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Australian Dairy

Financial performance of dairy farms, 2015–16 to 2017–18

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

Australian Dairy
July 2018



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Contents

Industry overview	3
1 Farm financial performance	4
Farm cash income and profit.....	4
Performance, by region	8
Rate of return.....	9
2 Farm debt and equity	12
Trends in average debt per farm	12
Equity ratio	13
Debt-servicing capacity	14
Debt and equity, by region	15
Distribution of farms, by debt and equity	16
3 Farm capital and investment	18
Total farm capital	18
Return on land.....	19
New farm investment.....	20
Capital and investment by region.....	21
4 Physical characteristics	24
Trends in physical characteristics, by state	25
Stocking rates	26
Milk yields	27
Physical characteristics by scale of milk production.....	27
Seasonality of milk production.....	28
5 References	30

Tables

Table 1 Farm financial performance, dairy farms, 2015–16 to 2017–18.....	4
Table 2 Farm Performance, by equity ratio, dairy farms, Australia, 2016–17.....	14
Table 3 Distribution of farms, by farm business debt and equity ratio, dairy farms, Australia 30 June 2017	17
Table 4 Changes in milk production, dairy farms, by state, 2015–16 to 2016–17.....	28

Figures

Figure 1 Farm cash income, dairy farms, Australia, 1989–90 to 2017–18.....	6
Figure 2 Proportion of dairy farms with negative farm business profit, Australia, 2000–01 to 2017–18.....	7
Figure 3 Components of total cash costs, dairy farms, Australia, 2000–01 to 2017–18	8
Figure 4 Farm cash income, dairy farms, by region, 2008–09 to 2017–18.....	8
Figure 5 Rate of return, dairy farms, Australia, 2000–01 to 2017–18	9
Figure 6 Distribution of dairy farms, by rate of return, 2016–17 and 2017–18.....	10
Figure 7 Rate of return variability, by region, 1989–90 to 2016–17	11
Figure 8 Total farm debt at 30 June, dairy farms, Australia, 2000–01 to 2017–18	12
Figure 9 Main purpose of farm debt, dairy farms, Australia, 2014–15 to 2016–17	13
Figure 10 Ratio of interest paid to total cash receipts, dairy farms, Australia, 2000–01 to 2017–18.....	14
Figure 11 Distribution of farms, by change in debt, dairy farms, Australia, 2016–17.....	15
Figure 12 Total farm debt, dairy farms, by region, 2007–08 to 2017–18.....	15
Figure 13 Equity ratio, dairy farms, by region 2007–08 to 2016–17	16
Figure 14 Total value of capital and number of farms, dairy farms, Australia, 2000–01 to 2016–17.....	18
Figure 15 Components of capital, dairy farms, Australia, 2012–13 to 2016–17	19
Figure 16 Value of land and fixed improvements per hectare, dairy farms, Australia, 1989–90 to 2016–17.....	20
Figure 17 Total capital additions, dairy farms, Australia, 2000–01 to 2016–17	20
Figure 18 Components of capital additions, dairy farms, Australia, 2012–13 to 2016–17.....	21
Figure 19 Number of dairy farms, by region, 2000–01 to 2016–17.....	22
Figure 20 Total value of capital, dairy farms, by region, 2000–01 to 2016–17.....	22
Figure 21 Proportion of farms making capital additions, dairy farms, by region, 2012–13 to 2016–17.....	23
Figure 22 Number of dairy farms, by state, 2000–01 to 2016–17	24
Figure 23 Share of milk production, dairy farms, by state, 2000–01 to 2016–17.....	25
Figure 24 Total milk production, dairy farms, by state, 2000–01 to 2016–17	25
Figure 25 Milk production, dairy farms, Australia, 2000–01 to 2017–18	26
Figure 26 Dairy cattle per hectare operated, dairy farms, by state, 2000–01 to 2016–17.....	26
Figure 27 Milk yield per cow, dairy farms, by state, 2000–01 to 2016–17	27
Figure 28 Number of Australian dairy farms, by herd size, 2000–01 to 2016–17.....	28
Figure 29 Calving system, dairy farms, by state, 2012–13 to 2016–17	29

Maps

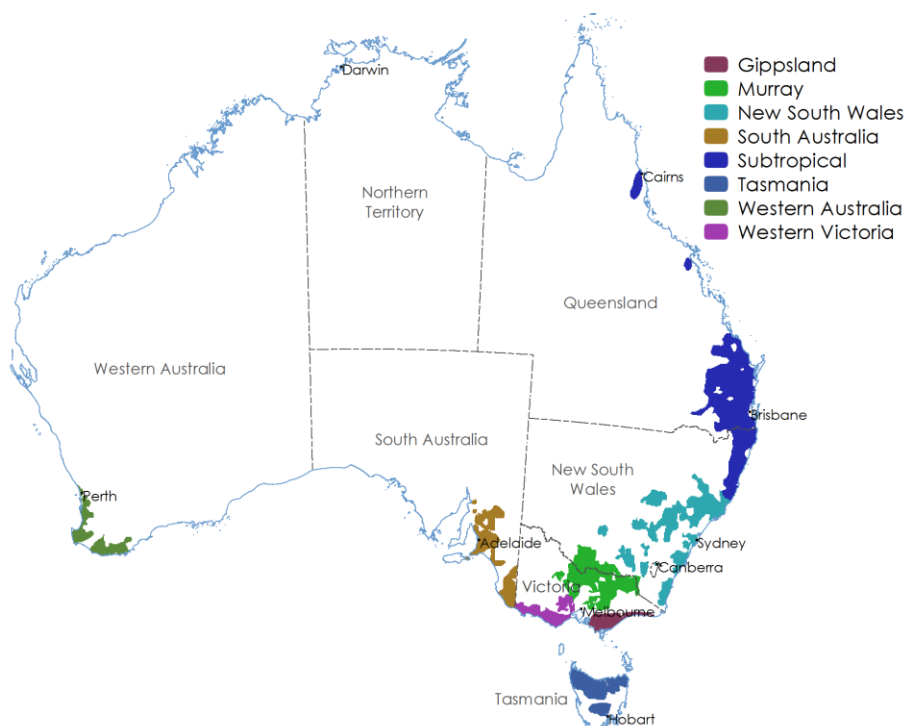
Map 1 Dairy regions	3
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Industry overview

The dairy industry makes an important contribution to the Australian economy. In 2015–16 it accounted for around 8 per cent (\$4.3 billion) of the gross value of agricultural production and around 7 per cent (\$3.0 billion) of agricultural export income.

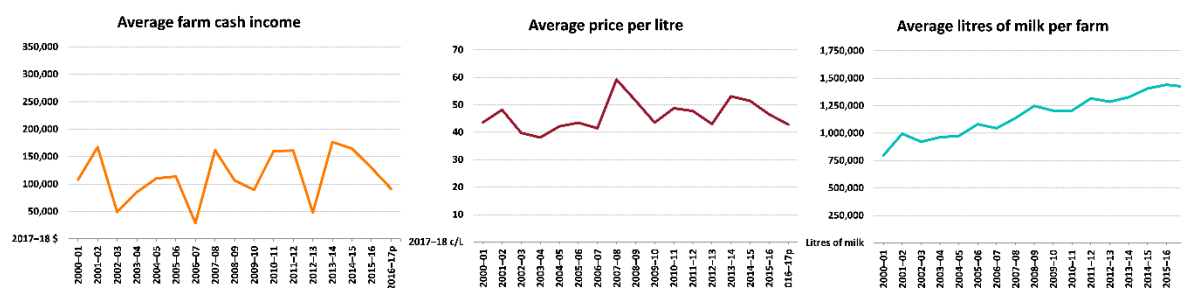
The results below are for farms included in the Australian Dairy Industry Survey (ADIS). The ADIS is funded by the Department of Agriculture and Water Resources. Data are provided at national and regional scales, with regions based on those used by Dairy Australia.

Map 1 Dairy regions



Source: ABARES

Key drivers of farm income



p Preliminary estimate.

Source: ABARES Australian Dairy Industry Survey

1 Farm financial performance

Farm cash income and profit

Australian dairy farm income can fluctuate significantly from year to year. This largely reflects changes in world prices for traded dairy products, the effects of varying seasonal conditions on milk production and the cost of farm inputs.

Average farm cash income of dairy farms declined from around \$125,140 per farm in 2015–16 to \$89,600 in 2016–17 (Table 1). Farm cash income fell in the New South Wales, Murray, Gippsland and Tasmania regions as a result of lower milk prices.

In 2017–18 average farm cash income is projected to increase by around 49 per cent to \$136,000 per farm (Figure 1). In the same period, higher milk prices and increased milk production per farm are projected to result in increased milk receipts.

Table 1 Farm financial performance, dairy farms, 2015–16 to 2017–18

average per farm

Performance measure	Unit	2015–16	2016–17p	2017–18y
Australia				
Total cash receipts	\$	766,800	711,500	787,000
Total cash costs	\$	641,660	621,900	650,000
Farm cash income	\$	125,140	89,600	136,000
Farm business profit	\$	-10,170	-8,300	41,000
Rate of return a	\$	1.3	1.3	2.3
Subtropical				
Total cash receipts	\$	592,510	631,500	606,000
Total cash costs	\$	455,880	478,600	489,000
Farm cash income	\$	136,630	152,900	117,000
Farm business profit	\$	58,290	67,500	3,000
Rate of return a	%	2.8	2.8	0.9
New South Wales				
Total cash receipts	\$	1,031,740	985,300	985,000
Total cash costs	\$	815,960	786,900	814,000
Farm cash income	\$	215,780	198,400	171,000
Farm business profit	\$	90,320	81,500	51,000
Rate of return a	%	3.1	2.6	2.0
Murray				
Total cash receipts	\$	752,650	594,000	698,000
Total cash costs	\$	613,660	557,800	591,000
Farm cash income	\$	138,990	36,200	107,000
Farm business profit	\$	-33,060	-81,800	-2,000
Rate of return a	%	0.4	-0.7	1.1

