Australian Government



Department of Agriculture and Water Resources ABARES

Australian grains

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

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

Australian Grains July 2018



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Cataloguing data

This publication (and any material sourced from it) should be attributed as: Frilay, J, Weragoda, A and Ashton, D 2018, Australian grains: financial performance of grain farms, 2015–16 to 2017–18, ABARES research report, Canberra, [July]. CC BY 4.0.

ISBN 978-1-74323-384-9

This publication is available at <u>agriculture.gov.au/publications</u>

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Acknowledgements

ABARES relies on the voluntary cooperation of farmers participating in the annual Australian Agricultural and Grazing Industries Survey to provide data used in the preparation of this report. Without their help, the survey would not be possible. ABARES farm survey staff collected most of the information presented in this report through on-farm interviews with farmers. The Australian Agricultural and Grazing Industries Survey is funded by the Department of Agriculture and Water Resources, Meat & Livestock Australia and the Grains Research and Development Corporation.

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Industry overview

The grains industry makes an important contribution to the Australian economy. In 2015–16 production of grains, oilseeds and pulse crops accounted for around 23 per cent (\$13 billion) of the total gross value of farm production (GVP) and around 24 per cent of the total value of farm export income.

Around 30 per cent of all Australian farms produced grains, oilseeds and pulses in 2015–16 (ABS 2016). Wheat is the most important individual crop by tonnage and value. In 2015–16 the GVP for wheat was \$6.2 billion, almost half of total GVP for the grains industry. Total production of wheat in 2015–16 was around 22.3 million tonnes or 56 per cent of total grains industry tonnage.

The results below are for farms included in the Australian Agricultural and Grazing Industries (AAGIS) survey that grew at least 40 hectares of grain, oilseed or pulse crops.

The AAGIS is funded by the Department of Agriculture and Water Resources, Meat & Livestock Australia and the Grains Research and Development Corporation (GRDC). GRDC commissioned and funded the analysis of grains industry farm performance. Data are provided at national and regional scales, with regions based on those used by GRDC—the Northern, Southern and Western regions (Map 1).

Map 1 GRDC grain regions



Source: ABARES

Key drivers of farm income



p Preliminary estimate.

1 Farm financial performance

Farm cash income and profit

Average farm cash income of Australian grain farms increased by around 24 per cent to \$282,400 in 2016–17 as a result of near-record production in some grain-growing regions (Table 1). In 2017–18 farm cash income is projected to fall by around 2 per cent to \$276,000 per farm, the second-highest average farm cash income in over 25 years, in real terms (Figure 1).

Performance measure	Unit	2015-16	2016-17p	2017-18y
Australia				
Total cash receipts	\$	758,730	837,600	785,000
Total cash costs	\$	530,990	555,200	510,000
Farm cash income	\$	227,730	282,400	276,000
Farm business profit	\$	105,620	187,800	144,000
Rate of return a	%	3.2	4.5	3.4
Specialist farms				
Total cash receipts	\$	980,330	1,195,900	1,088,000
Total cash costs	\$	688,620	795,300	732,000
Farm cash income	\$	291,710	400,500	357,000
Farm business profit	\$	158,170	288,400	182,000
Rate of return a	%	3.9	5.7	3.8
Non-specialist farms				
Total cash receipts	\$	488,390	494,800	492,000
Total cash costs	\$	338,690	325,500	295,000
Farm cash income	\$	149,690	169,400	197,000
Farm business profit	\$	41,510	91,500	107,000
Rate of return a	%	1.8	2.8	2.8

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

average per farm

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

Note: Specialist farms are grain farms that obtained more than 50 per cent of total cash receipts from crop receipts. Nonspecialist farms are grain farms that obtained less than 50 per cent of total cash receipts from crop receipts. Source: ABARES Australian Agricultural and Grazing Industries Survey



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

p Preliminary estimate. y Provisional estimate.Source: ABARES Australian Agricultural and Grazing Industries 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.

In 2016–17 increased grain production led to an increase in on-farm grain stocks in most states, leading to an increase in the value of trading stock on hand at 30 June. As a result, farm business profit increased by around 78 per cent to \$187,800 per farm (Table 1). In 2017–18 average farm business profit is projected to fall by around 23 per cent to \$144,000 per farm, leading many farms to run down their stocks of grain from the previous year.

At the national level, strong financial performance in 2016–17 resulted in a fall to around 32 per cent in the proportion of farms recording negative farm business profit, the lowest since 1989–90 (Figure 2). In the 10 years to 2016–17 the proportion of grain farms recording negative farm business profit averaged 51 per cent a year. In 2017–18 a projected 37 per cent of grain farms will record negative farm business profit.

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 profit 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.



percentage of farms



p Preliminary estimate.y Provisional estimate.Source: ABARES Australian Agricultural and Grazing Industries Survey

Total cash receipts

Crop prices remained relatively low in 2016–17, but total cash receipts for grain farms increased by 10 per cent to \$837,600 per farm (Table 1). This was a result of high crop production. Higher prices for beef, sheep, lambs and wool also contributed to increased average total cash receipts.

