heavily concentrated in coastal and south eastern Queensland where a very dry start to 2009-10 resulted in many of these producers maintaining a relatively high turn-off rate. However, increased rainfall after the ABARE survey was conducted in early 2010 is expected to boost pasture growth and result in less turn-off than earlier expected. Overall, the increased turn-off of cattle during 2009 is expected to result in cattle numbers in this region falling slightly in 2009-10.

Large and very large scale producers are predominantly located in the pastoral zone of northern Australia where dry conditions caused many producers in this region to increase turn-off as pasture availability deteriorated between July and November 2009. Since the end of November 2009, seasonal conditions have improved and producers are expected to reduce turn-off and increase purchases of cattle to rebuild herd numbers.

Nevertheless, the very dry conditions leading up to mating reduced the number of cows joined in 2009–10. With conditions remaining dry during much of the mating period, fertility rates are expected to be lower, resulting in reduced calf brandings in 2009–10.

**e Branding rates, Australia**



## Southern Australia

Despite dry seasonal conditions during winter and spring throughout south eastern Australia in 2008-09, beef cattle producers in southern Australia increased the number of cows mated by 3 per cent. With improved conditions throughout much of the region from November 2008, calf brandings increased by almost 6 per cent in 2008–09. However, a return to dry conditions during winter and spring caused a sharp increase in cattle turn-off, particularly among cows and younger animals, resulting in cattle turn-off increasing, on average, by over 12 per cent in 2008–09.

Increased turn-off of cows during 2008–09 is expected to reduce the number of cows mated in 2009–10. Dry conditions during spring, particularly in New South Wales, are expected to adversely affect cow fertility rates. Overall, calf brandings are expected to fall, on average, by almost 5 per cent. Improved conditions throughout much of southern Australia since November 2009 are expected to encourage many producers to reduce turn-off and increase cattle purchases to start rebuilding cattle numbers.

## Farm financial performance—northern Australia

### 2008–09

Farm cash income of beef cattle producers in northern Australia, on average, improved by 4 per cent in 2008–09 as total cash costs decreased by more than receipts (figure f, table 4). Overall, farm cash receipts fell by 9 per cent, largely because of a 2 per cent fall in the number of beef cattle sold, slightly weaker cattle prices and lower grain sales following an 11 per cent fall in the area sown to crops. Farm cash costs, on average, fell by 11 per cent as the reduction in crop plantings resulted in lower outlays on cropping inputs and more than offset a 16 per cent increase in purchases of beef cattle.

However, there were considerable differences in farm financial performance between producers of different scales of production (figures g and h, table 4). Producers of all scales of beef cattle production, except very large scale producers, on

## 4 Financial performance, northern beef industry

average per farm

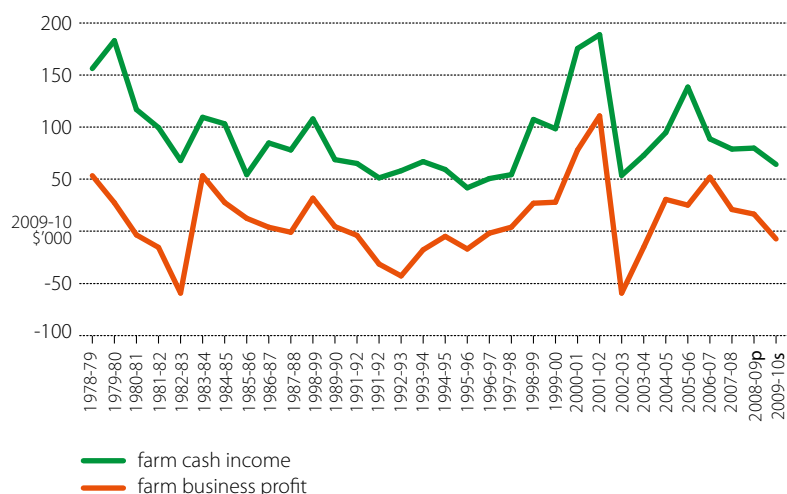
	small			medium			large		
	2007-08	2008-09 <sup>p</sup>	2009-10 <sup>s</sup>	2007-08	2008-09 <sup>p</sup>	2009-10 <sup>s</sup>	2006-07	2008-09 <sup>p</sup>	2009-10 <sup>s</sup>
<b>Farm cash receipts</b>									
Beef cattle	\$ 49 386	51 570 (9)	59 800	151 871	178 760 (11)	199 600	495 060	513 480 (6)	477 300
Beef cattle transferred off-farm	\$ 0	478 (159)	na	5 903	790 (106)	na	10 973	19 250 (85)	na
Crops	\$ 24 131	24 510 (37)	93 000	46 082	33 390 (27)	38 000	64 184	37 420 (52)	26 300
Sheep and lambs	\$ 3 522	4 610 (38)	11 100	4 568	9 210 (29)	11 400	4 461	4 850 (55)	5 200
Wool	\$ 3 876	4 420 (50)	12 400	12 216	13 880 (27)	11 300	15 630	7 910 (53)	7 600
Total cash receipts	\$ 98 599	103 850 (13)	193 500	266 609	272 970 (8)	294 900	660 789	634 540 (7)	552 000
<b>Farm cash costs</b>									
Beef cattle purchases	\$ 8 614	10 850 (23)	10 400	21 592	25 740 (20)	22 000	53 530	51 150 (23)	31 900
Chemicals	\$ 3 474	3 140 (36)	9 200	9 637	4 570 (28)	6 300	12 623	11 890 (29)	18 000
Contracts	\$ 4 355	3 040 (23)	na	11 659	7 870 (19)	na	21 085	15 800 (14)	na
Fertilisers	\$ 2 490	2 140 (60)	16 600	3 482	3 910 (36)	10 200	1 516	2 290 (32)	8 200
Fodder	\$ 5 576	3 340 (20)	3 100	14 095	8 500 (15)	12 500	31 142	33 020 (18)	37 800
Fuel, oil and grease	\$ 9 167	7 970 (10)	13 900	21 489	16 710 (8)	23 900	41 159	36 000 (8)	39 000
Handling and marketing	\$ 2 801	3 120 (21)	na	7 832	5 550 (10)	na	16 592	13 010 (13)	na
Hired labour	\$ 2 154	1 270 (49)	3 600	5 115	4 710 (31)	11 700	26 170	23 540 (17)	19 800
Interest	\$ 9 239	9 300 (28)	19 100	32 722	26 240 (15)	23 500	104 569	92 110 (14)	73 700
Repairs and maintenance	\$ 11 884	9 910 (12)	14 400	24 679	20 150 (9)	23 200	56 463	48 540 (9)	49 400
Total cash costs	\$ 88 922	82 120 (12)	148 800	223 959	187 240 (8)	224 700	520 336	471 270 (8)	461 300
<b>Farm financial performance</b>									
Farm cash income	\$ 9 677	21 740 (34)	44 800	42 650	85 740 (15)	70 200	140 453	163 270 (14)	90 700
Farm business profit	\$ -38 714	-34 810 (24)	-22 000	-24 210	39 000 (28)	-20 200	48 558	47 860 (102)	-7 800
<b>Rate of return</b>									
- excl. capital app.	% -1.0	-0.9 (37)	0.0	0.2	1.3 (15)	0.1	1.3	1.3 (33)	0.7
- incl. capital app.	% -3.9	-0.4 (277)	na	1.2	0.2 (276)	na	1.3	-1.0 (108)	na

	very large			northern Australia		
	2007-08	2008-09 <sup>p</sup>	2009-10 <sup>s</sup>	2007-08	2008-09 <sup>p</sup>	2009-10 <sup>s</sup>
<b>Farm cash receipts</b>						
Beef cattle	\$1 864 015	1 908 690 (9)	1 999 600	260 116	254 690 (5)	229 400
Beef cattle transferred off-farm	\$1 117 714	881 170 (24)	na	63 130	44 270 (23)	na
Crops	\$ 8 550	26 110 (51)	16 800	37 824	29 680 (20)	62 400
Sheep and lambs	\$ 0	440 (105)	2190	3 851	6 020 (21)	10 100
Wool	\$ 0	3920 (72)	4710	8 559	8 170 (21)	11 100
Total cash receipts	\$3 085 732	2 963 540 (9)	2 341 300	414 205	378 580 (5)	348 300
<b>Farm cash costs</b>						
Beef cattle purchases	\$ 147 188	236 420 (23)	324 300	28 382	32 800 (12)	27 400
Chemicals	\$ 2 601	11 150 (30)	13 300	7 124	5 400 (16)	9 700
Contracts	\$ 74 542	95 880 (13)	na	13 519	11 020 (8)	na
Fertilisers	\$ 1 617	4 130 (64)	5 600	2 596	2 860 (27)	12 900
Fodder	\$ 99 823	167 230 (12)	207 500	18 017	17 420 (8)	17 800
Fuel, oil and grease	\$ 152 286	160 640 (8)	143 600	26 618	22 490 (4)	25 000
Handling and marketing	\$ 84 386	56 580 (21)	na	11 284	8 000 (9)	na
Hired labour	\$ 221 475	231 560 (9)	158 800	19 098	16 650 (8)	13 600
Interest	\$ 212 315	333 430 (16)	404 600	45 030	43 310 (8)	40 800
Repairs and maintenance	\$ 166 315	175 580 (10)	179 800	32 370	27 240 (5)	27 800
Total cash costs	\$2 450 561	2 640 190 (11)	2 108 600	336 807	298 440 (5)	282 300
<b>Farm financial performance</b>						
Farm cash income	\$ 635 171	323 350 (63)	232 700	77 398	80 140 (14)	66 000
Farm business profit	\$ 649 578	249 630 (66)	354 200	18 341	16 700 (73)	-7 300
<b>Rate of return</b>						
- excl. capital app.	% 2.9	1.7 (27)	2.3	1.0	1.0 (19)	0.7
- incl. capital app.	% 8.6	1.9 (54)	na	2.1	0.2 (286)	na

<sup>p</sup> Preliminary estimates. <sup>s</sup> Provisional estimates.

Note: The figures in parentheses are standard errors expressed as a percentage of the estimate. A guide on how to use standard errors is in the methodology section at the back of the report.

### f Financial performance, northern Australia

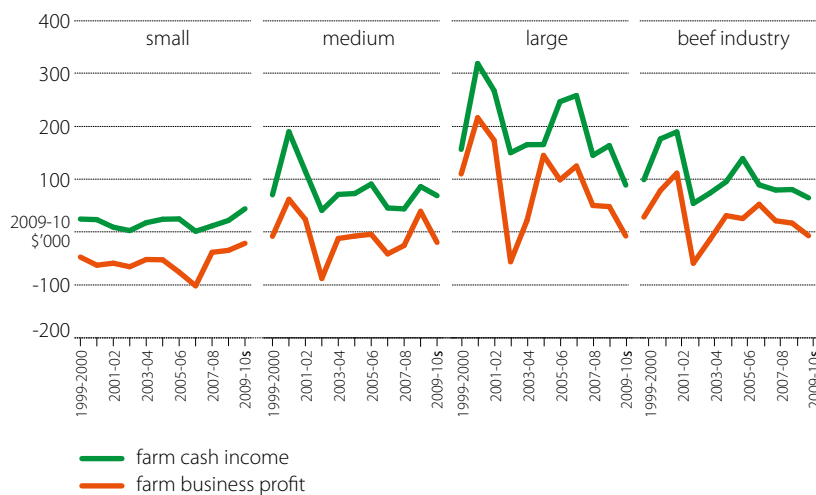


p Preliminary estimate. s Provisional estimate.

average, experienced an increase in farm cash income of 16–125 per cent in 2008–09. Whereas, on average, farm cash income for very large scale beef cattle producers fell by around 50 per cent in 2008–09.