Australian Dairy: Financial performance of dairy farms, 2015–16 to 2017–18

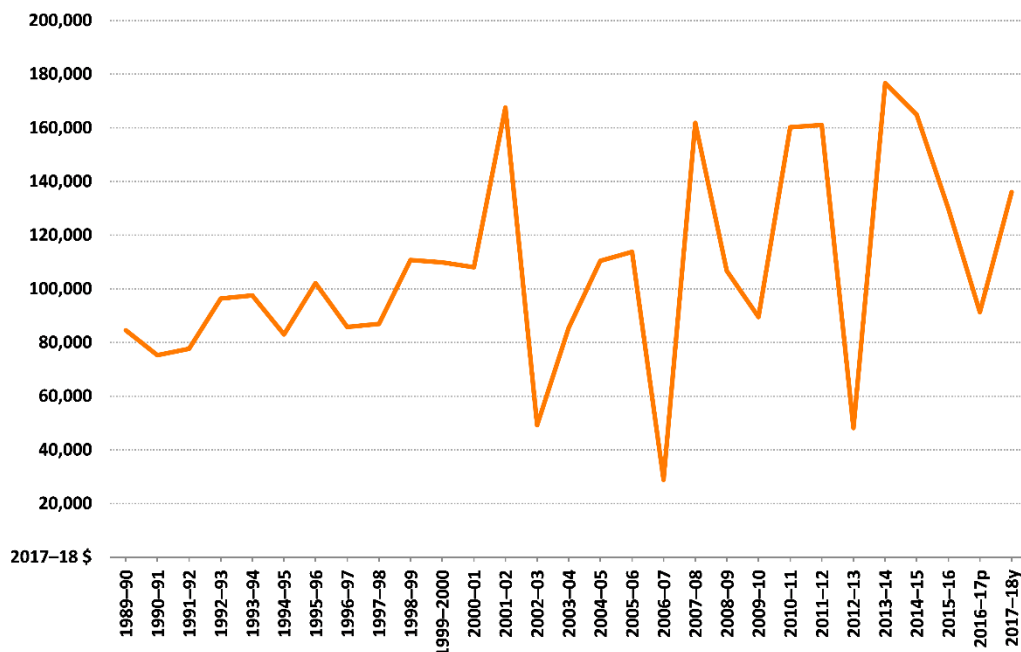
Gippsland				
Total cash receipts	\$	602,520	612,700	691,000
Total cash costs	\$	534,990	589,500	618,000
Farm cash income	\$	67,530	23,200	73,000
Farm business profit	\$	-68,980	-90,200	4,000
Rate of return a	%	0.1	0.2	1.9
Western Victoria				
Total cash receipts	\$	761,650	704,500	780,000
Total cash costs	\$	653,880	594,800	607,000
Farm cash income	\$	107,770	109,700	173,000
Farm business profit	\$	-16,890	48,100	90,000
Rate of return a	%	1.3	2.6	3.7
South Australia				
Total cash receipts	\$	903,490	858,000	1,022,000
Total cash costs	\$	771,780	727,000	802,000
Farm cash income	\$	131,710	131,000	220,000
Farm business profit	\$	18,200	15,400	95,000
Rate of return a	%	2.1	1.8	3.1
Western Australia				
Total cash receipts	\$	1,428,220	1,424,300	1,409,000
Total cash costs	\$	1,093,960	1,050,300	1,096,000
Farm cash income	\$	334,260	374,000	313,000
Farm business profit	\$	201,200	262,700	203,000
Rate of return a	%	3.4	3.7	3.2
Tasmania				
Total cash receipts	\$	1,030,490	926,900	1,078,000
Total cash costs	\$	896,580	829,400	879,000
Farm cash income	\$	133,900	97,500	200,000
Farm business profit	\$	-660	31,700	105,000
Rate of return a	%	1.8	2.5	3.7

p Preliminary estimate. **y** Provisional estimate. **a** Excluding capital appreciation.

Source: ABARES Australian Dairy Industry Survey

Figure 1 Farm cash income, dairy farms, Australia, 1989–90 to 2017–18

average per farm



p Preliminary estimate. y Provisional estimate.

Source: ABARES Australian Dairy Industry Survey

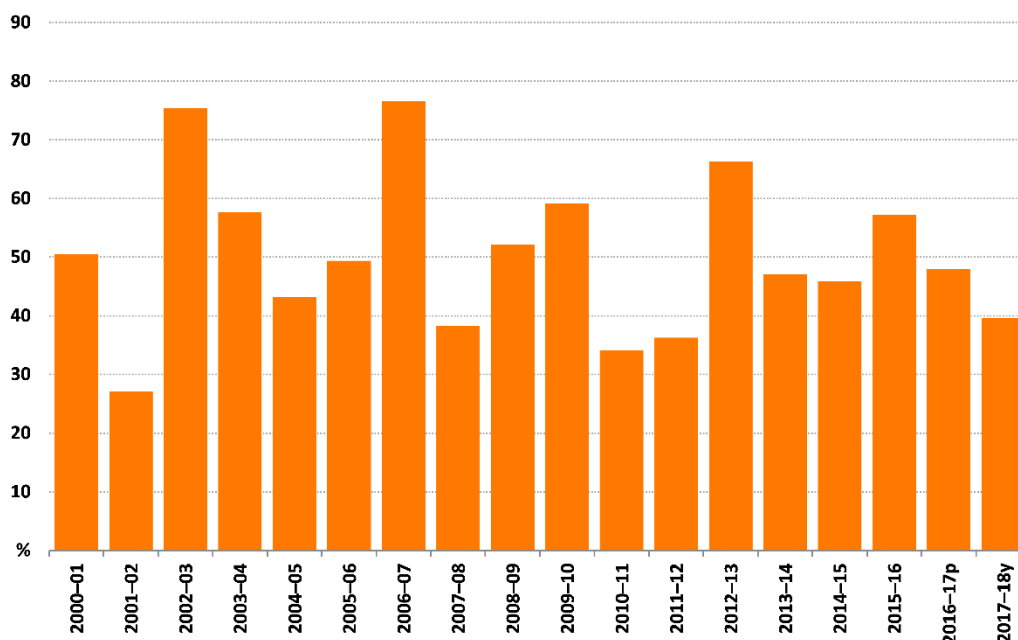
Farm business profit is a measure of long-term profitability. It accounts for capital depreciation, payments for family labour and changes in inventories of livestock, fodder and grain held on farm.

At the national level, farm business profit increased slightly from an average of –\$10,170 per farm in 2015–16 to –\$8,300 per farm in 2016–17. In 2017–18 farm business profit is projected to increase significantly to \$41,000 per farm.

Over the 10 years to 2016–17 the proportion of dairy farms recording negative farm business profit averaged 48 per cent a year. In 2017–18 the proportion of farms with negative farm business profit is projected to be around 40 per cent (Figure 2).

Negative farm business profit means a farm has not covered the costs of unpaid family labour or set aside funds to replace depreciating farm assets. Many farms occasionally record negative farm business profits when their income fluctuates. However, ongoing low or negative profit affects long-term viability because farms have reduced capacity to invest in newer and more efficient technologies.

Figure 2 Proportion of dairy farms with negative farm business profit, Australia, 2000–01 to 2017–18



^p Preliminary estimate. ^y Provisional estimate.

Source: ABARES Australian Dairy Industry Survey

Total cash receipts

At the national level, total cash receipts for dairy farms fell by around 7 per cent in 2016–17, on average, as a result of lower milk production and prices. The fall in prices received varied across the different dairy production regions. Milk yields per cow were lower in all regions except the Subtropical and New South Wales regions.

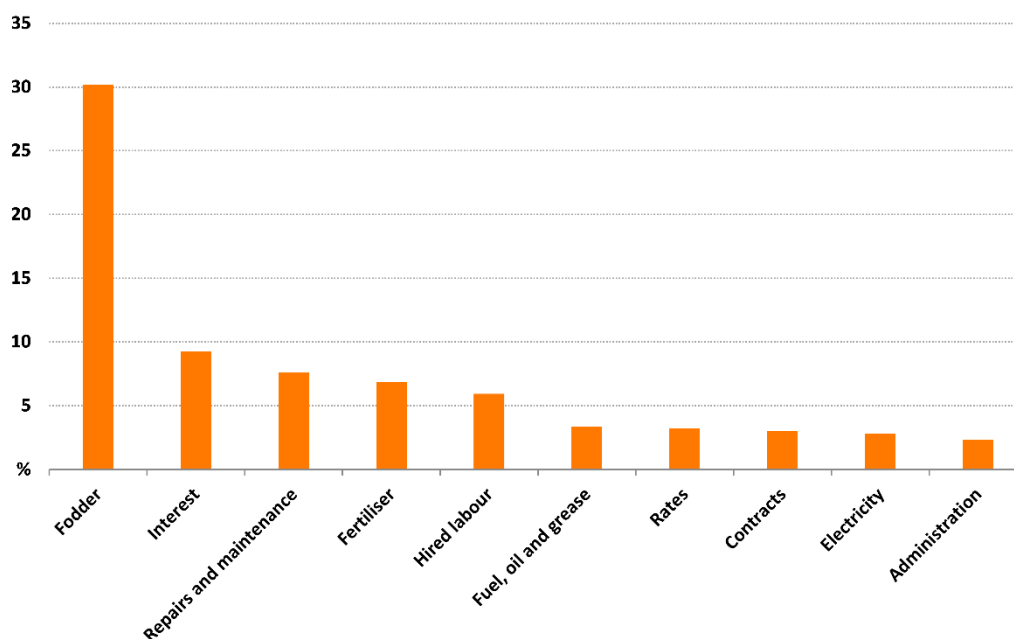
At the national level, average total cash receipts are projected to increase by around 11 per cent in 2017–18 to around \$787,000 per farm (Table 1), largely as a result of increased milk prices in most regions.

Total cash costs

Between 2000–01 and 2017–18 expenditure on fodder, interest, repairs and maintenance, fertiliser and hired labour accounted for the largest shares of total cash costs. Expenditure on fodder accounted for around 30 per cent of total cash costs over the period (Figure 3).

In 2016–17 average total cash costs for Australian dairy farms decreased by around 3 per cent to \$621,900 per farm (Table 1). This decrease was mainly a result of decreased expenditure on fodder and repairs and maintenance. Average total cash costs are projected to increase by around 5 per cent in 2017–18, mainly as a result of increased expenditure on fodder and electricity.

Figure 3 Components of total cash costs, dairy farms, Australia, 2000–01 to 2017–18



Source: ABARES Australian Dairy Industry Survey

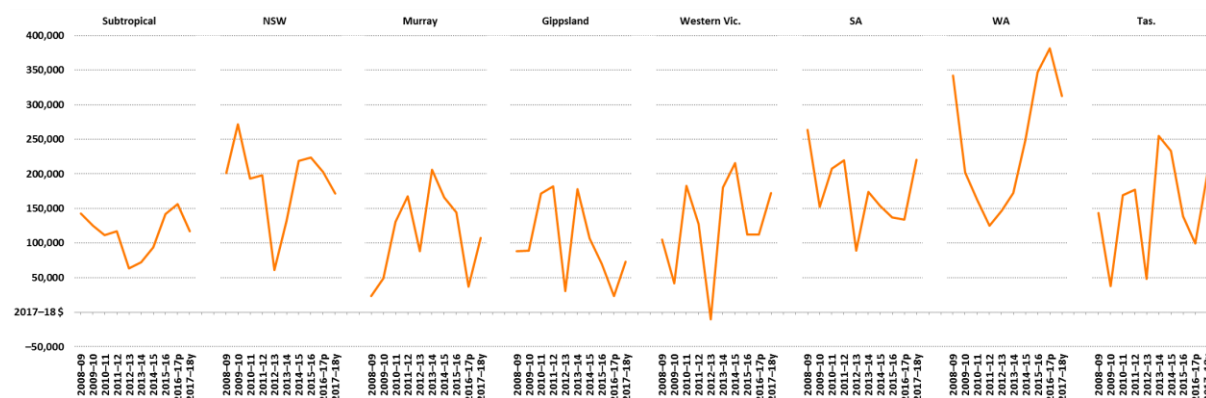
Performance, by region

In 2016–17 farm cash income in most regions was low. Large percentage increases in farm cash income are projected for the Murray, Gippsland, Western Victoria and South Australia regions in 2017–18 (Figure 4). These increases are the result of increased average milk production and higher average prices for milk.

Average farm cash income is projected to decline in 2017–18 in the Subtropical, New South Wales and Western Australia regions as a result of reduced receipts and increased costs.