In 2017–18 average total cash receipts are projected to decline by around 6 per cent to an estimated \$785,000 per farm. This is a result of reduced crop yields and a decrease in prices for beef, partly offset by continuing high prices for sheep, lambs and wool. Total crop receipts are projected to fall by around 21 per cent in the Northern region and by 10 per cent in the Western region but remain steady in the Southern region.

Total cash costs

Average total cash costs of Australian grain farms increased by around 5 per cent in 2016–17 (Table 1). Increased expenditure on seed, hired labour, freight, lease payments and contracts were offset by reduced expenditure on fertiliser, fodder, interest and electricity.

In 2017–18 average total cash costs are projected to decrease by 8 per cent, following reduced expenditure on fertiliser, seed, crop and pasture chemicals, repairs and maintenance and contracts.

Performance of specialist and non-specialist grain farms

In 2016–17 farm cash income increased for non-specialist grain farms and specialist grain farms. Non-specialist grain farms are defined as grain farms obtaining less than 50 per cent of their total cash receipts from crop sales. Specialist grain farms are defined as grain farms obtaining more than 50 per cent of their total cash receipts from crop sales.

Average farm cash income for non-specialist grain farms increased by around 13 per cent in 2016–17 (Figure 3). This was a result of increased receipts for both crops and livestock. Average farm cash income for specialist grain farms increased by around 37 per cent in 2016–17 after improved crop production resulted in increased crop receipts.



Figure 3 Farm cash income, grain farms, by group, 1989–90 to 2017–18

average per farm

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

Note: Specialist grain farms are grain farms that obtained more than 50 per cent of total cash receipts from crop receipts. Non-specialist grain farms are grain farms that obtained less than 50 per cent of their total cash receipts from crop receipts.

Source: ABARES Australian Agricultural and Grazing Industries Survey

Performance, by region

Average farm cash income rose in all three regions in 2016–17 because of higher receipts from increased crop production and livestock sales (Table 2). In 2017–18 farm cash income is projected to decrease in the Northern and Western regions and increase in the Southern region. Despite lower crop production in the Southern region, receipts will increase because of sales of grain held in on-farm storages from the previous year.

Performance measure	Unit	2015-16	2016-17p	2017-18y
Northern region				
Farm cash income	\$	241,320	255,100	228,000
Farm business profit	\$	147,710	167,100	99,000
Rate of return a	%	4.0	4.1	2.5
Southern region				
Farm cash income	\$	160,740	234,800	273,000
Farm business profit	\$	12,920	169,000	154,000
Rate of return a	%	1.3	4.3	3.7
Western region				
Farm cash income	\$	345,500	445,000	400,000
Farm business profit	\$	203,490	275,600	233,000
Rate of return a	%	4.5	5.7	4.9

Table 2 Farm financial performance, grain farms, by region, 2015–16 to 2017–18

average per farm

p Preliminary estimate. **y** Provisional estimate. **a** Excluding capital appreciation. Source: ABARES Australian Agricultural and Grazing Industries Survey

In almost all years between 2000–01 and 2017–18, specialist grain farms recorded higher average farm cash incomes than non-specialist farms (Figure 4). Average farm cash income of specialist grain farms and non-specialist grain farms in all three regions increased in 2016–17. In 2017–18 average farm cash income is projected to decrease for specialist grain farms in the Northern and Western regions but increase for specialist grain farms in the Southern region. Farm cash income for non-specialist grain farms is projected to increase in all regions in 2017–18 because of higher receipts from sheep, lambs and wool.

Figure 4 Farm cash income, by group and region, 2000–01 to 2017–18



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

Note: Specialist grain farms are grain farms that obtained more than 50 per cent of their total cash receipts from crop receipts. Non-specialist grain farms are grain farms that obtained less than 50 per cent of their total cash receipts from crop receipts.

Source: ABARES Australian Agricultural and Grazing Industries Survey

Total cash receipts

In the Northern region, livestock enterprises (including beef, sheep, lambs and wool) were the most important contributor to total cash receipts on grain farms, accounting for an average of 37 per cent of receipts between 2008–09 and 2017–18 (Figure 5). Wheat receipts were the second most important contributor to total cash receipts, averaging 26 per cent. Oilseeds comprised an average of 6 per cent of total cash receipts, pulses 5 per cent, and barley and grain sorghum each comprised 4 per cent.

In the Southern region, between 2008–09 and 2017–18 wheat accounted for 31 per cent and livestock enterprises accounted for an average of 28 per cent of total cash receipts. Barley receipts averaged 13 per cent of total cash receipts, oilseeds 9 per cent and pulses 4 per cent.

In the Western region, between 2008–09 and 2017–18 wheat receipts made up the largest contribution to total cash receipts, at an average of 43 per cent. Livestock enterprises made the second-highest contribution at an average of 20 per cent. Between 2015–16 and 2017–18 the contribution of livestock to total cash receipts in this region has increased as a result of high prices for beef, sheep, lambs and wool. On average, oilseeds accounted for 14 per cent and barley 13 per cent of total cash receipts. The share of oilseeds as a proportion of cash receipts has trended upwards to account for 19 per cent in 2016–17 and a projected 15 per cent in 2017–18.