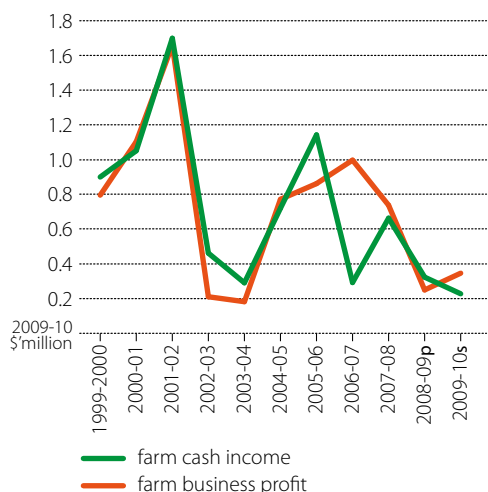
Farm cash costs, on average, were lower for small, medium and large scale beef cattle producing farms, as improved seasonal conditions reduced purchases of fodder and hired labour. In addition, lower crop production led to lower spending on cropping inputs, including fertilisers, chemicals and fuel. At the same time, farm cash receipts rose, on average, for small and medium scale producers, as increased sales of beef cattle more than offset the effect of lower prices. In the case of large scale producers, farm cash receipts, on average, fell by 4 per cent, as lower prices more than offset a 5 per cent increase in sales.

### g Financial performance, northern Australia



s Provisional estimate.

### h Financial performance, very large producers, northern Australia



p Preliminary estimate. s Provisional estimate.

However, for very large scale producers, farm cash costs, on average, rose by 8 per cent in 2008–09 as the dry start to the financial year boosted fodder purchases. In addition, the improvement in conditions later in the year, combined with increased pasture growth and capacity to expand stock numbers, resulted in a sharp increase in cattle purchases. At the same time, farm cash receipts fell as a result of reduced sales and transfers of beef cattle during 2008–09.

### 2009–10

Farm financial performance is expected to weaken in northern Australia in 2009-10 (table 4, figures f, g and h). On average, beef cattle producers' farm cash income in northern Australia is expected to fall by 18 per cent to \$66 000 a farm, largely because of reduced cattle turn-off and weaker beef cattle prices.

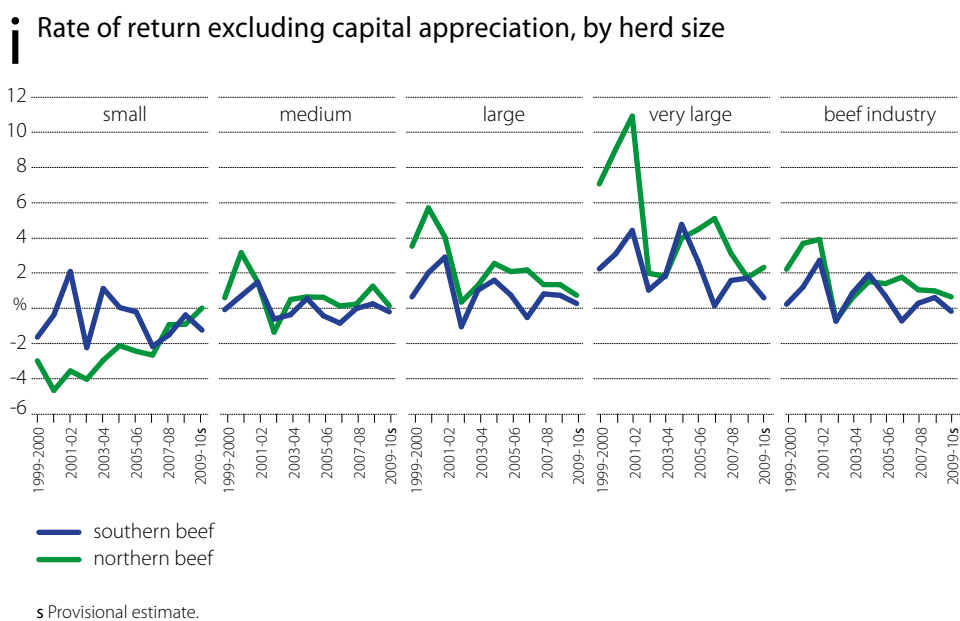
As in previous years, considerable differences in farm financial performance between producers of different scales of beef cattle production are expected in 2009–10. Farm cash income is expected to deteriorate sharply for producers operating medium, large and very large scale beef cattle businesses, with large scale producers expected to experience the largest decline in farm cash income, averaging a fall of 44 per cent. In contrast, small scale beef cattle producers are expected to experience a sharp increase in farm cash income, with incomes more than doubling in 2009–10.

The factors determining these markedly different outcomes are largely driven by farm location and by the response by individual producers to improved seasonal conditions in 2009–10 with regard to expanding the area sown to crops and reducing beef cattle turn-off.

For small and medium scale producers, who are largely located in south eastern and coastal Queensland, the improvement in conditions is expected to cause an expansion in the area sown to crops and lead to higher farm cash incomes. For small scale beef cattle producers, the recovery in the quantity of grain and beef cattle sold is expected to more than offset the effect of weaker commodity prices and lead to a recovery in farm cash receipts. An increase in grain production is expected to boost outlays on cropping inputs and to increase farm cash costs.

In the case of medium scale producers, the expansion in grain area is expected to be smaller, in part because of dry conditions constraining summer crop plantings (table 4). Also, the dry spring conditions are expected to limit the recovery in grain production and sales. Consequently, farm cash receipts are expected to rise, on average, by just 8 per cent, as the growth in beef and grain sales only just offset the effect of lower prices. However, the expansion in grain production is expected to result in farm cash costs rising, on average, by 20 per cent in 2009–10.

Large and very large scale beef cattle producers have less scope to expand grain production, as many of these producers are located in the pastoral zone where soil and climatic conditions restrict crop production. For these farms, the decline in beef cattle prices and retention of animals to expand beef cattle numbers is expected to result in farm cash income falling, on average, in 2009–10. Nonetheless, in 2009–10, large and very large scale beef cattle producers are expected to continue to realise a higher return on capital, excluding capital appreciation, than other producers (table 4, figure i).



## Farm financial performance—southern Australia

### 2008–09

The financial performance of beef cattle producing farms improved in 2008–09 in southern Australia as favourable seasonal conditions boosted receipts relative to costs (table 5, figure j). On average, farm cash income increased by 46 per cent to \$59 640 a farm.

## 5 Financial performance, southern beef industry

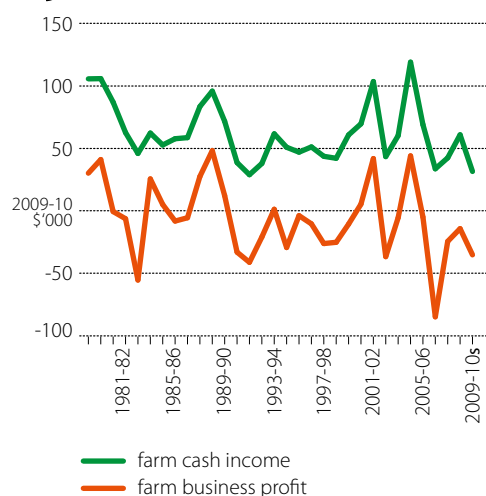
average per farm

	small			medium			large		
	2007-08	2008-09 <sup>p</sup>	2009-10 <sup>s</sup>	2007-08	2008-09 <sup>p</sup>	2009-10 <sup>s</sup>	2006-07	2008-09 <sup>p</sup>	2009-10 <sup>s</sup>
<b>Farm cash receipts</b>									
Beef cattle	\$ 47 037	43 760 (10)	48 600	68 641	88 160 (11)	79 000	125 420	140 960 (5)	150 200
Beef cattle transferred off-farm	\$ 360	0 (0)	na	638	1 830 (70)	na	317	140 (98)	na
Crops	\$ 45 940	52 610 (30)	27 500	62 206	85 270 (52)	57 400	41 397	94 530 (27)	75 600
Sheep and lambs	\$ 16 157	24 560 (18)	21 600	34 268	28 960 (20)	33 900	40 828	44 750 (13)	41 100
Wool	\$ 18 706	14 470 (23)	7 400	27 245	21 150 (30)	27 100	45 178	25 830 (16)	19 600
Total cash receipts	\$ 146 033	162 020 (14)	123 400	220 773	253 790 (23)	214 600	286 234	337 670 (9)	313 700
<b>Farm cash costs</b>									
Beef cattle purchases	\$ 8 705	9 820 (23)	8 700	17 057	12 210 (24)	15 100	21 478	22 270 (16)	27 600
Chemicals	\$ 6 344	6 340 (23)	4 500	11 367	11 050 (68)	8 600	5 948	15 530 (28)	12 100
Contracts	\$ 4 314	5 300 (38)	na	7 235	7 700 (87)	na	9 000	13 430 (27)	na
Fertilisers	\$ 15 112	12 650 (32)	8 600	18 667	19 070 (21)	13 800	18 891	24 100 (15)	21 300
Fodder	\$ 3 993	4 310 (20)	2 800	6 752	7 480 (23)	4 200	10 615	6 660 (16)	6 800
Fuel, oil and grease	\$ 11 855	12 900 (25)	9 200	16 657	16 170 (24)	16 600	16 357	20 140 (13)	18 100
Handling and marketing	\$ 4 602	4 660 (16)	4 600	7 494	6 100 (14)	8 700	10 696	12 340 (10)	12 000
Hired labour	\$ 3 426	3 250 (41)	2 100	7 018	5 660 (35)	5 800	8 381	12 120 (27)	10 500
Interest	\$ 14 312	16 400 (27)	10 700	23 303	24 700 (29)	19 700	27 322	38 470 (19)	30 000
Repairs and maintenance	\$ 11 509	11 970 (14)	8 900	15 680	17 760 (17)	17 300	23 125	27 230 (11)	22 400
Total cash costs	\$ 126 182	131 680 (13)	102 600	189 173	191 730 (22)	179 700	237 687	281 320 (11)	263 500
<b>Farm financial performance</b>									
Farm cash income	\$ 19 850	30 340 (33)	20 800	31 600	62 060 (35)	35 000	48 547	56 350 (18)	50 100
Farm business profit	\$ -54 277	-28 100 (35)	-43 100	-27 203	-19 980 (128)	-29 500	3 160	-10 970 (127)	-22 400
<b>Rate of return</b>									
- excl. capital app.	% -1.5	-0.4 (107)	-1.2	0.0	0.3 (349)	-0.2	0.8	0.7 (40)	0.3
- incl. capital app.	% -1.3	0.1 (876)	na	0.5	0.3 (486)	na	1.9	0.1 (972)	na
<b>very large</b>									
<b>southern Australia</b>									
	2007-08	2008-09 <sup>p</sup>	2009-10 <sup>s</sup>	2007-08	2008-09 <sup>p</sup>	2009-10 <sup>s</sup>			
<b>Farm cash receipts</b>									
Beef cattle	\$ 406 302	502 950 (9)	611 700	106 075	122 590 (5)	125 500			
Beef cattle transferred off-farm	\$ 5 470	6 470 (61)	na	967	1 350 (45)	na			
Crops	\$ 230 433	272 140 (19)	183 900	69 169	93 650 (20)	59 800			
Sheep and lambs	\$ 61 834	78 120 (16)	65 600	31 187	34 870 (9)	33 100			
Wool	\$ 97 385	59 260 (21)	49 500	34 595	23 290 (13)	19 900			
Total cash receipts	\$ 893 090	979 190 (9)	996 400	273 471	307 270 (8)	263 500			
<b>Farm cash costs</b>									
Beef cattle purchases	\$ 56 091	70 200 (20)	189 400	18 639	18 900 (11)	29 700			
Chemicals	\$ 35 405	44 890 (19)	39 100	10 814	13 470 (22)	10 200			
Contracts	\$ 37 581	43 450 (19)	na	9 564	11 400 (24)	na			
Fertilisers	\$ 57 227	71 560 (15)	58 400	21 298	22 860 (11)	16 900			
Fodder	\$ 31 953	29 790 (34)	98 800	9 017	8 460 (15)	12 100			
Fuel, oil and grease	\$ 59 554	51 930 (11)	49 500	19 140	19 260 (10)	16 800			
Handling and marketing	\$ 28 048	23 160 (14)	39 100	9 096	8 300 (7)	10 300			
Hired labour	\$ 65 856	59 830 (15)	57 600	11 960	11 380 (12)	9 600			
Interest	\$ 103 257	121 020 (19)	94 100	28 801	33 700 (12)	24 400			
Repairs and maintenance	\$ 63 676	62 850 (10)	62 600	20 442	21 720 (7)	18 800			
Total cash costs	\$ 759 671	815 030 (10)	968 000	232 701	247 630 (8)	231 800			
<b>Farm financial performance</b>									
Farm cash income	\$ 133 419	164 160 (24)	28 400	40 770	59 640 (16)	31 700			
Farm business profit	\$ 71 571	55 280 (84)	-48 700	-21 857	-13 850 (81)	-35 100			
<b>Rate of return</b>									
- excl. capital app.	% 1.6	1.7 (22)	0.6	0.3	0.6 (48)	-0.2			
- incl. capital app.	% 2.5	1.4 (50)	na	1.0	0.5 (101)	na			