Figure 4 Farm cash income, dairy farms, by region, 2008–09 to 2017–18

average per farm



p Preliminary estimate. y Provisional estimate.

Source: ABARES Australian Dairy Industry Survey

Total cash receipts

Total cash receipts increased in 2016–17 in the Subtropical and Gippsland regions. However, increased costs in the Gippsland region resulted in a reduction in average income.

Total cash receipts are projected to increase in the Murray, Gippsland, Western Victoria, South Australia and Tasmania regions in 2017–18 as a result of increased milk prices per litre and increased average production per farm.

Total cash costs

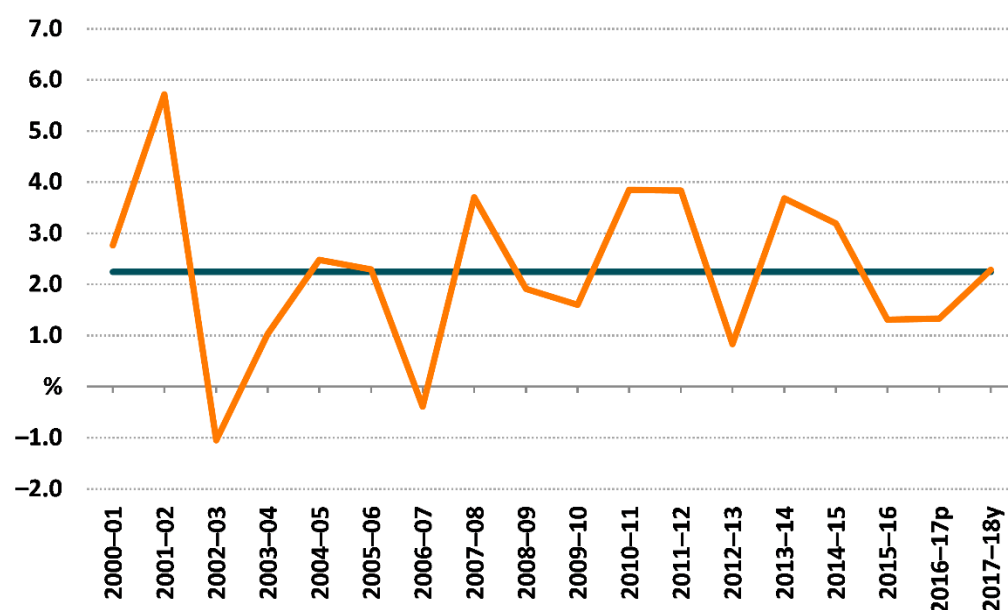
In 2016–17 total cash costs fell in all regions except the Subtropical and Gippsland regions. On average, total cash costs are projected to increase in all regions in 2017–18. This is mainly as a result of increased expenditure on fodder following a return to drier seasonal conditions.

Rate of return

Between 2015–16 and 2016–17 the average rate of return (excluding capital appreciation) of Australian dairy farms remained unchanged at around 1.3 per cent (Figure 5). The average rate of return is projected to increase to around 2.3 per cent in 2017–18, reflecting increased average farm income. The projected increase in rate of return is slightly above the long-term average of 2.2 per cent recorded between 2000–01 and 2016–17.

Figure 5 Rate of return, dairy farms, Australia, 2000–01 to 2017–18

average per farm



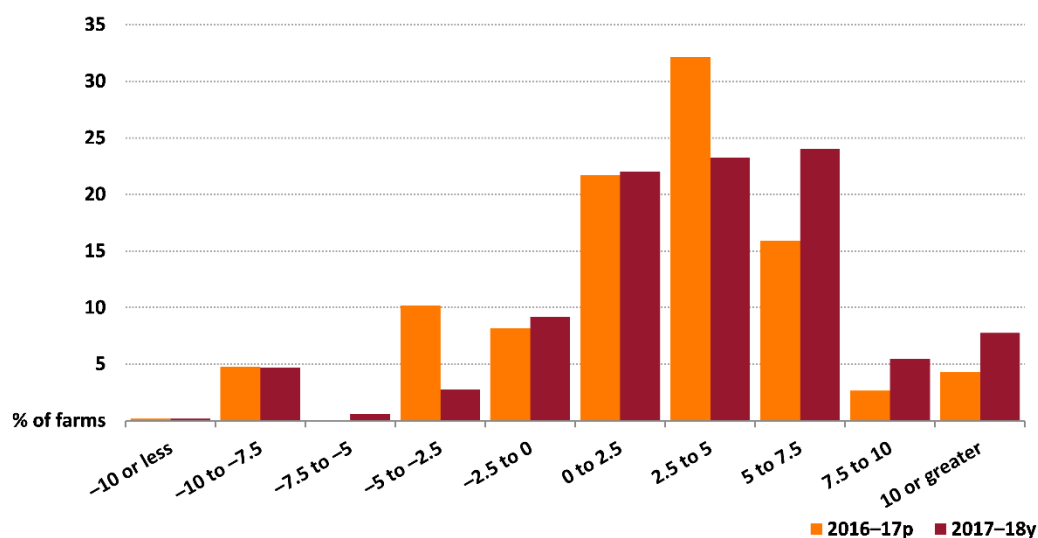
^p Preliminary estimate. ^y Provisional estimate.

Source: ABARES Australian Dairy Industry Survey

The performance of dairy farms varied widely in 2016–17 and 2017–18 (Figure 6). In 2016–17 around 23 per cent of dairy farms recorded negative rates of return (excluding capital appreciation) and 54 per cent recorded rates of return between 0 and 5 per cent. The remaining 23 per cent of dairy farms recorded rates of return above 5 per cent.

In 2017–18, 17 per cent of dairy farms are projected to have negative rates of return. An estimated 45 per cent of dairy farms are projected to have rates of return between 0 and 5 per cent and the remaining 37 per cent are projected to have rates of return above 5 per cent.

Figure 6 Distribution of dairy farms, by rate of return, 2016–17 and 2017–18



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

Source: ABARES Australian Dairy Industry Survey

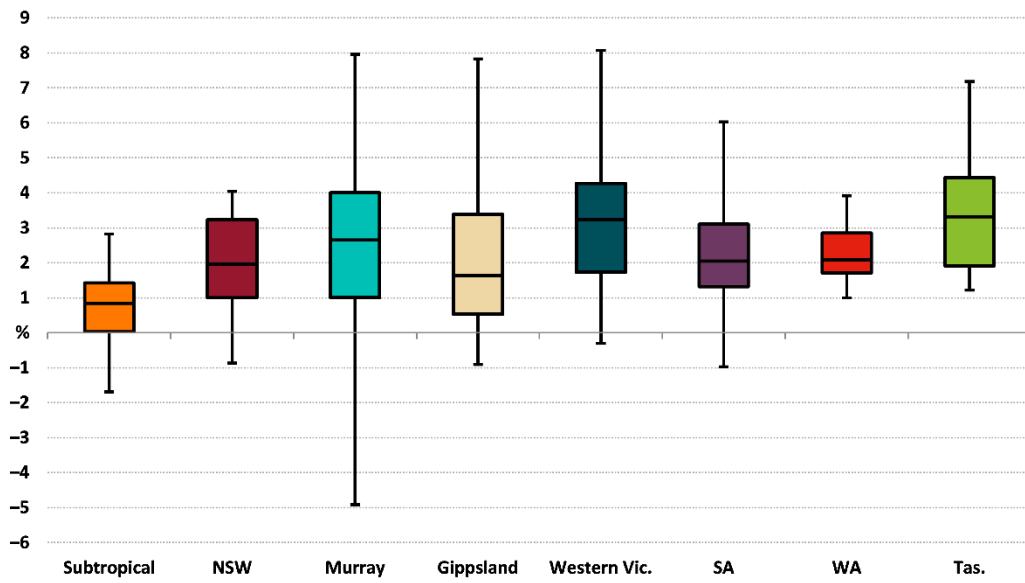
Variation in rate of return

The long-term performance of farm businesses is determined by the level and variability of profits. Variations in the rate of return reflect changes over time in average seasonal conditions, commodity prices and the cost of farm inputs recorded in each region. Individual farms are likely to have experienced different variations in the rate of return over the period. These are a result of seasonal conditions and commodity prices, and farm-specific factors such as enterprise mix and the skills of the manager.

Between 2000–01 and 2017–18 the annual average rate of return (excluding capital appreciation) for Australian dairy farms was positive in all years except 2002–03 and 2006–07. However, average rates of return by region vary.

Dairy farmers in the Western Australia region recorded the lowest variations in the rate of return over the period (Figure 7). Dairy farmers in the Murray region had the greatest overall variation in the rate of return.

Figure 7 Rate of return variability, by region, 1989–90 to 2016–17



Note: Boxes represent 50 per cent of years. Vertical lines represent the rates of return in the 25 per cent best and worst years. Horizontal lines in each box is the median.

Source: ABARES Australian Dairy Industry Survey

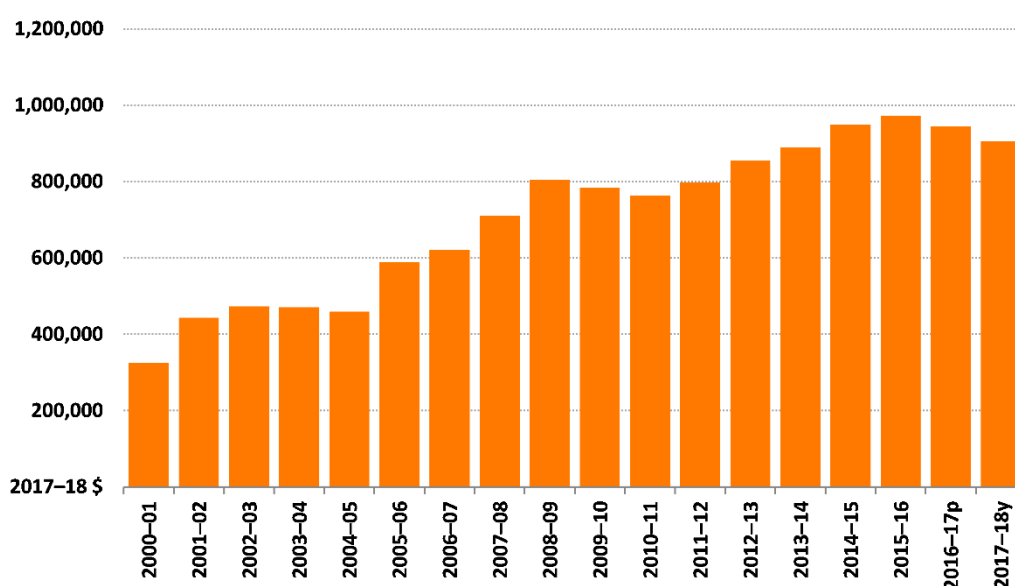
2 Farm debt and equity

Trends in average debt per farm

Debt is an important source of funds for farm investment and ongoing working capital for many dairy farms. At the national level, from 2000–01 to 2015–16 average debt of dairy farms trended upwards in real terms, mainly resulting from an increase in average farm size (Figure 8). Average debt of dairy farms decreased by around 3 per cent in 2016–17 and is projected to decrease an additional 4 per cent in 2017–18 to average around \$905,000 per farm.

Figure 8 Total farm debt at 30 June, dairy farms, Australia, 2000–01 to 2017–18

average per farm



^p Preliminary estimate. ^y Provisional estimate.

Source: ABARES Australian Dairy Industry Survey

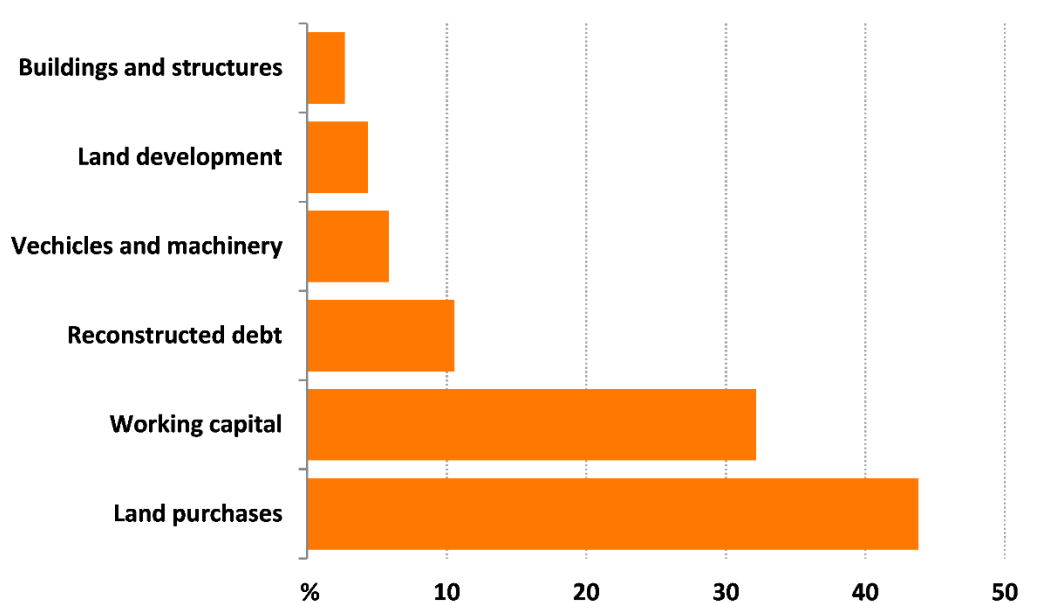
In ABARES farm surveys, debt is recorded by its main purpose. However, because some loans cover a range of purposes, estimates of debt by main purpose provide a guide only.

Over the 3 years to 2016–17 land purchases accounted for the largest proportion of dairy farm debt, around 44 per cent on average (Figure 9). Ongoing working capital accounted for 32 per cent of average total debt.

Reconstructed debt increased by around 60 per cent in 2016–17, whereas debt for land purchases decreased by around 12 per cent and working capital debt decreased by 9 per cent.

Figure 9 Main purpose of farm debt, dairy farms, Australia, 2014–15 to 2016–17

average proportion per farm



Source: ABARES Australian Dairy Industry Survey

Equity ratio

Since the mid-2000s average debt per dairy farm has increased at a faster rate than farm equity because debt levels have increased with increased average herd size and milk production (Martin, Shafron & Phillips 2017). The average equity ratio of dairy farms at the national level declined from 85 per cent in 2004–05 to an estimated 80 per cent in 2016–17. This was a consequence of declining land values and high levels of new investment on large dairy operations in some regions, mostly in Tasmania, Western Victoria and South Australia.

An estimated 27 per cent of dairy farms have an equity ratio greater than 90 per cent. On average these farms are relatively small. A further 52 per cent of farms have an equity ratio of 70 to 90 per cent. The remaining 22 per cent of dairy farms have an equity ratio less than 70 per cent. These are relatively large farms with higher than average milk production (Table 2).

Table 2 Farm Performance, by equity ratio, dairy farms, Australia, 2016–17

average per farm

Equity ratio	Unit	More than 90%	70 to 90%	Less than 70%
Proportion of farms	%	27	52	22
Total area operated	ha	304	290	355
Number of dairy cows mated	no.	194	252	259
Total milk production	l	1,184,900	1,374,500	1,552,200
Milk receipts	\$	512,700	578,500	629,700
Total cash receipts	\$	614,800	679,900	776,400
Milk receipts as a proportion of total receipts	%	83	85	81

Source: ABARES Australian Dairy Industry Survey

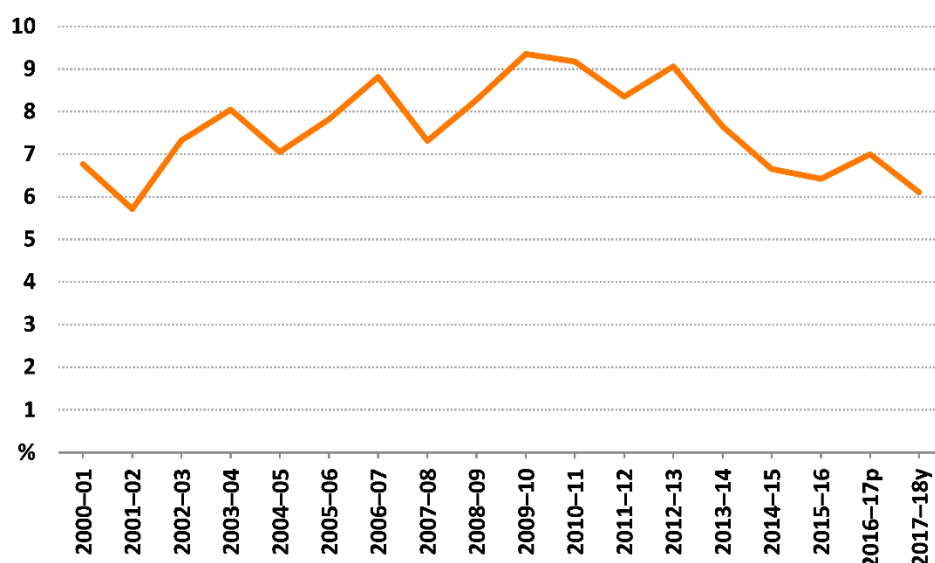
Debt-servicing capacity

The long-term viability of a farm is affected by its capacity to service debt. The servicing of debt consists of making interest payments and paying down the principal. The proportion of farm receipts spent on interest payments is a useful indicator of short-term capacity to service debt.

From 2000–01 to 2016–17 the proportion of farm receipts needed to fund interest payments fluctuated around an average of 8 per cent. The ratio of interest paid to total cash receipts for 2017–18 is projected to be around 6 per cent (Figure 10). Reduced interest rates, increased cash receipts and a reduction in total debt have all contributed to the decrease in the ratio of interest paid to total cash receipts.

Figure 10 Ratio of interest paid to total cash receipts, dairy farms, Australia, 2000–01 to 2017–18

average per farm

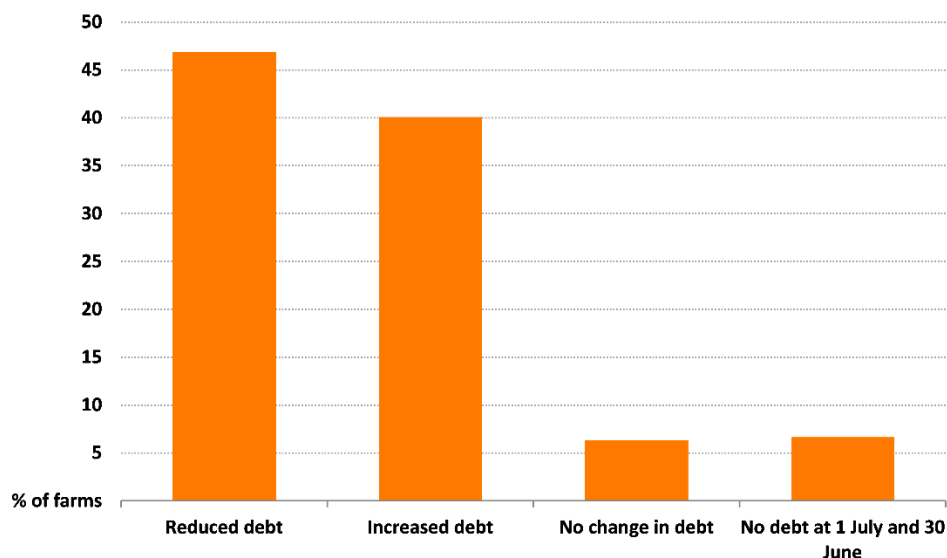


p Preliminary estimate. y Provisional estimate.

Source: ABARES Australian Dairy Industry Survey

At the national level, in 2016–17 around 47 per cent of dairy farms reduced their average total debt (Figure 11). An estimated 40 per cent of dairy farms increased their debt on average in 2016–17. A further 7 per cent of farms had no debt at 1 July 2016 and 30 June 2017. The remaining 6 per cent of farms had no change in debt.

Figure 11 Distribution of farms, by change in debt, dairy farms, Australia, 2016–17



Note: Change in debt from 1 July 2016 to 30 June 2017

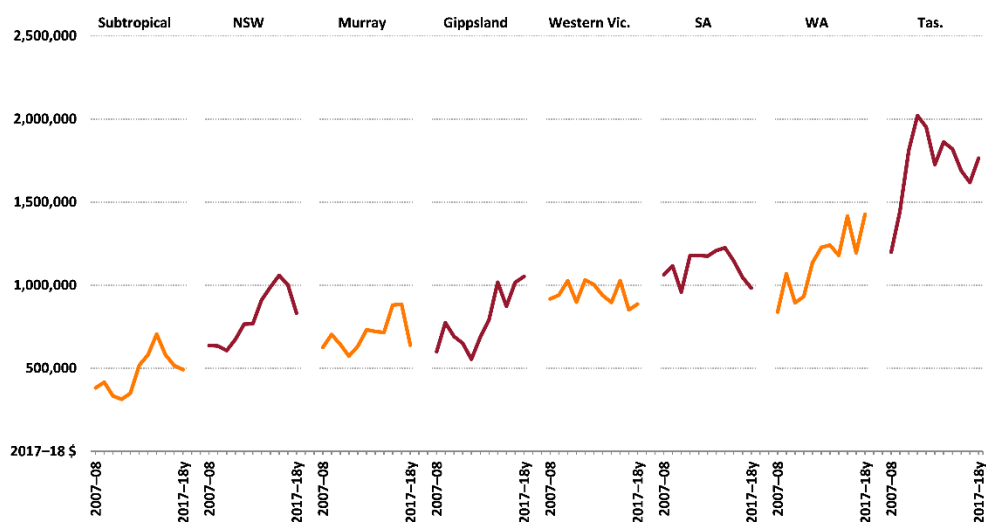
Source: ABARES Australian Dairy Industry Survey

Debt and equity, by region

Debt and equity on dairy farms varied significantly by region. Dairy farms in Tasmania recorded the highest farm business debt on average. This was a result of the relatively high proportion of large farms and recent expansion in dairy production in that region (Figure 12).