<sup>p</sup> Preliminary estimates. <sup>s</sup> Provisional estimates.

Note: The figures in parentheses are standard errors expressed as a percentage of the estimate. A guide on how to use standard errors is in the methodology section at the back of the report.

**j** Financial performance, southern Australia



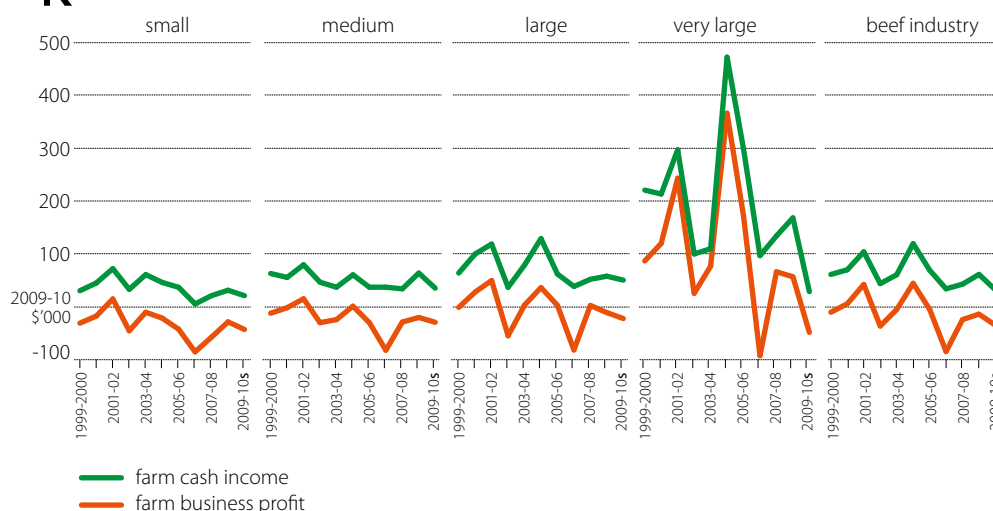
p Preliminary estimate. s Provisional estimate.

In 2008–09, farm cash receipts rose, on average, by 12 per cent, as the improved seasonal conditions boosted grain yields and livestock reproduction and finishing rates. While grain and wool prices eased in 2008–09, producers realised, on average, higher prices for beef cattle and lambs, in part as a result of being able to sell more finished animals. With the exception of wool, receipts from all commodities sold by beef cattle producers in southern Australia (beef cattle, sheep, lambs, and grains) all rose in 2008–09.

However, the improvement in agricultural production and sales was associated with a 6 per cent increase in farm cash costs. Much of the growth in costs was because of increased purchases of crop inputs.

While producers of all scales of beef cattle production experienced a recovery in farm cash income in 2008–09, the recovery varied depending on the scale of beef cattle production (table 5, figure K). This is explained in part by the varying extent to which seasonal conditions improved across southern Australia and the different ways producers responded.

**k** Financial performance, southern Australia, by herd size



s Provisional estimate.

On average, small, medium and large scale beef cattle producers realised the strongest recovery in grain yields and livestock reproduction rates. Small and large scale producers responded to the recovery in seasonal conditions by reducing beef cattle turnoff and rebuilding cattle numbers. In contrast, medium scale producers appear to have continued to destock during spring and boosted cattle sales during 2008–09. Consequently, medium scale beef cattle producers realised the strongest recovery in farm cash incomes in 2008–09 (up 96 per cent), followed by small scale producers (up 53 per cent).

In contrast, large and very large scale producers were more heavily concentrated in parts of southern Australia that realised a more modest improvement in seasonal conditions. Consequently, there was less recovery in livestock reproduction rates and grain yields and producers maintained a relatively high level of beef cattle turn-off. On average, very large scale beef cattle producers continued to reduce beef cattle numbers in 2008–09.

While the high level of cattle turn-off maintained by very large scale beef cattle producers boosted beef cattle receipts, the recovery in cropping receipts was more subdued than that experienced by other producers in southern Australia. Consequently, very large scale beef cattle producers' farm cash income recovered more modestly than for small and medium scale producers in 2008–09, rising, on average, by 23 per cent. Nonetheless, very large scale producers were the only beef cattle farms that, on average, realised a profit in 2008–09 (table 5).

## 2009–10

A return to dry conditions in southern Australia during 2009 is expected to adversely affect beef industry farm financial performance in 2009–10. On average, farm cash income is forecast to fall by 47 per cent to \$31 700 a farm (table 5, figure j).

Farm cash receipts are expected to fall, on average, by 14 per cent, largely because of reduced production of grains, lambs and wool, as well as weaker grain prices. Reduced plantings of winter grains in parts of southern Australia led to producers in these areas purchasing fewer cropping inputs and this is expected to result in average farm cash costs falling by 6 per cent in 2009–10. However, since ABARE farm survey data were collected, seasonal conditions improved in the first half of 2010 and are expected to result in producers buying more cattle and an increase in farm cash costs.

As with the previous year, farm financial performance is expected to vary between different scales of beef cattle production (figure k). Very large scale beef cattle producers are expected to experience the largest reduction in farm cash income (down 83 per cent) because of a significant increase in outlays on cattle purchases and a sharp fall in cropping receipts. This is despite a projected increase in beef cattle receipts as a result of the combined effects of higher turn-off during spring 2009 and slightly higher prices. In contrast, large scale beef cattle producers are expected to realise the smallest decline in farm cash incomes (down 11 per cent), as increased beef cattle receipts partially offset the effect of reduced revenue from the sale of grains, sheep, lambs and wool. However, unlike operators of very large scale beef cattle enterprises, large scale producers indicated that they intended to respond to their tightening cash flows by deferring non-essential repairs and maintenance and would not significantly increase their outlays on cattle purchases.

In 2009–10, producers of all production scales, on average, are expected to realise a farm business loss. Nonetheless, very large scale beef cattle farms are expected to continue to realise a higher return on capital than other beef cattle farms (table 5, figure i).

## 6 Physical and financial performance indicators, grouped by main market targeted, 2006–07 to 2008–09 average per farm

		southern Australia				northern Australia			
		direct for slaughter	feedlot	live export	breeders or store	direct for slaughter	feedlot	live export	breeders or store
Area operated, 30 June	ha	4 905	6 503	44 255	2 551	26 958	22 521	149 596	22 653
Area sown to crops	ha	258	427	202	172	127	122	22	77
Number of sheep and lambs, 30 June	ha	1 218	1 618	1 164	1 312	185	785	0	431
Number of beef cattle, 30 June	hd	431	488	629	411	1 968	1 192	8 279	984
– bulls	%	2	2	2	3	2	2	2	2
– cows	%	44	42	50	48	41	43	51	52
– replacement heifers	%	10	10	6	13	10	9	9	10
– calves	%	26	25	19	24	18	25	16	19
– other	%	18	22	23	12	30	22	21	17
Number of cows mated	hd	191	210	323	203	769	526	3 404	480
Branding rate	%	85	85	83	84	72	73	63	69
Number of beef cattle purchased	hd	71	97	68	37	114	64	231	34
Number of beef cattle sold	hd	220	263	308	215	501	363	1 473	317
– direct for slaughter	%	89	12	18	18	87	19	13	14
– to feedlots/backgrounding	%	6	81	18	8	3	68	2	10
– for live export	%	0	1	60	0	3	2	77	2
– to breeders or for store	%	5	6	4	73	6	10	7	74
Average price received for beef cattle	\$/hd	744	717	689	620	826	615	575	606
<b>Farm financial performance</b>									
Farm cash income	\$	51 056	41 020	66 123	26 274	105 911	52 139	47 196	66 146
– per hectare operated	\$/ha	10.4	6.3	1.5	10.3	3.9	2.3	0.3	2.9
Farm business profit	\$	–35 784	–37 859	13 263	–65 497	54 600	2 634	181 89 a	–51 225
<b>Rate of return</b>									
– excluding capital appreciation	%	0.0	0.7	1.1	–0.8	1.5	1.1	2.1	–0.3

a Farm business profit exceeds farm cash income, as herd rebuilding activities resulted in a sharp increase in the value of farm trading stocks.

Note: Standard errors can be supplied on request.