Figure 12 Total farm debt, dairy farms, by region, 2007–08 to 2017–18

average per farm



y Provisional estimate

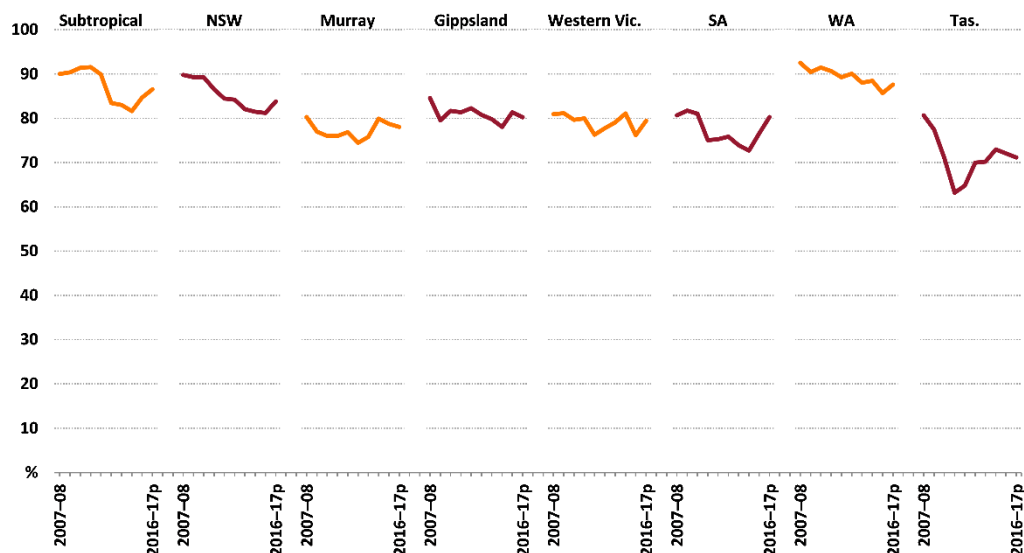
Source: ABARES Australian Dairy Industry Survey

From 2014–15 to 2016–17 land purchase debt accounted for the largest share of average debt of dairy farms in most regions, followed by ongoing working capital debt.

The lowest average equity ratios were recorded in Tasmania, reflecting rapid expansion in the industry since the mid-2000s. Since 2010–11 equity ratios in Tasmania have trended upwards (Figure 13).

Figure 13 Equity ratio, dairy farms, by region 2007–08 to 2016–17

average per farm



p Preliminary estimate.

Source: ABARES Australian Dairy Industry Survey

Distribution of farms, by debt and equity

Table 3 shows the distribution of dairy farms by debt and equity ratio at 30 June 2017. An estimated 7 per cent of all dairy farms in Australia held no debt. A further 6 per cent of farms held less than \$100,000 in debt. An estimated 32 per cent of dairy farms held debt in excess of \$1 million. An estimated 27 per cent of dairy farms had an equity ratio of more than 90 per cent in 2016–17 and 22 per cent had an equity ratio of less than 70 per cent.

Table 3 Distribution of farms, by farm business debt and equity ratio, dairy farms, Australia 30 June 2017

percentage

Equity ratio	No debt	Less than \$100,000	\$100,000 to less than \$250,000	\$250,000 to less than \$500,000	\$500,000 to less than \$1m	\$1m to less than \$2m	More than \$2m	Total
More than 90%	7	6	8	5	1	0	0	27
80 to less than 90%	0	0	0	5	16	2	1	24
70 to less than 80%	0	0	0	1	16	10	1	27
60 to less than 70%	0	0	0	0	4	7	5	16
Less than 60%	0	0	0	0	0	1	5	6
Total	7	6	8	10	37	20	12	100

Note: Row and column totals may not sum to 100 due to rounding.

Source: ABARES Australian Dairy Industry Survey

3 Farm capital and investment

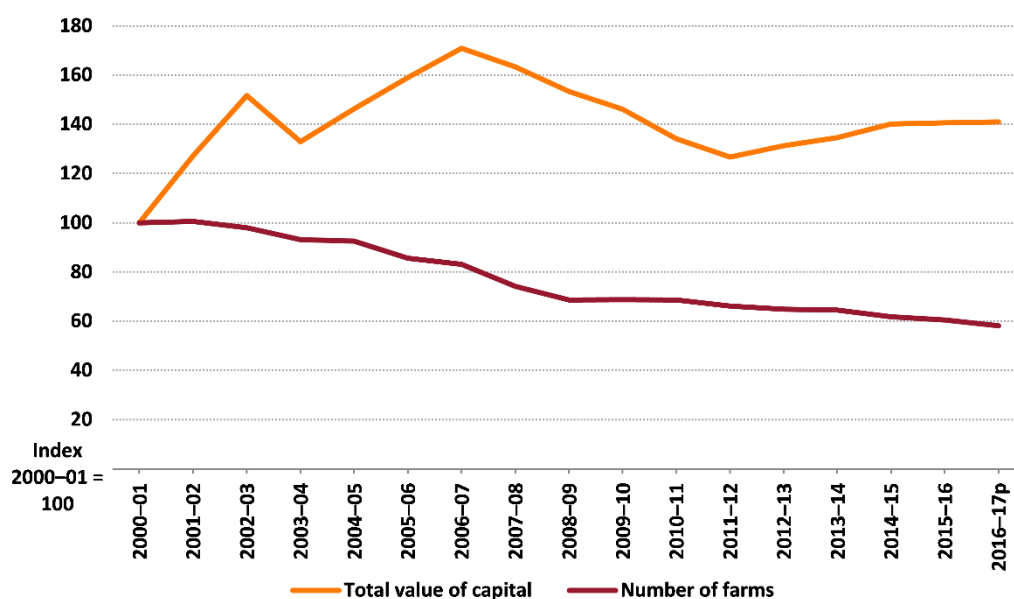
Total farm capital

From 2000–01 to 2016–17 the gross value of Australian dairy production decreased by 16 per cent in real terms to an estimated \$3.7 billion. Over the same period the number of dairy farms declined by 42 per cent and, consequently, the gross value of production per farm increased.

Investment in farm capital is important for the ongoing development of the Australian dairy industry. New and more efficient technologies are important for farm productivity, and investments in land, fixed improvements, and plant and equipment are key drivers of dairy farmers' capacity to generate farm outputs.

The total value of capital for Australian dairy farms increased by 41 per cent in real terms from 2000–01 to 2016–17, although the number of dairy farms declined (Figure 14). On a per farm basis, total capital increased by 142 per cent to around \$4.8 million per farm in 2016–17, largely because of increasing average farm sizes and appreciation in land values.

Figure 14 Total value of capital and number of farms, dairy farms, Australia, 2000–01 to 2016–17



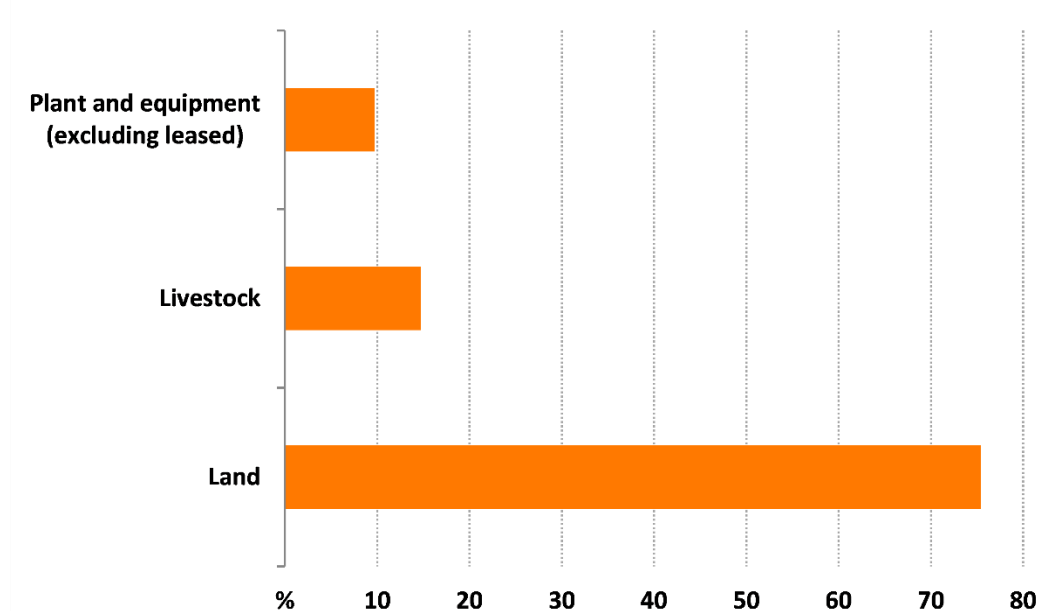
p Preliminary estimate.

Source: ABARES Australian Dairy Industry Survey

Land accounted for an average of 75 per cent of total capital per farm from 2012–13 to 2016–17 (Figure 15). Livestock accounted for a further 15 per cent of total capital, and plant and equipment accounted for about 10 per cent.

Figure 15 Components of capital, dairy farms, Australia, 2012–13 to 2016–17

average per farm



Source: ABARES Australian Dairy Industry Survey

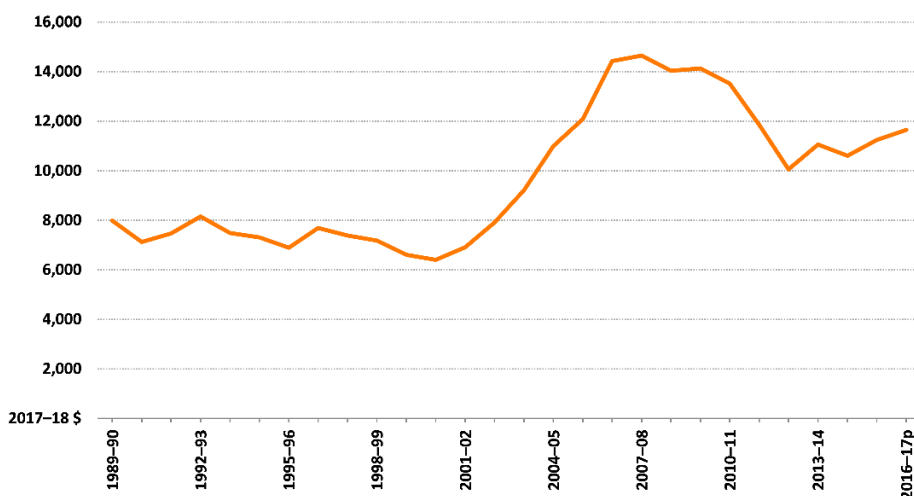
Return on land

ABARES uses two rates of return to farm capital—rate of return excluding capital appreciation and rate of return including capital appreciation. Rate of return is defined as farm profit expressed as a percentage of total capital. Because land is the largest component of total farm capital, it plays a key role in determining changes to total farm returns over the medium to longer term.

Figure 16 shows the average value of land and fixed improvements per hectare. In real terms, the average annual return from land appreciation from 2000–01 to 2016–17 was 4.3 per cent per year. From 1990–91 to 1999–2000 the average annual return from land appreciation was negative, at –1.6 per cent per year before stronger demand for farm land led to sharp increases in land values. From 2000–01 to 2006–07 the average annual return from land appreciation was 12.1 per cent per year before declining to an average of –1.8 per cent per year from 2007–08 to 2016–17.

Figure 16 Value of land and fixed improvements per hectare, dairy farms, Australia, 1989–90 to 2016–17

average per farm



p Preliminary estimate.

Source: ABARES Australian Dairy Industry Survey

New farm investment

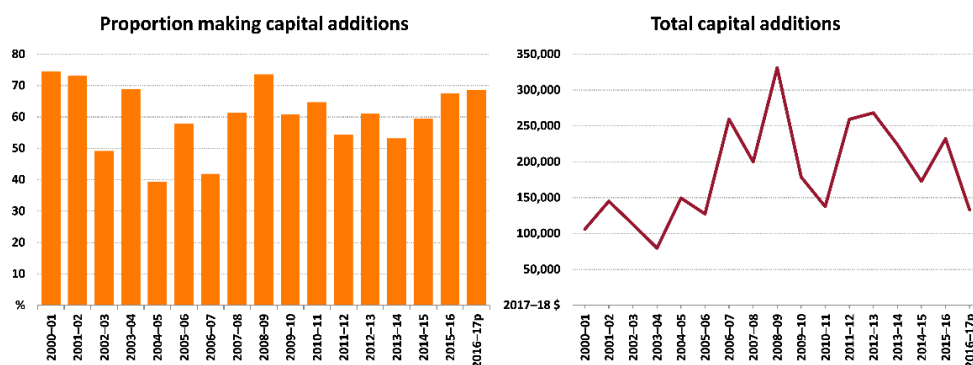
Most farmers make new investments each year to add to existing capital or to replace capital items that have reached the end of their useful life. Farm investments are usually made with longer-term outcomes in mind and based on expected returns over the life of the investment.

On average, 62 per cent of dairy farms each year made additions to their total capital over the 10 years to 2016–17 (Figure 17). The average amount invested each year by those making capital additions fluctuated around an average of \$214,000, broadly in line with movements in farm cash incomes.

In 2016–17 an estimated 69 per cent of dairy farms made capital additions at an average of \$133,000 per farm.

Figure 17 Total capital additions, dairy farms, Australia, 2000–01 to 2016–17

proportion of farms and average per farm



p Preliminary estimate.

Note: Total capital additions is the average of those farms making capital additions.

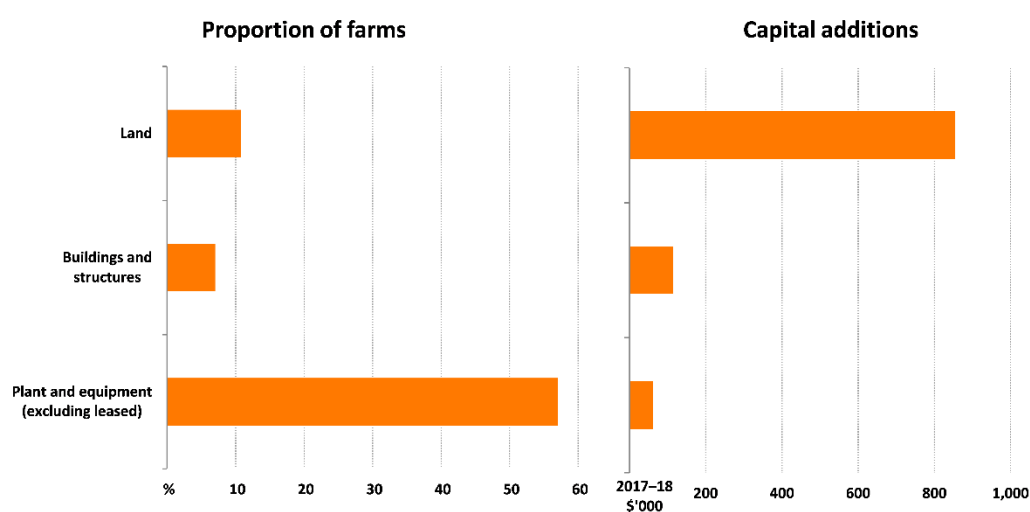
Source: ABARES Australian Dairy Industry Survey

Figure 18 shows the average proportion of dairy farmers that made capital additions each year from 2012–13 to 2016–17 and the average capital addition in three categories—land purchases, plant and equipment, and buildings and structures. Land is the biggest component of capital additions each year, although only 11 per cent of dairy farmers bought land each year on average between 2012–13 and 2016–17. Average expenditure on land for those making purchases was around \$855,000 per farm.

Around 57 per cent of all dairy farmers made additions to plant and equipment each year over the period, at an average of around \$62,000 per farm. Around 7 per cent of dairy farmers made additions to buildings and structures. Expenditure on these capital additions averaged around \$114,000 per farm.

Figure 18 Components of capital additions, dairy farms, Australia, 2012–13 to 2016–17

proportion of farms and average per farm in category



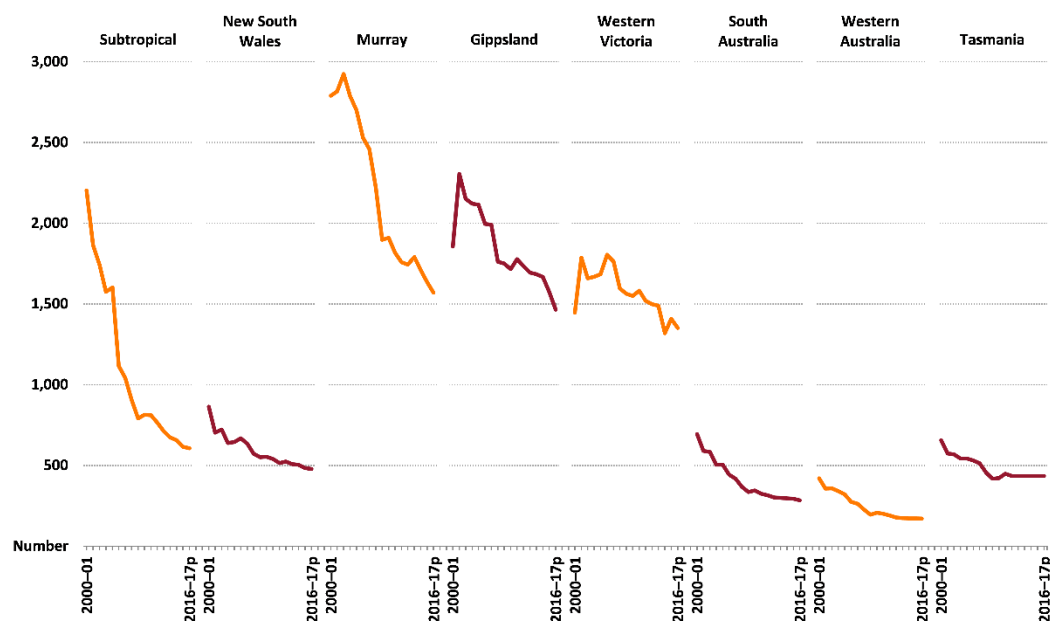
Source: ABARES Australian Dairy Industry Survey

Capital and investment by region

In most dairy regions, trends in farm capital and number of farms follow the national trends. The three Victorian regions have the most influence on national trends because those regions account for two-thirds of Australia's milk production.

The number of dairy farms fell in all regions, with the largest decreases being in the Subtropical and Murray regions (Figure 19). Despite the ongoing decrease in farm numbers in the Murray region, the total value of capital for dairy farms in the region has been increasing since 2010–11 (Figure 20). Similarly, the number of farms in the Gippsland region has trended downwards over time, while the total value of capital has increased since 2011–12. As a result of this increase, the Gippsland region accounted for 25 per cent of the total capital of dairy farms in 2016–17.

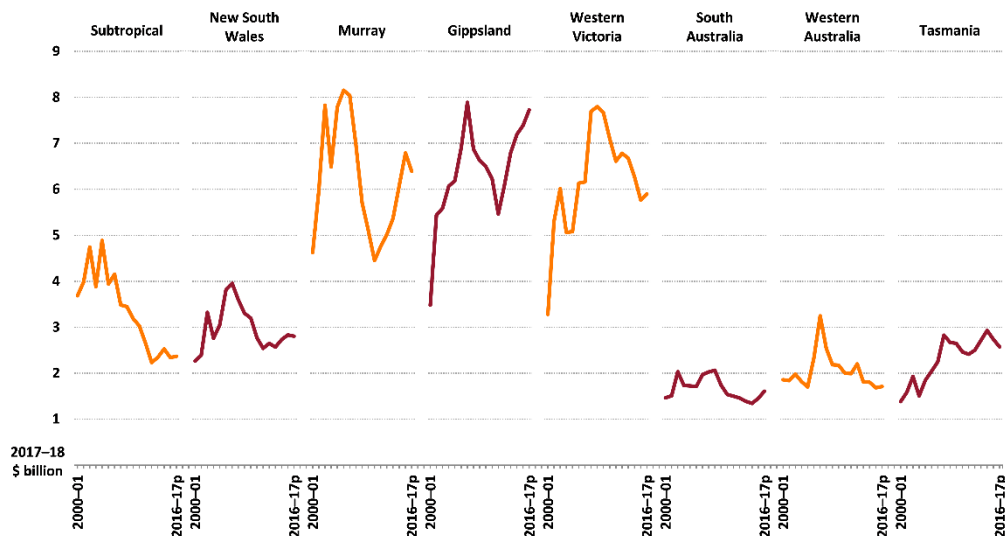
Figure 19 Number of dairy farms, by region, 2000–01 to 2016–17



p Preliminary estimate.

Source: ABARES Australian Dairy Industry Survey

Figure 20 Total value of capital, dairy farms, by region, 2000–01 to 2016–17



p Preliminary estimate.

Source: ABARES Australian Dairy Industry Survey

From 2000–01 to 2016–17 the number of dairy farms fell by 44 per cent in the Murray region and by 21 per cent in the Gippsland region. Despite these declines, the total value of capital increased in real terms by 38 per cent in the Murray region and 122 per cent in the Gippsland region. The Murray region accounted for 21 per cent of the total capital value of Australian dairy farms in 2016–17.

The number of dairy farms in the New South Wales region fell by 45 per cent but the total capital value of dairy farms in the region rose by 24 per cent in real terms, accounting for around 9 per cent of the total capital value of Australian dairy farms in 2016–17.

In Tasmania, the total value of capital increased by 86 per cent in real terms over the same period and the number of dairy farms declined by around 34 per cent. Tasmania accounted for 8 per cent of the total capital value of Australian dairy farms in 2016–17.