## Financial performance of beef cattle producers, by market targeted

Broadacre beef cattle producers have the option of selling cattle for slaughter or to other producers for breeding or store purposes. Animals produced for slaughter in Australia can be sold by producers to three types of buyer: directly to the abattoir; to live exporters; or to feedlots. To explore the financial performance of producers targeting these different markets, beef cattle farms that had more than 100 cattle during the period 2006–07 to 2008–09 were divided into four market groups based on which market they predominantly sold cattle to over the three-year period. The groups are:

- directly for slaughter
- for live export
- to feedlots
- to breeders or for store purposes.

The type of market targeted by producers influences the composition of the cattle herd (table 6). In both northern and southern Australia, producers who predominantly sold cattle directly for slaughter had, on average, fewer cows and proportionally more animals that were to be finished for market. In contrast, producers who predominantly sold cattle for live export and to breeders or for store purposes tend to sell cattle at a younger age, which results in fewer non-breeding cattle being retained on farm. This frees up resources to enable these farms to carry proportionally more breeding cows in their herds.

Producers who sold directly for slaughter over the four year period realised a higher average beef cattle price compared to producers targeting other markets (table 6). This is largely explained by these producers selling cattle with a higher average slaughter weight.

In both northern and southern Australia, the higher average prices received for cattle sold directly to slaughter appears to have more than compensated for the production of fewer calves as a result of having proportionally fewer cows in the herd, compared with producers that focused on other markets. This is shown by producers who predominantly sold cattle directly for slaughter realising the highest farm cash income per hectare (table 6).

Producers who predominantly sold to the live export market realised the lowest farm cash income per hectare. But this result is mainly because farms selling cattle for live export are predominantly large-scale, extensive grazing operations located in the pastoral zone. Indeed, these farms, which include many of the largest beef cattle properties in both northern and southern Australia, had the highest average farm business profit per farm during this period in each region.

An alternative method of comparing farms of different scales is to use the rate of return on capital. ABARE's preferred measure is the rate of return at full equity, which is calculated by dividing farm business profit at full equity by the value of farm capital at 1 July. Farm business profit at full equity is farm business profit plus interest, rent and lease payments less depreciation on leased items. This measures the rate of return on the capital used by the farm business, regardless of the financing arrangements in place.

In both northern and southern Australia, producers who predominantly sold cattle directly to the live export market realised the highest rate of return excluding capital appreciation.

## Financial performance of producers grain finishing beef cattle

In the two years to 2008–09, around 5 per cent of beef cattle producers in southern Australia and 7 per cent of producers in northern Australia used grain to finish beef cattle for sale. To gain some insights into the possible economic benefits of grain finishing cattle prior to sale, the beef cattle producers surveyed by ABARE in northern and southern Australia were classified into one of two groups depending on whether or not they used grain to finish cattle for sale during this period (table 7).

### Northern Australia

In the two years to 2008–09, all of the beef cattle producers who used grain to finish cattle for sale were located in Queensland, with 85 per cent of these farms located in south eastern and central Queensland—principally the coastal regions, Darling Downs and Central Highlands—where farms are typically smaller than elsewhere in northern Australia

and grain can be grown or readily sourced. As a result, farms using grain finishing were, on average, smaller than farms not using grain finishing—with an average area operated around a quarter of the size of non–grain finishing farms.

Grain finishing farms, on average, had 1153 head of cattle and sold 337 head of cattle a year. These producers also planted, on average, 244 hectares of their farm area to crops during this period. In contrast, non–grain finishing beef cattle producers had, on average, 1613 head of cattle, sold 399 head of cattle a year and sowed just 98 hectares of their land to crops.

On average, producers fed grain to 183 head of cattle, or 41 per cent of the cattle sold, for an average of 85 days. While grain feeding increases producers' costs (because of grain production or purchasing costs) it can also allow cattle to realise higher prices, possibly as a result of these animals realising a higher carcass weight or having superior meat characteristics. ABARE survey data showed that producers who grain finished cattle realised an average price for cattle sold directly for slaughter of \$884 a head, almost 17 per cent more than their non–grain finishing counterparts.

While non–grain finishing farm businesses generated a larger farm cash income, on average, this was largely because of differences in the scale of their operation. However, when farm cash income is expressed on a 'per hectare operated' basis, farms that grain finished beef cattle generated a farm cash income per hectare operated of \$4.10 per hectare, almost 21 per cent higher than farms that did not grain finish cattle (table 7).

Grain finishing farms realised a lower rate of return on capital, excluding capital appreciation, as these farms are generally located in the cropping zone rather than the pastoral zone. There has been strong growth in land values over the last decade in the cropping regions and, because capital values have risen at a faster rate than farm profitability, this has resulted in a lower operational rate of return on capital for these farms.

## 7 Physical and financial performance indicators, 2007–08 and 2008–09

average per farm

		southern Australia				northern Australia			
		grain finishing		no grain finishing		grain finishing		no grain finishing	
Area operated, 30 June	ha	6 860	(11)	5 485	(10)	8 100	(21)	25 819	(6)
Number of sheep and lambs, 30 June	hd	762	(27)	1 131	(6)	180	(68)	343	(14)
Crop area sown	ha	1 148	(29)	225	(6)	244	(16)	98	(9)
<b>Cattle production</b>									
Number of beef cattle, 30 June	hd	629	(14)	405	(3)	1 153	(16)	1 613	(4)
Branding rate	%	91	(2)	85	(1)	79	(4)	71	(1)
Beef turnoff rate	%	56	(8)	43	(2)	30	(7)	33	(4)
Number of beef cattle purchased	hd	103	(26)	31	(9)	68	(24)	48	(10)
Number of beef cattle sold	hd	344	(16)	170	(3)	337	(13)	399	(4)
– direct for slaughter	%	62	(13)	66	(3)	75	(9)	56	(4)
– for live export	%	13	(44)	2	(31)	1	(64)	11	(11)
– to feedlots/backgrounding	%	18	(40)	15	(11)	8	(50)	13	(11)
– to breeders or for store	%	7	(62)	16	(11)	16	(42)	19	(10)
<b>Grain finishing</b>									
Number of beef cattle grain finished	hd	161	(21)	–		138	(18)	–	
Average length of grain finishing	days	74	(8)	–		85	(4)	–	
Proportion of cattle sold that were grain finished	%	47	(13)	–		41	(14)	–	
Average price received for beef cattle sold directly to slaughter	\$/hd	716	(5)	689	(1)	884	(3)	758	(2)
<b>Farm financial performance</b>									
Farm cash income	\$	159 225	(49)	46 903	(9)	33 247	(73)	86 499	(10)
– per hectare operated	\$/ha	23.2	(47)	8.6	(14)	4.1	(76)	3.4	(11)
Farm business profit	\$	85 293	(72)	–23 885	(19)	–34 748	(75)	18 938	(53)
<b>Rate of return</b>									
– excluding capital appreciation	%	2.5	(26)	0.3	(42)	0.5	(68)	1.0	(14)

Note: The figures in parentheses are standard errors expressed as a percentage of the estimate. A guide on how to use standard errors is in the methodology section at the back of the report.

In order to investigate if there were differences in farm financial performance between grain finishing farms, beef cattle producers in northern Australia who used grain finishing were divided into three groups based on the average length of time that cattle were fed:

- less than 80 days
- 80 to 100 days
- more than 100 days.

On average, producers who fed cattle for less than 80 days fed 115 cattle, compared with 138 cattle for producers feeding 80 to 100 days and 163 cattle for producers feeding for more than 100 days (table 8). In addition, grain finished cattle represented the greatest proportion of cattle sold for producers feeding for between 80 and 100 days, averaging 46 per cent of cattle sold.

In 2007–08 and 2008–09, purchases of grain represented, on average, 40 per cent of the total quantity of grain available for on-farm use for producers feeding cattle for more than 100 days, compared with 20 per cent for producers feeding for 80 to 100 days and just 4 per cent for producers feeding for less than 80 days (table 8).

## 8 Physical and financial performance indicators of farms grain finishing beef cattle, by duration on grain, 2007-08 and 2008-09 average per farm

		southern Australia			northern Australia		
		less than 60 days	60 to 90 days	more than 90 days	less than 80 days	80 to 100 days	more than 100 days
Area operated, 30 June	ha	3 643 (104)	2 617 (46)	11 472 (205)	6 558 (41)	8 185 (83)	9 672 (60)
Number of sheep and lambs, 30 June	hd	698 (43)	467 (41)	1 025 (31)	402 (80)	128 (62)	4 (80)
<b>Cattle production</b>							
Number of beef cattle, 30 June	hd	1 021 (66)	684 (27)	439 (44)	1 071 (43)	930 (57)	1 510 (33)
Number of beef cattle purchased	hd	127 (162)	120 (31)	79 (27)	69 (104)	58 (47)	78 (34)
Number of beef cattle sold	hd	577 (101)	413 (20)	202 (32)	294 (46)	303 (34)	425 (24)
– direct for slaughter	%	56 (50)	53 (28)	83 (16)	70 (22)	84 (23)	72 (19)
– for live export	%	32 (117)	3 (90)	12 (110)	–	2 (78)	–
– to feedlots/backgrounding	%	11 (164)	31 (48)	4 (85)	10 (138)	– 10 (95)	
– to breeders or for store	%	2 (118)	14 (61)	1 (348)	20 (72)	11 (192)	16 (94)
<b>Grain production</b>							
Crop area sown	ha	398 (67)	1 242 (74)	1 350 (60)	215 (100)	205 (38)	324 (23)
Grain production	t	1 116 (162)	1 238 (71)	2 070 (38)	247 (81)	290 (46)	235 (95)
less grain sold	t	562 (156)	1 143 (78)	1 744 (39)	151 (146)	303 (36)	229 (95)
plus opening stocks of grain	t	113 (27)	128 (43)	174 (37)	106 (209)	59 (56)	40 (68)
plus grain purchases	t	28 (158)	19 (65)	9 (61)	7 (163)	11 (61)	30 (61)
Total grain available for use on farm	t	696 (133)	242 (29)	509 (35)	210 (94)	56 (38)	76 (46)
<b>Grain finishing</b>							
Number of beef cattle grain finished	hd	179 (75)	209 (23)	116 (31)	115 (26)	138 (27)	163 (33)
Average length of grain finishing	days	36 (15)	68 (4)	93 (4)	67 (5)	84 (2)	107 (4)
Proportion of cattle sold that were grain finished	%	31 (85)	51 (14)	57 (15)	39 (35)	46 (25)	38 (26)
Price received for beef cattle sold direct for slaughter	\$/hd	759 (25)	678 (8)	726 (4)	922 (11)	803 (4)	937 (6)
<b>Farm financial performance</b>							
Farm cash income	\$	176 181 (146)	205 088 (75)	115 987 (92)	18 800 (371)	40 684 (60)	39 972 (182)
– per hectare operated	\$/ha	48.5 (47)	78.4 (39)	10.1 (227)	2.8 (385)	5.0 (118)	4.1 (191)
<b>Rate of return</b>							
– excluding capital appreciation	%	1.9 (143)	2.1 (65)	3.3 (30)	0.8 (145)	–0.4 (169)	1.1 (63)

Note: The figures in parentheses are standard errors expressed as a percentage of the estimate. A guide on how to use standard errors is in the methodology section at the back of the report.