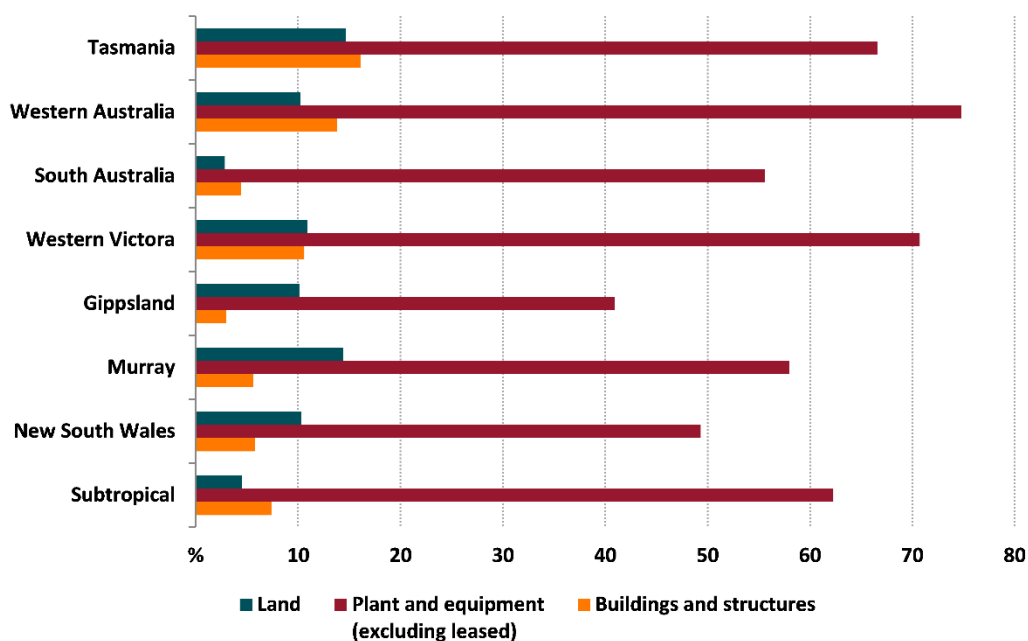
The total capital value of dairy farms in South Australia increased by 10 per cent in real terms between 2000–01 and 2016–17 and the number of dairy farms declined by 59 per cent. Average total capital increased by 167 per cent to \$5.7 million per farm. South Australian dairy farms accounted for 5 per cent of the total capital value of Australian dairy farms in 2016–17.

The total capital value of dairy farms in Western Australia declined by 8 per cent between 2000–01 and 2016–17 and the number of dairy farms decreased by 60 per cent. Average total capital increased by 128 per cent to \$10 million per farm. Western Australian dairy farms accounted for 6 per cent of the total capital value of Australian dairy farms in 2016–17.

From 2000–01 to 2016–17 the total capital value of dairy farms in the Subtropical region declined by around 36 per cent due to a substantial decline in the number of dairy farms (73 per cent). The region accounted for around 8 per cent of the total value of capital in 2016–17.

The proportion of dairy farms adding new investments over the five years to 2016–17 was largest in Western Australia, Western Victoria and Tasmania (Figure 21).

Figure 21 Proportion of farms making capital additions, dairy farms, by region, 2012–13 to 2016–17



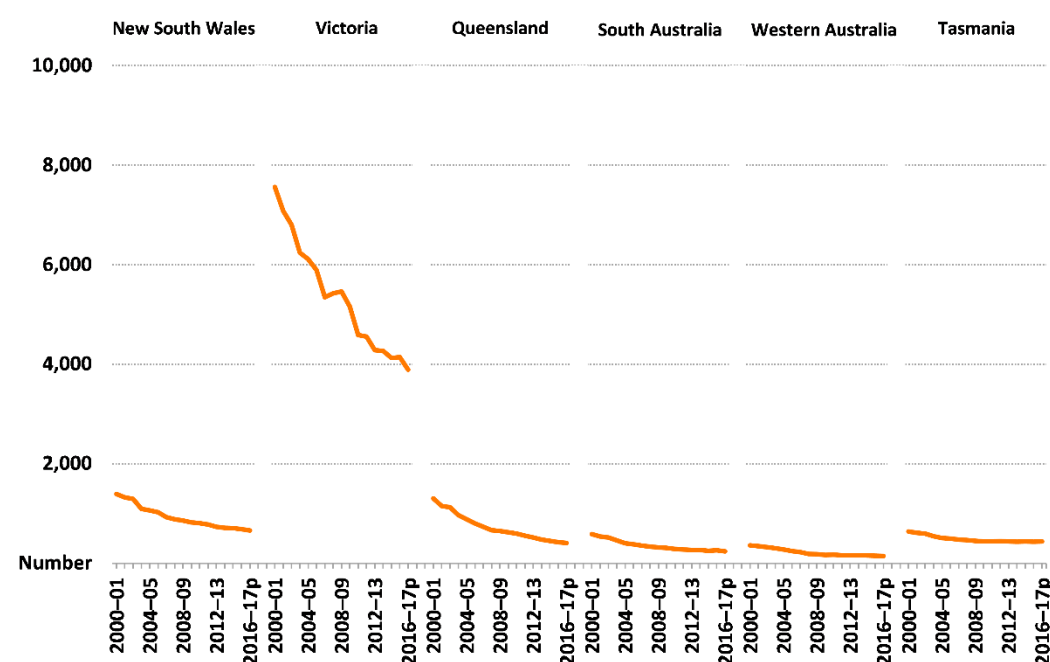
Source: ABARES Australian Dairy Industry Survey

4 Physical characteristics

In 2016–17 an estimated 5,800 dairy farms were registered in Australia (Dairy Australia 2018). Around 67 per cent of these farms were in Victoria, 11 per cent in New South Wales, 8 per cent in Tasmania, 7 per cent in Queensland, 4 per cent in South Australia and 3 per cent in Western Australia.

From 2000–01 to 2016–17 the total number of Australian dairy farms fell by around 51 per cent. Although most of this decline was in Victoria, the largest percentage decline was in Queensland (Figure 22).

Figure 22 Number of dairy farms, by state, 2000–01 to 2016–17



p Preliminary estimate.

Source: Dairy Australia

Over the past 30 years, the structure of the Australian dairy industry has changed markedly. Restructuring has been driven by a range of factors, including:

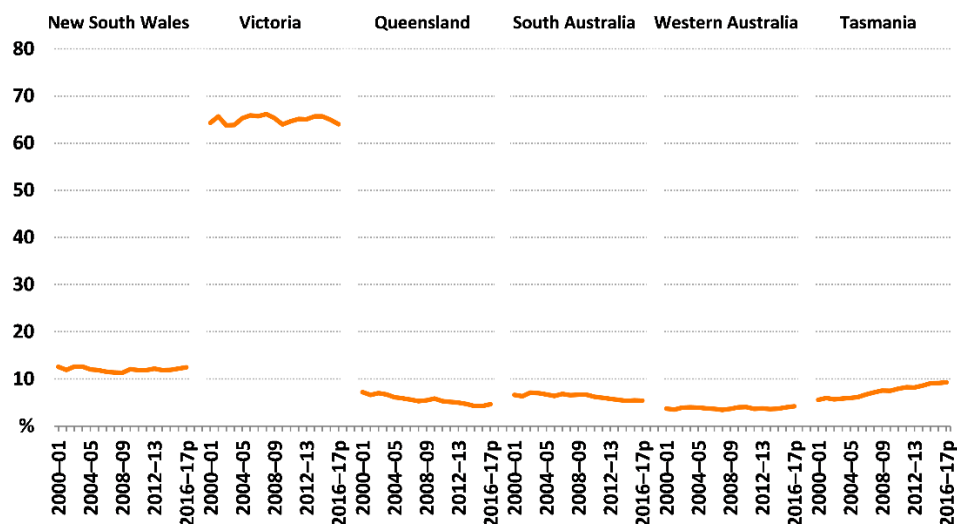
- changing world dairy product markets
- prolonged drought in the mid 2000s
- discontinuation of regulated sourcing and pricing of drinking milk in 2000
- cessation of the Domestic Market Support Scheme for manufacturing milk prices.

Despite fewer resources being used for milk production, restructuring has promoted a more efficient industry and enabled growth in the gross value of Australian dairy production per farm in real terms. Dairy farmers have adapted by increasing the size and intensity of their operations, with more cows per farm, higher stocking rates and greater use of supplementary feeding.

Trends in physical characteristics, by state

The concentration of Australian milk production among the states has shifted somewhat, with Victoria and Tasmania expanding and all other states contracting (Figure 23). Victoria is the largest milk producer, accounting for an estimated 64 per cent of total milk production in 2016–17, followed by New South Wales (12 per cent) and Tasmania (9 per cent).

Figure 23 Share of milk production, dairy farms, by state, 2000–01 to 2016–17

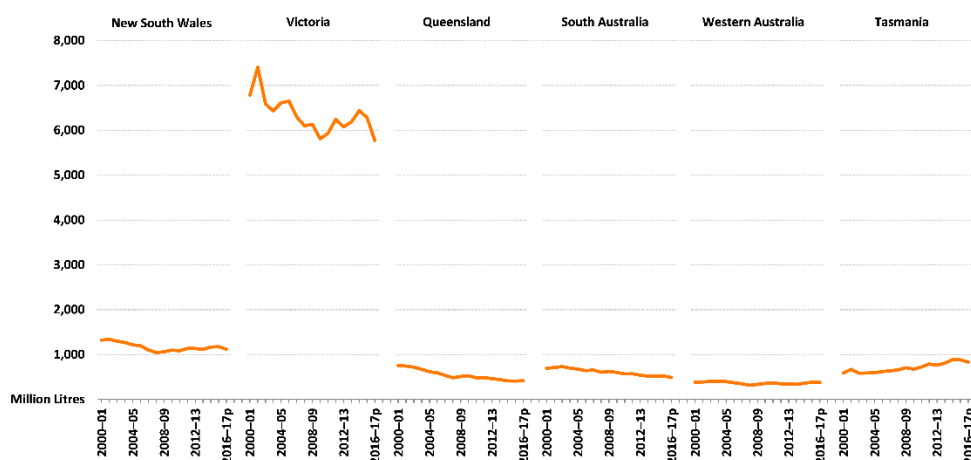


p Preliminary estimate.

Source: Dairy Australia

From 2000–01 to 2016–17 Tasmanian milk production increased by 42 per cent. This was the largest increase of any state (Figure 24). Total milk production in Western Australia remained steady, despite declining numbers of cows milked, as a result of greater average milk yield per cow. In the same period, total milk production in Victoria and New South Wales declined by 15 per cent, Queensland (by 45 per cent) and South Australia (by 30 per cent) mainly because of a decline in total number of cows milked.

Figure 24 Total milk production, dairy farms, by state, 2000–01 to 2016–17



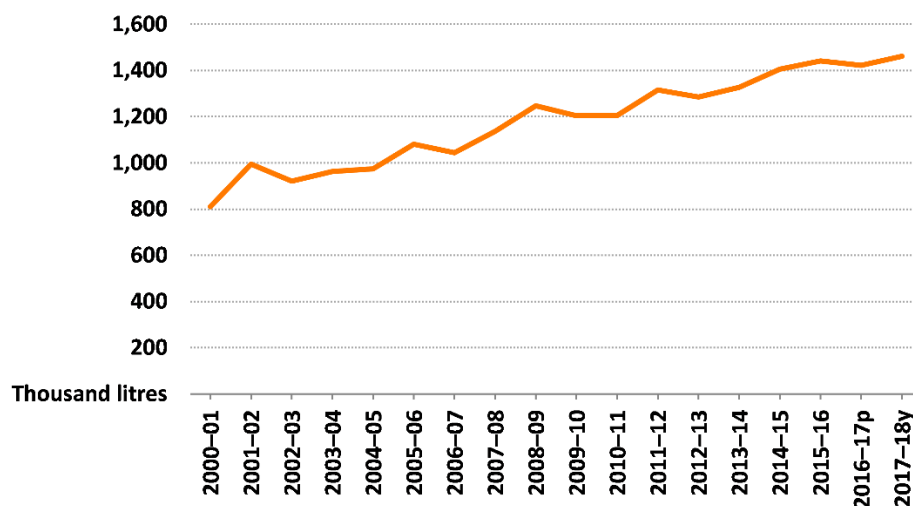
p Preliminary estimate.