In northern Australia, during this period, producers who fed cattle for more than 100 days realised the highest average price for beef cattle sold directly for slaughter, averaging \$937 a head, around 2 per cent higher than the average

realised by producers feeding for less than 80 days and 17 per cent higher than producers who fed for 80 to 100 days (table 8). While producers feeding for 80 to 100 days realised the lowest average price for cattle sold directly for slaughter among the farms that grain finished cattle prior to sale, this price was still 6 per cent higher than that realised by the average non-grain finishing producer in northern Australia (table 7).

Producers in northern Australia who fed cattle for 80 to 100 days realised the highest farm cash income, averaging \$40 684 a farm a year, or \$5 per hectare operated (table 8). In contrast, producers feeding for more than 100 days earned \$4.10 per hectare operated and producers feeding for less than 80 days earned \$2.80 per hectare operated.

Producers who fed cattle for more than 100 days realised a slightly higher return on capital, excluding capital appreciation, during this period, averaging 1.1 per cent, compared with 0.8 per cent, on average, for producers feeding for less than 80 days and -0.4 per cent on average for producers who fed cattle for 80 to 100 days.

## Southern Australia

Grain finishing farms in southern Australia, on average, were larger than non-grain finishing farms, having around 25 per cent more land (table 7). Further, grain finishing farms, on average, held 55 per cent more cattle, sold twice as many cattle and sowed over five times the area to grain crops in comparison to non-grain finishing farms. However, on average, they had 33 per cent fewer sheep.

On average, farms that used grain to finish cattle prior to sale fed 161 cattle for an average duration of 74 days. This represented 46 per cent of the total cattle sold by these properties during this period. On average, farms that grain finished cattle realised \$716 a head sold directly for slaughter, 4 per cent higher than the price realised by non-grain finishing farms.

During this period, farms that grain finished cattle realised a markedly higher farm financial performance, with an average annual farm cash income that was almost three-and-a-half times higher than farms that did not grain finish. On a per hectare operated basis, grain finishing producers generated a farm cash income, on average, of \$23.20 a hectare, compared with just \$8.60 a hectare for non-grain finishing farms. Further, grain finishing producers realised a superior return on capital, excluding capital appreciation—averaging over eight times higher than producers that did not grain finish their cattle.

To explore this superior financial performance further, grain finishing farms in southern Australia were also divided into three groups based on the average length of time that cattle were fed grain. Reflecting the shorter length of time that southern producers feed grain, the groups were defined as producers who fed for:

- less than 60 days
- 60 to 90 days
- more than 90 days.

During this period, the proportion of cattle that had been grain finished prior to sale increased with the duration of time cattle were on feed (table 8). That is, the proportion of grain finished cattle sold increased from 31 per cent for producers feeding for less than 60 days to 51 per cent for producers feeding for 60 to 90 days and 57 per cent for producers feeding for more than 90 days.

Producers who fed cattle grain for less than 60 days realised the highest average price for cattle sold directly for slaughter, while producers who fed for 60 to 90 days realised the lowest average price. Further, producers who fed for 60 to 90 days realised an average price that was around the same as that realised by producers who did not grain finish (table 7). This may suggest that some producers were using grain finishing to a minimum weight prior to sale, rather than attempting to produce heavier animals with superior meat characteristics or accepting a lower price for lighter weight animals.

Producers who fed grain for 60 to 90 days realised the highest farm cash income per hectare operated during this period. On average, these producers realised an annual farm cash income per hectare operated of \$78.40 a hectare, compared with \$48.50 a hectare for producers who fed cattle for less than 60 days and \$10.10 a hectare for producers who fed for more than 90 days.

While farms that grain finished for 60 to 90 days were among the smallest beef cattle producing farms that used grain to finish cattle in southern Australia, these farms realised the highest average farm cash income per farm during this

period, as a result of generating a higher income per hectare operated. Farms that fed for more than 90 days realised the highest return on capital despite generating the lowest average farm cash income, as the value of farm capital used by these producers is lower. These farms are mainly located in the pastoral regions of southern Australia, where land values are typically lower.

## Farm performance of beef cattle traders

Beef cattle producers can be classified into one of two groups based on the source of their cattle—traders and non-traders. Non-traders run self-replacing cattle herds, with finished stock and surplus calves sold. Traders largely rely on other beef cattle farms to produce young animals that traders purchase and finish prior to re-selling them. A farm is defined as a trader if both turn-on and turn-off rates are above 60 per cent.

In both northern and southern Australia, the different production systems used by traders and non-traders are reflected in herd composition (table 9). In the three years to 2008–09, non-traders' beef cattle herds contain proportionally more breeding cattle (cows and replacement heifers), as well as calves that have been retained either for finishing or for inclusion in the breeding herd once they have matured. In contrast, around 60 per cent of the typical trader's herd comprises non-breeding cattle stock that are still being finished for sale. Consequently, relative to non-traders, traders mate fewer cows and produce a relatively small number of calves given the size of their cattle herd.

Between 2006–07 and 2008–09, traders purchased seven and 12 times more beef cattle for northern and southern Australia, respectively, than their non-trading counterparts. This high level of turn-on also enabled traders to maintain a high level of turn-off. In this period, traders annually sold two to three times as many cattle as their non-trading counterparts.

### 9 Physical and financial performance indicators, traders of beef cattle versus non-traders, 2006–07 to 2008–09 average per farm

		southern Australia				northern Australia			
		non-traders		traders		non-traders		traders	
Area operated, 30 June	ha	5 439	(9)	1 138	(13)	28 167	(5)	38 744	(27)
Crop area sown	ha	266	(5)	319	(18)	105	(8)	211	(23)
Number of sheep and lambs, 30 June	hd	1 315	(5)	796	(51)	308	(14)	95	(83)
Number of beef cattle, 30 June	hd	441	(3)	387	(20)	1 793	(3)	1 905	(13)
– bulls	%	2	(3)	2	(46)	2	(4)	1	(39)
– cows	%	45	(1)	19	(20)	43	(2)	33	(20)
– replacement heifers	%	11	(3)	6	(32)	10	(3)	3	(27)
– calves	%	26	(2)	14	(22)	19	(3)	2	(40)
– other	%	16	(5)	59	(13)	26	(4)	62	(11)
Number of cows mated	hd	203	(3)	78	(29)	734	(4)	292	(30)
Branding rate	%	85	(1)	88	(5)	71	(1)	53	(19)
Number of beef cattle purchased	hd	47	(18)	575	(25)	80	(16)	535	(19)
Number of beef cattle sold	hd	209	(5)	655	(22)	455	(4)	835	(15)
– direct for slaughter	%	66	(3)	71	(21)	60	(3)	57	(16)
– for live export	%	2	(37)	2	(178)	9	(11)	15	(39)
– to feedlots/backgrounding	%	17	(9)	22	(45)	12	(11)	9	(58)
– to breeders or for store	%	15	(10)	5	(311)	18	(8)	19	(29)
Average price received for cattle	\$/hd	700	(2)	889	(3)	759	(2)	712	(4)
<b>Farm financial performance</b>									
Farm cash income	\$	45 327	(11)	100 887	(30)	88 315	(11)	84 058	(165)
– per hectare operated	\$/ha	8.3	(14)	90.7	(33)	3.1	(12)	2.2	(157)
Rate of return									
– excluding capital appreciation	%	0.0	(9754)	1.1	(68)	1.2	(13)	1.9	(69)

Note: The figures in parentheses are standard errors expressed as a percentage of the estimate. A guide on how to use standard errors is in the methodology section at the back of the report.

In northern Australia, there is little difference between the markets targeted, on average, by traders and non-traders. Around 60 per cent of cattle are sold directly for slaughter, with live export markets accounting for 10–15 per cent and breeders and store purchasers accounting for 18–19 per cent of cattle sales. However, during this period, non-traders realized, on average, a 6 per cent higher price for their cattle.

In the three years to 2008–09, non-traders in northern Australia realised a higher annual farm cash income per hectare operated, averaging \$3.10 a hectare—or 41 per cent higher than that achieved by traders.

In southern Australia, on average, traders sold proportionally more cattle directly for slaughter and to feedlots, while non-traders sold proportionally more to breeders and for store purposes. Reflecting the greater focus on the production of more mature and heavier animals, traders realised a significantly higher price for their cattle, averaging around 27 per cent higher.

Also, during this period, traders in southern Australia sourced cattle at a lower price, as the extended dry conditions caused many non-trading producers to increase turn-off rates in order to destock. However, the benefit of this was partly offset by the dry conditions increasing the cost of purchased fodder and grain.

In the three years to 2008–09, traders in southern Australia realised a significantly higher annual farm cash income, averaging \$90.70 per hectare operated, around 11 times higher than their non-trading counterparts.

During this period, in both northern and southern Australia, traders realised a higher rate of return on capital than non-traders. The high rate of return on capital realised by traders in southern Australia was largely driven by higher incomes and profitability per hectare operated. In the case of northern Australia, differences in the average rate of return were largely driven by differences in capital values.

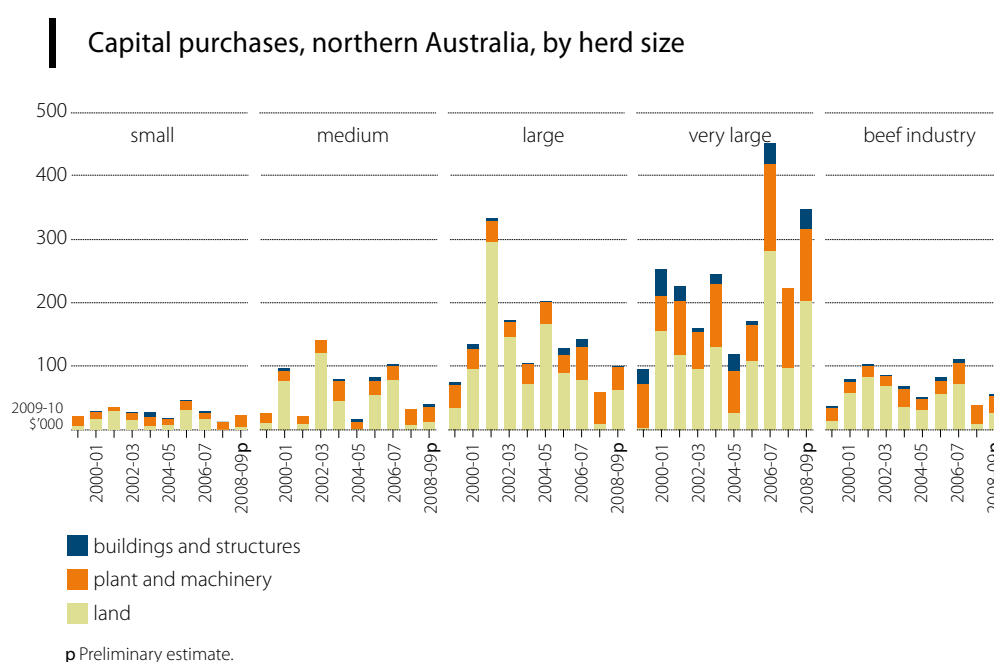
## Farm investments

Producers’ capacity to boost incomes in the future will be influenced, in part, by previous investments in additional land to expand the scale of farming activities and in new infrastructure or machinery to boost productivity. An investment allowance was made available to businesses committing to investing in depreciating assets between 31 December 2008 and 31 December 2009 as part of the Australian Government’s Nation Building and Jobs Plan to support economic activity during the global financial crisis, and this is likely to have stimulated investments in infrastructure and machinery. Data currently available cover only the first six months of this period.