Source: Dairy Australia

From 2000–01 to 2015–16 total milk production per farm trended upwards (Figure 25) as a result of an increased number of cows being milked and higher average milk yields. However, in 2016–17 milk production per farm fell by 1.3 per cent to 1.42 million litres per farm as a result of a decline in the milk yield per cow before rising by an estimated 3 per cent in 2017–18.

Figure 25 Milk production, dairy farms, Australia, 2000–01 to 2017–18

average per farm



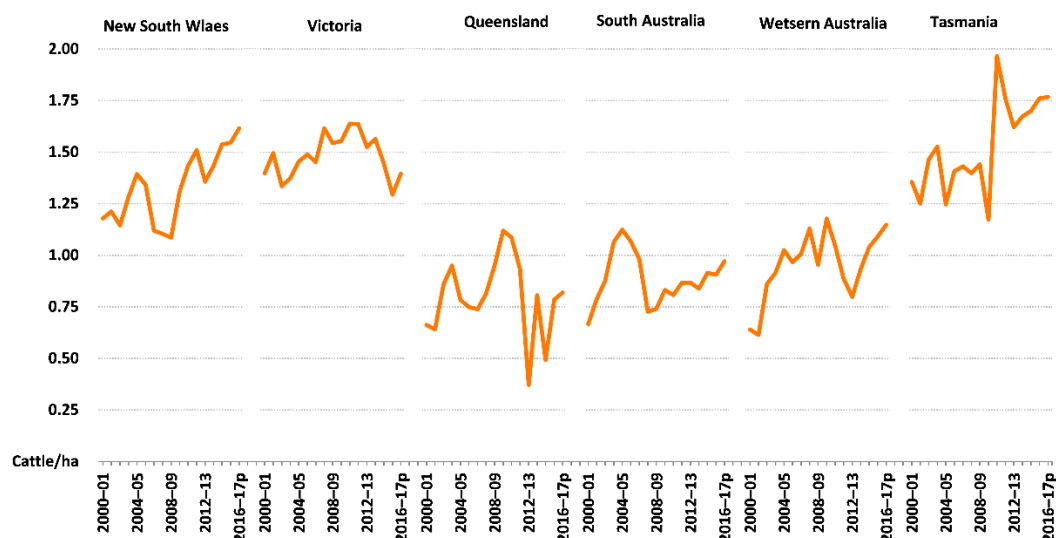
p Preliminary estimate.

Source: ABARES Australian Dairy Industry Survey

Stocking rates

At the national level, average stocking rates per hectare operated for dairy farms was 20 per cent higher in 2016–17 than in 2000–01. The average stocking rate increased for all states except Victoria, where the rate decreased by 7 per cent (Figure 26).

Figure 26 Dairy cattle per hectare operated, dairy farms, by state, 2000–01 to 2016–17



p Preliminary estimate.

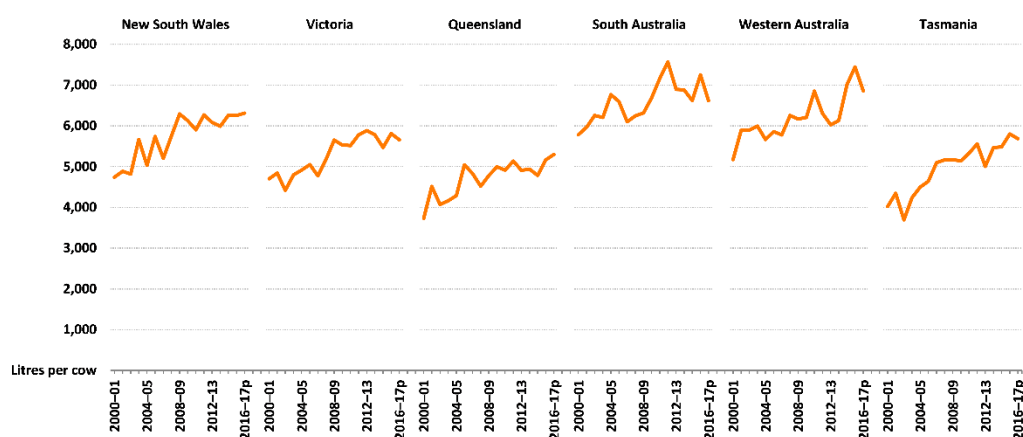
Source: ABARES Australian Dairy Industry Survey

Milk yields

Advances in breeding and genetics have allowed dairy farmers to select cows for a range of traits, such as higher milk yield, longevity and reduced health problems. These developments contributed to milk yields per cow increasing at an annual average rate of 1.2 per cent a year from 2000–01 to 2016–17 (Figure 27). However, research suggests the focus on breeding higher-yielding cows has affected cow fertility (Berry, Friggens, Lucy & Roche 2016). Fertility problems affect cow lactation and therefore farm productivity. In response, dairy farmers have adopted a variety of management practices to improve cow fertility, including artificial insemination, genetic selection, heat detection programs and transition diets.

Figure 27 Milk yield per cow, dairy farms, by state, 2000–01 to 2016–17

average per farm

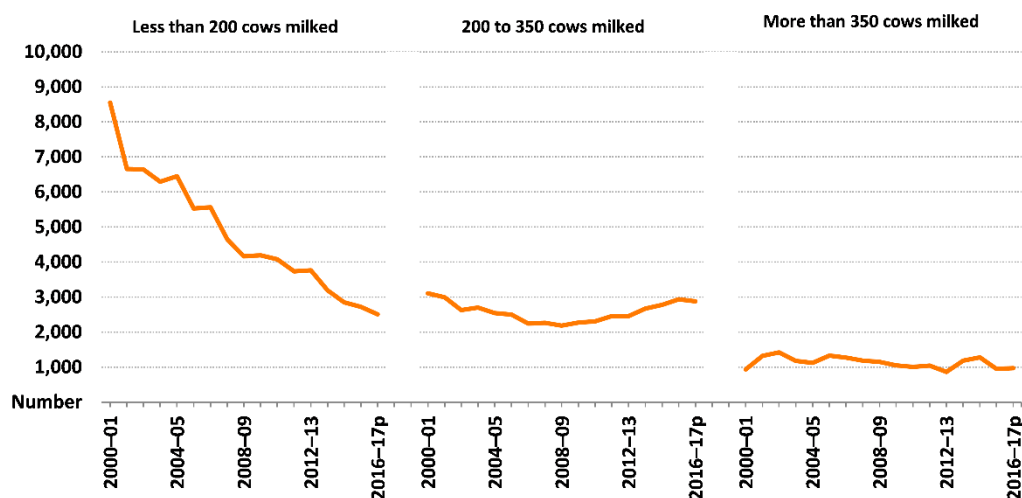


p Preliminary estimate.

Source: ABARES Australian Dairy Industry Survey

Physical characteristics by scale of milk production

From 2000–01 to 2016–17 the number of farms milking fewer than 200 cows a year declined by around 71 per cent, largely accounting for the decline in the total number of farms. The number of farms milking between 200 and 350 cows initially fell but increased towards the end of the period as a number of small farms increased the size of their milking herds. The number of farms milking more than 350 cows remained relatively steady (Figure 28). Reflecting these changes, the average area operated by dairy farms increased by around 34 per cent from 2000–01 to 2016–17, reaching an estimated 313 hectares in 2016–17.

Figure 28 Number of Australian dairy farms, by herd size, 2000–01 to 2016–17


p Preliminary estimate.

Source: ABARES Australian Dairy Industry Survey

In 2016–17 milk production per farm decreased in all states except Queensland (Table 4). Milk production increased in Queensland as a result of increases in both the number of cows milked and milk yield per cow. In New South Wales increases in average milk yield per cow were partly offset by a decline in the number of cows milked. In South Australia and Western Australia increases in the number of cows milked were more than offset by a decline in average milk yield per cow. Milk production declined in Tasmania as a result of a decline in both the number of cows milked and milk yield per cow.

Table 4 Changes in milk production, dairy farms, by state, 2015–16 to 2016–17

average per farm

Region	Cows milked (%)	Milk yield per cow (%)	Milk production (%)
New South Wales	–4	1	–3
Victoria	2	–3	–1
Queensland	3	3	6
South Australia	7	–9	–3
Western Australia	8	–8	–1
Tasmania	–3	–2	–5
Australia	1	–2	–1

Source: ABARES Australian Dairy Industry Survey

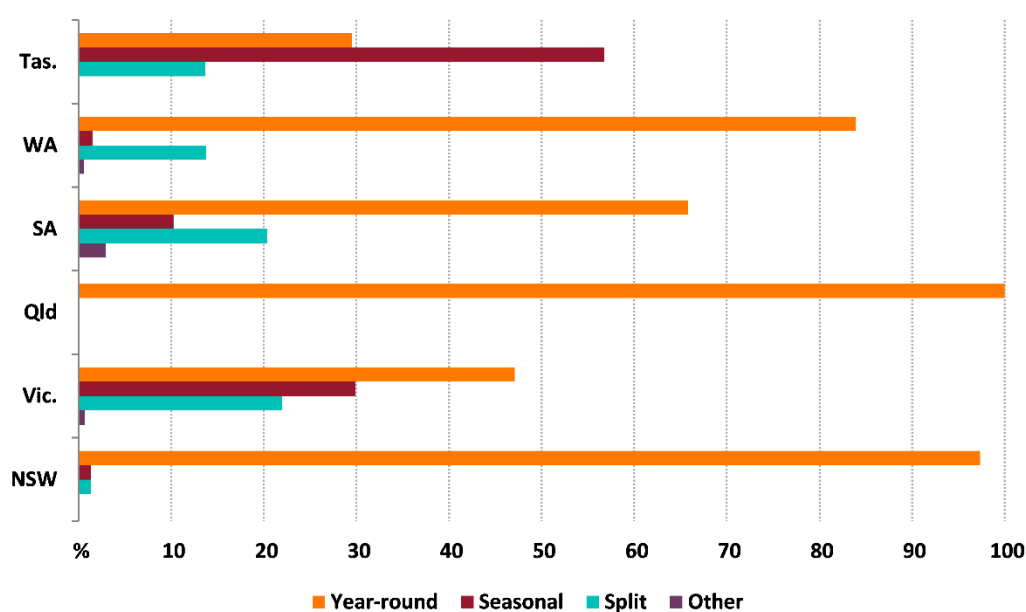
Seasonality of milk production

Dairy farmers plan their breeding programs in response to pasture growth and milk processor price incentives. The choice of calving pattern determines the seasonality of milk supply and demand for fodder. Common calving patterns are seasonal, year round and split.

On average, over the 5 years to 2017–18, 57 per cent of dairy farms used year-round calving, 25 per cent used seasonal calving and 17 per cent used split calving. Dairy farms using a split calving pattern produced larger milk volumes on average over the 5 years to 2016–17. Split calving results in more cows being milked and greater milk yield per cow than seasonal and year-round calving.

Use of these calving patterns varies across the states (Figure 29). Dairy farms in Queensland, New South Wales and Western Australia primarily use year-round calving to maintain a year-round supply of fresh milk to the domestic market. Dairy farms in other states use a mix of seasonal, year-round or split calving patterns. Dairy farms in Tasmania and Victoria mainly use a seasonal calving pattern.

Figure 29 Calving system, dairy farms, by state, 2012–13 to 2016–17



Source: ABARES Australian Dairy Industry Survey

5 References

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