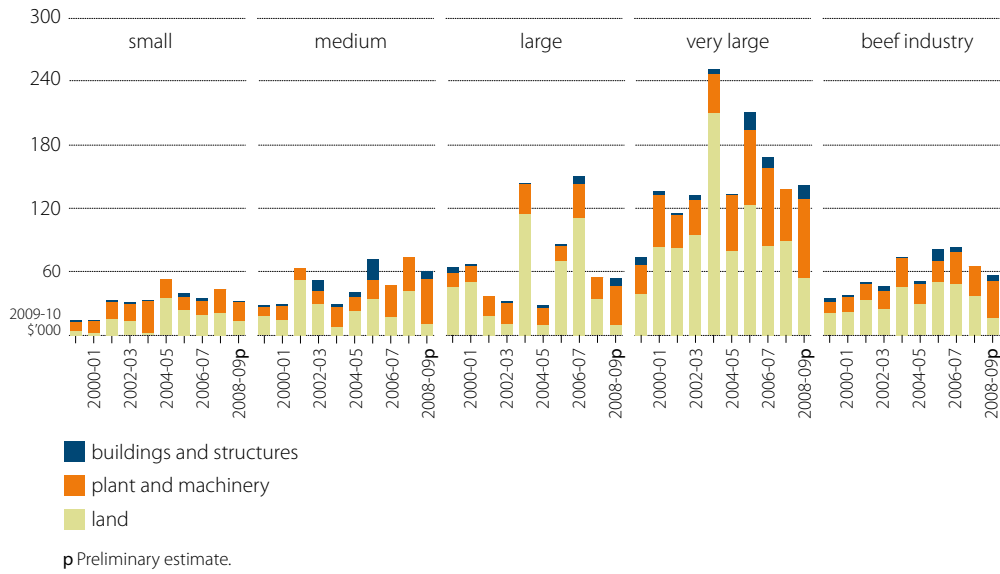
### Investments undertaken

Over the past decade, beef cattle producers have maintained a strong level of new investments in capital. Producers in northern Australia have, on average, invested \$71 000 a farm for each year during this period, compared with \$58 000 a farm in southern Australia.

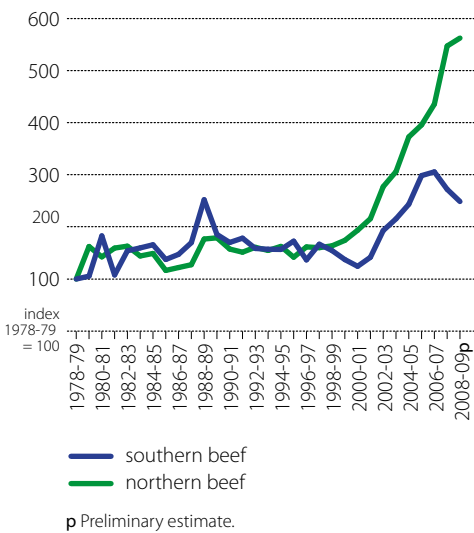
In northern Australia, most producers reduced their purchases of plant and machinery in 2008-09, though this follows a number of years of above-average investments (figure I). On average, purchases of plant and machinery in northern Australia declined by 9 per cent in 2008–09. However, in southern Australia, with the exception of small scale beef



### m Capital purchases, southern Australia, by herd size



### n Average land values for beef industry farms

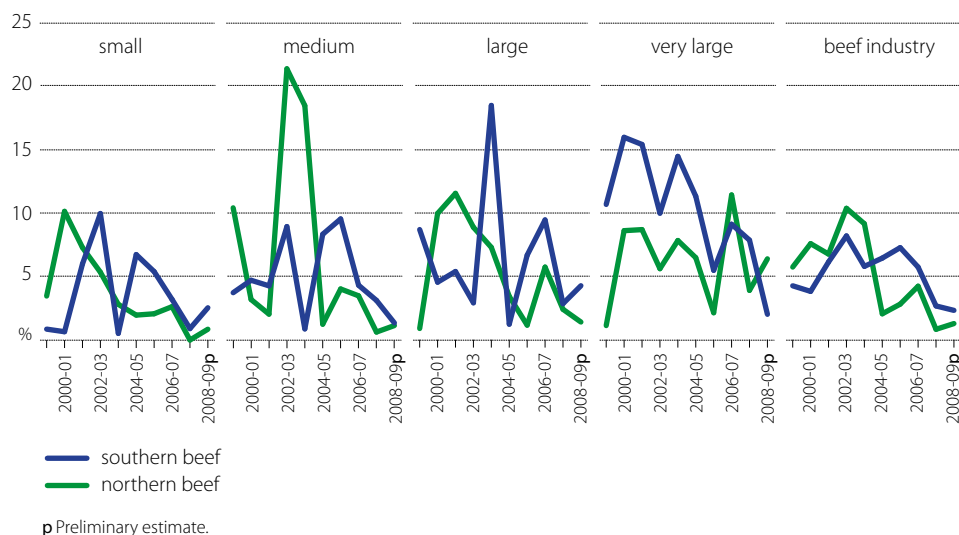


cattle producers, producers of all scales of production increased their purchases of plant and machinery in 2008–09 (figure m). Small scale producers' capacity to undertake new capital investments in recent years has been constrained by tight cash flows and poor profitability.

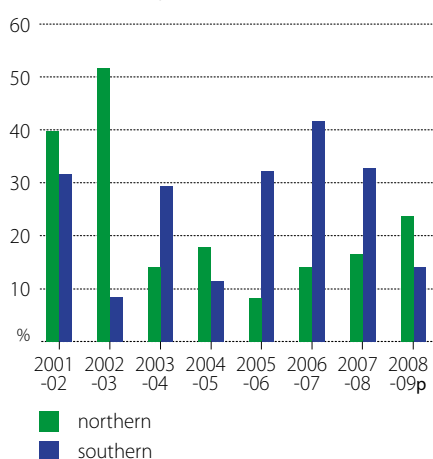
Despite historically high land values, beef cattle producers in both northern and southern Australia have allocated a large share of their investments to purchasing additional land. In northern Australia, average land values increased for the twelfth consecutive year, though at a slower rate, while in southern Australia, average land values fell for the second consecutive year but remain historically high (figure n).

The proportion of beef cattle producers that purchased land has been falling steadily in recent years, possibly because of the high land prices and lower farm incomes (figure o). In 2008–09, only 2.3 per cent of northern beef producers and 1.3 per cent of southern beef producers acquired more land. However, the average value of the purchases undertaken has increased significantly as the volume of land purchased by producers who are expanding continues to represent a significant increase in these farms' area operated (figure p).

### o Proportion of farms expanding, by herd size



### p Increase in area operated on expanding farms



p Preliminary estimate.

### Financing investments

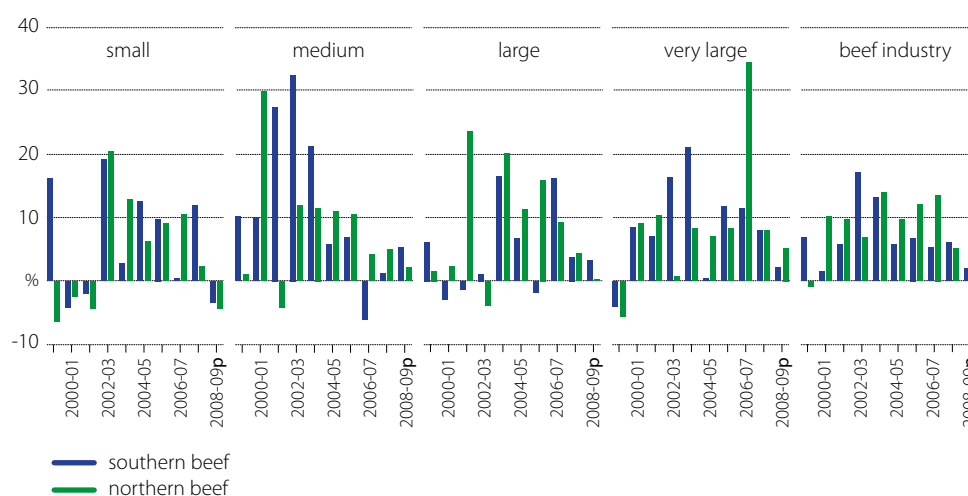
Producers have a number of options available to fund new capital purchases, including farm businesses' cash flows, increasing debt, running down liquid assets and using off-farm income sources.

Producers of different scales of beef cattle production used a different blend of these funding sources in 2008-09. On average, relatively small new investments, combined with improved net farm cash inflows in 2008-09 and above industry average off-farm income sources, enabled small scale producers to fund their investments with cash and to reduce debt levels (figure q). In contrast, medium, large and very large scale producers increased farm business debt during 2008-09 to fund some of their capital investments. Medium scale producers in southern Australia and very large scale producers in northern Australia had the largest increases in farm debt in 2008-09.

Reflecting these differences in the use of debt to finance farm investments, producers of different scales of beef cattle production experienced markedly different changes in debt servicing costs in 2008-09 (figure r). Small scale

producers in northern Australia and medium scale producers in both regions experienced some improvement in debt servicing capacity, with the proportion of farm receipts used to meet their businesses' interest payments falling. This was because of the combined effects of low interest rates, some recovery in farm cash receipts and, in the case of small scale producers, lower debt. However, very large scale producers in both northern and southern Australia, and large scale producers in southern Australia, experienced a further reduction in debt servicing capacity in 2008-09 as a result of continued increases in debts.

### q Change in farm debt



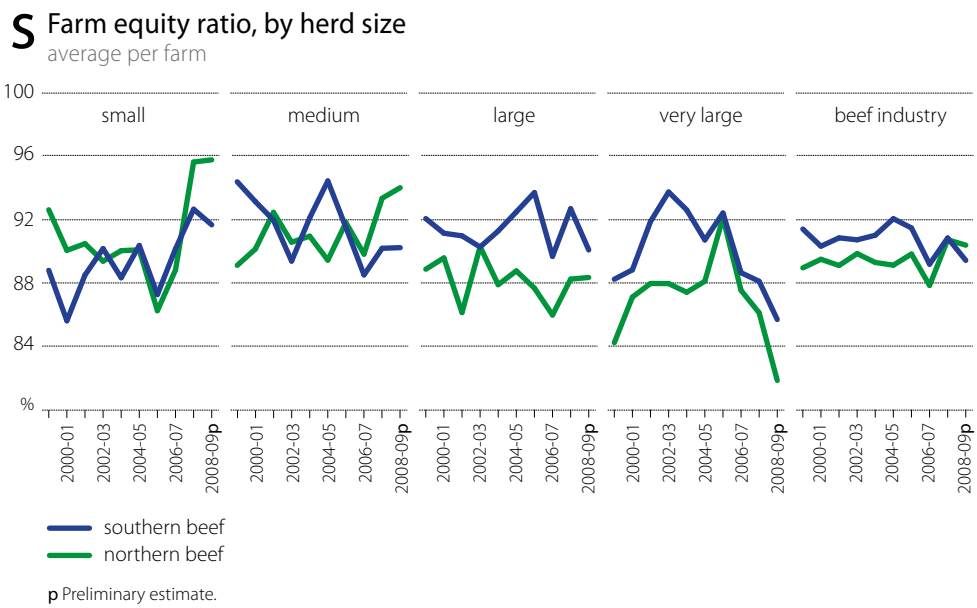
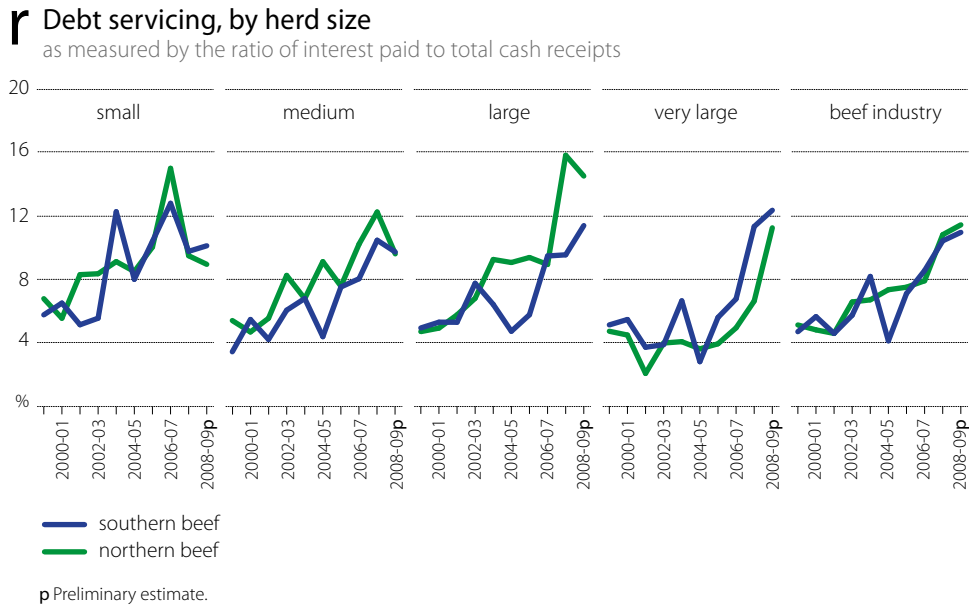
p Preliminary estimate.

With land values growing at a faster rate than farm business debts, equity levels in northern Australia strengthened for many producers (figure s). An exception was very large scale beef cattle producers, where debts increased at a faster rate than land values. In southern Australia, weaker land values, combined with higher debts, resulted in equity levels falling, on average, for most scales of beef cattle production. Equity levels declined the most among very large scale producers, with producers' equity ratios in both northern and southern Australia falling to their lowest level in 15 years. Nonetheless, farm equity ratios remain relatively high, averaging 82-96 per cent across Australia.

### Profile of beef producers experiencing financial stress

To understand better the factors influencing producers experiencing financial stress, beef cattle producing farms were allocated to one of four groups based on average farm cash income and equity ratio in each year the farm was surveyed during the 2006-07 to 2008-09 period: low equity/negative income; low equity/positive income;

high equity/negative income; and high equity/positive income. Farm businesses are defined as having low equity if their equity ratio is less than 70 per cent.



Farm businesses with a high equity level are in a relatively strong position to expand in coming years. Producers whose farms generate a positive income and have a high equity ratio are in the strongest financial position, with net cash inflows and significant equity that can be used to borrow against to help fund investments to boost their farms' scale and productivity. In contrast, farms with high equity and negative income are experiencing net cash outflows but have sufficient equity to be able to borrow against to fund the shortfall in cash flows to keep their business going and make the necessary capital investments to enhance their future financial performance.

Many of the producers with low equity levels in their business may experience significant difficulties expanding in the short term, and some may not be viable in the longer term. In general, farms with low equity levels but positive farm cash incomes are in a reasonable position to trade their way into a strong equity position. That is, some of the surplus cash flows can be used to reduce debt and to fund new capital purchases without taking on more debt. Over time, this will enable these producers to further strengthen their farms' cash income and equity.

Farms with low equity and negative cash flows are likely to have the greatest difficulties in acquiring the additional funding needed to trade their way out of their current situation. However, not all of the farms currently experiencing low equity and negative farm cash incomes may be unviable in the longer term. Factors like drought or having recently undertaken some major investments that have yet to flow on to farm cash income may explain their financial situation.

In the three years to 2008–09, an estimated 1043 beef cattle producing farms in Australia (4.4 per cent of producers) had low equity and negative farm cash incomes (table 10). However, these producers accounted for a slightly larger proportion of the national cattle herd and cattle sales—6.8 per cent and 6.5 per cent, respectively. In contrast, almost 60 per cent of beef producers were in a very sound financial position during this period, with high equity and positive farm cash incomes.

Producers with low equity and negative incomes during this period were found in every region of Australia. However, there were higher concentrations of these farms in the Northern Territory, north-western New South Wales, the Wimmera region in Victoria, north central Queensland and in the Kimberley region and the wheat belt of Western Australia. In the three years to 2008–09, low equity/negative income farms were, on average, larger farms with substantial beef cattle herds (almost 1700 head per farm) and sowed a relatively large area to grain crops.

Operators of low equity/negative farm cash income properties are, on average, younger than their industry counterparts (table 11). Some of these producers may be relatively new entrants into farming and, as a consequence of having recently acquired their farms, may have high debt.

## 10 Distribution of beef cattle farms, by equity and income

average between 2006–07 and 2008–09

	low equity, negative income	low equity, positive income	high equity, negative income	high equity, positive income	total
Number of farms	1 043	1 766	6 627	14 058	23 494
Proportion of farms	4.4	7.5	28.2	59.8	100
Proportion of beef cattle herd	9.2	17.8	18.8	54.3	100
Proportion of beef cattle sold	6.8	15.7	18.0	59.5	100
Proportion of value of cattle sales	6.5	15.3	16.5	61.7	100

## 11 Physical and financial characteristics of beef cattle producing farms, by equity and income

average between 2006–07 and 2008–09

		low equity, negative income	low equity, positive income	high equity, negative income	high equity, positive income
Proportion of farms in drought	%	48	37	41	32
Age of operator	yrs	52	56	58	58
<b>Physical characteristics</b>					
Area operated, 30 June	ha	38 992	38 776	9 346	8 211
Area sown to crops	ha	796	329	130	207
Number of sheep, 30 June	no	1 648	1 569	762	1 008
Number of beef cattle, 30 June	no	1 698	1 950	547	747
Number of sheep and lambs sold	no	747	873	334	465
Number of beef cattle sold	no	440	602	183	286
– direct for slaughter	%	61.5	57.8	56.2	67.9
– to breeders and for store purposes	%	17.8	14.6	21.0	14.5
– live export	%	7.5	10.8	5.1	3.2
– feedlots and backgrounding	%	12.8	16.1	17.2	13.8
– stud	%	0.3	0.7	0.5	0.6
Sheep and lambs shorn	no	1 773	1 915	868	1 125
Wool production	kg	7 178	7 503	3 321	4 667
<b>Farm financial performance</b>					
Farm cash receipts	\$	894 136	1 008 447	204 344	375 525
Farm cash costs	\$	1 071 014	791 076	254 103	271 642
Farm cash income	\$	–176 879	217 370	–49 759	103 884
Buildup in the value of trading stocks	\$	42 805	–21 086	28 682	2 335
<b>Farm business profit</b>	\$	–258 729	88 209	–92 070	21 416
<b>Rate of return</b>					
– excluding capital appreciation	%	–0.6	2.1	–1.3	1.1
– including capital appreciation	%	0.7	3.8	4.9	4.3
<b>Financial performance per hectare operated</b>					
Farm cash receipts	\$/ha	23.0	26.0	21.9	45.8
Farm cash costs	\$/ha	27.5	20.4	27.3	33.1
Farm cash income	\$/ha	–4.5	5.6	–5.3	12.7

Note: Standard errors can be supplied on request.

Operators of low equity/negative income farms were also more likely to have been experiencing adverse seasonal conditions during this period, with almost half of these producers considering their farm to be in drought.

To gain some additional insights into the effects of drought, low equity/negative income farms were divided into two groups based on whether or not they were in drought (table 12).

## 12 Impact of drought on low equity, negative income beef cattle producers

average between 2006–07 and 2008–09

	southern Australia		northern Australia		
	not in drought	in drought	not in drought	in drought	
<b>Physical characteristics</b>					
Area operated, 30 June	ha	24 591	7 573	124 785	45 100
Area sown to crops	ha	949	1062	333	292
Number of sheep, 30 June	no	885	3 651	256	23
– annual percentage change	%	13.1	–4.4	–6.6	–17.3
Number of beef cattle, 30 June	no	723	524	6 143	1 350
– annual percentage change	%	12.0	–0.9	5.2	–10.4
Number of sheep and lambs sold	no	406	1668	75	20
Number of beef cattle sold	no	209	349	952	597
Sheep and lambs shorn	no	822	4 065	237	43
Wool production	kg	3 700	16 175	853	109
<b>Farm financial performance</b>					
Farm cash receipts	\$	658 671	917 251	1 351 252	815 965
Farm cash costs	\$	832 477	1 085 852	1 515 779	1 041 601
Farm cash income	\$	–173 806	–168 601	–164 527	–225 636
Buildup in the value of trading stocks	\$	119 169	–42 421	180 081	–114 689
<b>Farm business profit</b>	\$	–175 886	–341 000	–115 545	–450 094
<b>Rate of return</b>					
– excluding capital appreciation	%	0.9	–2.0	0.7	–3.4
– including capital appreciation	%	0.7	–1.1	3.7	–1.9

Note: Standard errors can be supplied on request.

In both northern and southern Australia, farm businesses that experienced drought realised markedly lower grain yields and reduced sheep and beef cattle numbers over the three years to 2008–09. By reducing livestock numbers, these producers limited their outlays on fodder purchases. However, this also reduced the number of ewes and cows that could have been mated, resulting in reduced lamb and calf production and constrained future income. In southern Australia, drought-affected farms were more heavily dependent on wool, producing over four times more wool than non-drought affected farms in this group. This suggests that these producers' financial performance will have also been more heavily influenced by the low returns from wool sales.

The influence of past and current investments is one factor that may have caused producers to have low equity and negative farm cash incomes during this period. For some producers, debts may have been accumulated to acquire their farm, to purchase more land and capital or to expand their livestock numbers. Consequently, a mix of lower revenue—because of reduced cattle turn-off—and higher interest and livestock purchasing costs may have caused these farms to experience temporarily low equity and negative incomes, even without drought.

To investigate this possibility, producers with low equity and negative incomes but who were not experiencing drought were classified into two groups based on whether or not they were net investors in their business. Investments are made in two principal forms: purchases of new capital; and a net increase of on-farm inventories, including livestock numbers.

In the three years to 2008–09, around half of these producers in southern Australia were net investors, compared with almost three quarters in northern Australia (table 13). On average, producers who made net investments in their businesses in southern Australia made net purchases of capital worth \$209 451 a year, with around half of this used to acquire more land. Also, these producers expanded their livestock and other inventories by \$262 702 a year. In northern Australia, the average producer made net investments of around \$90 000 a year on new capital (around three-quarters

of which was to acquire new machinery and structures) and boosted farm inventories (primarily beef cattle) by over \$550 000 a year. These investments were associated with an annual increase in farm business debt of 3–4 per cent. In both cases, most of these businesses would have realised positive farm cash incomes if they had not undertaken these investments (by selling the animals added to inventories and avoiding the extra interest payments). However, these investments place producers in a good position to expand production and to boost farm income in the future.

## 13 Investments undertaken by low equity, negative income farms not experiencing drought

average between 2006–07 and 2008–09

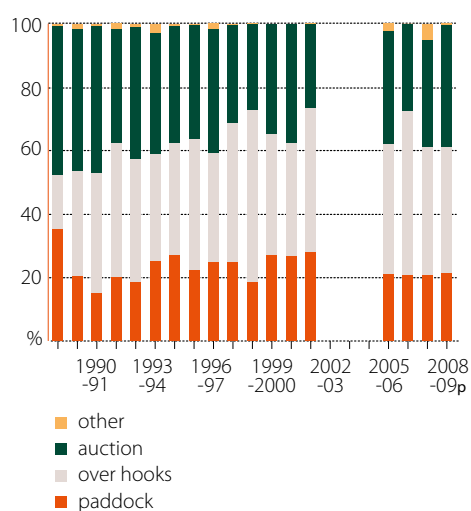
	southern Australia		northern Australia	
	net sellers	net buyers	net sellers	net buyers
Number of farms	181	173	51	135
Net capital additions	\$ -933 797	209 451	-984 604	91 543
<b>Annual change in animal numbers</b>				
Sheep	% -4.1	21.3	na	-6.6
Beef cattle	% -3.4	21.3	-15.6	15.4
Buildup in the value of trading stocks	\$ -18 170	262 702	-800 946	553 717
<b>Farm financial performance</b>				
Farm cash receipts	\$ 233 992	1 102 506	2 406 280	949 432
Farm cash costs	\$ 284 931	1 404 722	1 911 768	1 364 962
Farm cash income	\$ -50 939	-302 216	494 512	-415 530
Change in farm business debt	% -24.7	2.8	-7.9	4.3

na Not applicable.

Note: Standard errors can be supplied on request.

Finally, producers with low equity and negative incomes but who were not affected by drought or did not undertake new investments accounted for around 1 per cent of farms that produce beef cattle in Australia. On average, operators of these farms sold land and other capital worth almost \$1 million annually during this period. Further, these producers used the funds from these sales to finance the short fall in their businesses cash flows and to reduce debt, on average, by almost 25 per cent a year in southern Australia and around 8 per cent a year in northern Australia.

### t Method of selling beef cattle, northern Australia



p Preliminary estimate.

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

## Selling methods used for beef cattle

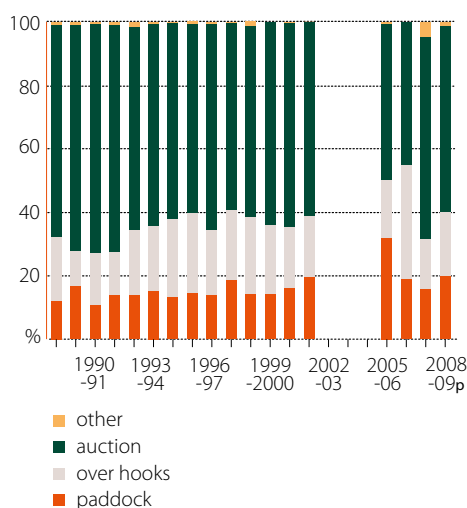
Beef cattle producers have a number of methods by which they can sell cattle—via auction, in the paddock and over the hooks being the three primary methods used in Australia. ABARE's farm survey data show that there are differences in the preferred method of sale between northern and southern Australia.

Between 1988–89 and 1994–95, although beef cattle producing farms in northern Australia sold proportionally more cattle via the auction system than over the hooks the auction share was declining. Since 1995–96, the proportion of cattle sold over the hooks has been consistently higher than the proportion sold for auction (figure t). In 2008–09, approximately the same proportion of cattle sold in northern Australia was sold over the hooks as via auction—back to the mid-1990s level of around 40 per cent.

In southern Australia, the auction system has remained the main method of sale (figure u). However, as with northern Australia, the proportion of cattle sold via auction in southern Australia has declined, from around 70 per cent in the late 1980s and early 1990s to less than 45 per cent in 2006–07. In 2008–09, improved seasonal conditions and some reduction in sales of cattle for slaughter resulted in auction sales recovering to represent 58 per cent of beef cattle sales, while sales over the hooks and in the paddock each accounted for around 20 per cent of sales.

When beef cattle producers in both northern and southern Australia were ranked by farm financial performance (as measured by rate of return, excluding capital appreciation) over the period 2005–06 to 2008–09, the survey data showed differences in the preferred selling methods between the top 25 per cent of producers and other producers (table 14). The top 25 per cent of producers, on average, sold a greater proportion of cattle over the hook and fewer cattle via auction than other producers.

### U Method of selling beef cattle, southern Australia



p Preliminary estimate.

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

## 14 Beef cattle selling methods 2005-06 to 2008-09, by farm performance <sup>a</sup> average per farm

		average for farms		
		bottom 25 per cent	middle 50 per cent	top 25 per cent
<b>Southern Australia</b>				
Paddock	%	25 (17)	20 (23)	23 (17)
Over hooks	%	19 (27)	18 (13)	33 (21)
Auction	%	56 (38)	62 (21)	41 (28)
Other	%	1 (74)	1 (43)	2 (28)
<b>Northern Australia</b>				
Paddock	%	18 (18)	20 (10)	23 (13)
Over hooks	%	32 (20)	45 (6)	46 (13)
Auction	%	49 (40)	33 (24)	29 (33)
Other	%	1 (58)	2 (149)	2 (37)

<sup>a</sup> Farms ranked by rate of return, excluding capital appreciation.

Note: The figures in parentheses are standard errors expressed as a percentage of the estimate. A guide on how to use standard errors is in the methodology section at the back of the report.

## Survey methodology and definitions

### Target population

ABARE 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). This framework includes agricultural establishments in each statistical local area classified by size and major industry. The estimates published in this report cover establishments with an estimated value of agricultural operations of \$40 000 or more. A definition of the estimated value of agricultural operations is given in Australian Standard Industrial Classification (ABS 1983, cat. no. 1201.0).

### Survey design and sample weighting

The population was stratified by operation size using the estimated value of agricultural operation (EVAO). The size of each stratum was determined using the Dalenius-Hodges method. The sample allocation to each stratum was done using a mixture of the Neyman allocation, which takes into account variability within strata of the auxiliary variable, in this case EVAO, and proportional allocation, which only considers the population number in each stratum. The Neyman allocation allocates large proportions of sample to strata with large variability, in the case of this survey, strata of larger farms.

The estimates presented in this report are calculated by appropriately weighting the data collected from each sample farm and then using the weighted data to calculate population estimates. Generally, larger farms have smaller weights and smaller farms have larger weights, reflecting the strategy of sampling a higher fraction of larger farms than of smaller farms (the former having a wider range of variability of key characteristics).

## Reliability of estimates

The reliability of the estimates of population characteristics presented in this report 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 2007–08 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 the estimates.

The 2008–09 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 2009–10 estimates are provisional estimates developed from the data collected via on-farm interviews and telephone interviews in the period October to December, as well as from the preliminary estimates. Provisional 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 2009–10 year. Modifications are made to expected receipts and expenditure where significant production and price change has occurred post-interview. Provisional estimates are necessarily subject to greater uncertainty than the preliminary and final estimates.

Preliminary and provisional 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 small number of farms out of the total number of farms in a particular industry are 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 smaller sampling errors than industry and state estimates.

To give a guide to the reliability of the survey estimates, sampling errors have been calculated for all estimates in this report. These estimated errors, expressed as percentages of the survey estimates and termed 'relative standard errors', are given next to each estimate in parentheses.

### *Calculating confidence intervals using relative standard errors*

Relative standard errors (RSE) 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 is equal to \$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 beef cattle producers and \$51 664 medium scale beef cattle 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:

$$\sqrt{(38 \times \$56\,334/100)^2 + (38 \times \$51\,664/100)^2} = \$31\,292$$

A 95 per cent confidence interval for the difference is:

$$\$7670 \pm 1.96 \times \$31292 = (-\$53\,662, \$69\,002)$$

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 business. This person is identified by discussion between interviewer and interviewee as (one of) the key decision-maker(s). This person is usually responsible for the day-to-day operation of the business and may own or have a share in the business.

**Area of land at business premises:** 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 capital employed by the business is the market value of all the assets used including leased items but excluding machinery and equipment either hired or used by contractors. Market valuations were provided by the owner manager of surveyed businesses and included the market value of land and fixed improvements used by the business, excluding the value of the owner manager's house. The house value deducted from the total value of land and fixed improvements was the present day replacement cost, depreciated for age.

**Debt:** Estimated as business debt. It includes all debts attributable to the business excluding personal debt and underwritten loans. Information collected at the survey interview was supplemented by information in the business accounts.

**Total cash receipts:** Total of revenues received by the business during the financial year, including revenues from the sale of crops, livestock and livestock products. It includes revenue received from royalties, rebates, refunds, plant hire, contracts, insurance claims and compensation, and government assistance payments.

**Total cash costs:** Payments made by the business for materials and services and for permanent and casual hired labour (excluding partner and other family labour). It includes the value of any lease payments on capital, produce purchased for resale, rent, interest, cropping and livestock related purchases. Capital and household expenditures are excluded from total cash costs. Handling and marketing expenses include commissions, levies etc. for business produce sold. Administration costs include accountancy fees, banking and legal expenses, postage, stationery, subscriptions and telephone. Other cash costs include relatively small cost items like stores, advisory services and travelling expenses.

**Depreciation:** Estimated by applying the diminishing value depreciation method to the market value of capital items at 30 June 2006. Capital items are categorised into several groups and relevant depreciation rates are applied. The capital groups include vehicles; handling, harvesting and packing equipment; cultivation and sowing equipment; computers, electronic and communications equipment; other plant and equipment; and buildings on the business premises.

**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:** Cash operating surplus plus buildup in trading stocks, less depreciation, less the imputed value of the owner manager, partner(s) and family labour.

**Profit at full equity:** Return to capital and management plus interest, rent and finance lease payments less depreciation on leased capital. It is the return produced by all the resources used in the business.

**Rate of return:** The return to all capital used. It is computed by expressing farm business profit at full equity as a percentage of the total opening capital of the business.

**Equity ratio:** Calculated as a percentage of owned capital at 30 June.

**Off-farm income:** Income not derived from the surveyed farm business. It includes all off-farm income from wages and salaries, other businesses, other investments and Commonwealth social support payments. It is estimated for the owner manager and spouse only.



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Farm survey data for the beef, lamb and sheep industries

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