Figure 5 Share of total cash receipts, by region, 2008–09 to 2017–18

average per farm



p Preliminary estimate. y Provisional estimate.
Note: Livestock receipts include beef, sheep, lambs and wool.
Source: ABARES Australian Agricultural and Grazing Industries Survey

Total cash costs

In the Northern region, between 2000–01 and 2017–18 interest payments, repairs and maintenance, and fertiliser accounted for the largest share of total cash costs (Figure 6). Fuel, oil and grease, crop and pasture chemicals, hired labour and contracts accounted for more than 5 per cent of total cash costs.

In the Southern region, in the same period fertiliser, crop and pasture chemicals and repairs and maintenance accounted for the largest share of total cash costs. Interest payments, fuel, oil and grease and hired labour also accounted for more than 5 per cent of total cash costs.

In the Western region, fertiliser was the largest contributor to total cash costs, accounting for an average of around 19 per cent between 2000–01 and 2017–18. Crop and pasture chemicals, interest payments, repairs and maintenance, fuel, oil and grease, hired labour and freight also accounted for more than 5 per cent of total cash costs.



Figure 6 Components of total cash costs, grain farms, by region, 2000–01 to 2017–18

Source: ABARES Australian Agricultural and Grazing Industries Survey

Rate of return

The average rate of return (excluding capital appreciation) for grain farms increased from 3.2 per cent in 2015–16 to 4.5 per cent in 2016–17 (Figure 7). In 2017–18 the average rate of return is projected to decrease to around 3.4 per cent, slightly above the average of 2.4 per cent recorded between 2000–01 and 2016–17.

For specialist grain farms, the average rate of return in 2016–17 increased to 5.7 per cent (Table 1) but is projected to decrease to 3.8 per cent in 2017–18. For non-specialist grain farms, the average rate of return in 2016–17 increased to 2.8 per cent and is projected to remain at 2.8 per cent in 2017–18.





average per farm

p Preliminary estimate. **y** Provisional estimate. Source: ABARES Australian Agricultural and Grazing Industries Survey

In 2016–17 and 2017–18 performance varied widely between individual grain farms but was generally positive (Figure 8). In 2016–17 around 81 per cent of grain farms recorded rates of return (excluding capital appreciation) above 0, with around 40 per cent of all grain farms having rates of return above 5 per cent. An estimated 12 per cent of grain farms recorded a rate of return above 10 per cent.

In 2017–18, 77 per cent of grain farms are expected to record rates of return above 0 and around 31 per cent of all grain farms will have rates of return above 5 per cent. Around 8 per cent of grain farms are projected to have rates of return above 10 per cent.



Figure 8 Distribution of grain farms, by rate of return, 2016–17 and 2017–18

p Preliminary estimate. **y** Provisional estimate. Source: ABARES Australian Agricultural and Grazing Industries 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 1989–90 and 2017–18 the annual average rate of return for Australian grain farms was positive in all years except 1990–91 and 2006–07. The annual average rate of return is more widely distributed by region. Grain farms in the Southern region had the greatest overall distribution of rates of return and those in the Northern region had the smallest (Figure 9).



Figure 9 Rate of return variability, by region, 1989–90 to 2016–17

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

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 grain farms. At the national level, between 2000–01 and 2017–18 the average debt of grain farms trended upwards in real terms, mainly resulting from an increase in average farm size rather than changes in debt composition (Figure 10). However, since 2010–11 the annual rate of increase in average debt per farm has slowed. In 2016–17 average debt of grain farms increased by 7 per cent to around \$913,000 in real terms. Average debt of grain farms is projected to increase by a further 1 per cent in 2017–18 to an estimated \$921,000 per farm.



Figure 10 Total farm debt at 30 June, grain farms, 2000–01 to 2017–18

average per farm

p Preliminary estimate. y Provisional estimate.Source: ABARES Australian Agricultural and Grazing Industries 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.

From 2000–01 to 2016–17 borrowing to fund ongoing working capital and land purchases were the main components of average grain farm debt. Increased borrowing for ongoing working capital was a result of several factors, including increases in average farm size, more intensive cropping, changes in grain payment methods and greater use of purchased inputs to finance more intensive production technologies (Martin 2016).

Over the 3 years to 2016–17 land purchase debt and working capital debt each accounted for around 39 per cent of average total debt for grain farms (Figure 11).



average proportion per farm



Source: ABARES Australian Agricultural and Grazing Industries Survey

Equity ratio

Increases in average total debt of grain farms have been largely matched by equivalent changes in total farm equity. This is a result of increases in land values and average farm area operated. As a consequence, between 2000–01 and 2016–17 the average equity ratio of grain farms fluctuated around an average of 85 per cent.

Around 56 per cent of grain farms had an equity ratio greater than 90 per cent in 2016–17. On average, these farms are relatively small and more diverse. Only 53 per cent of their total receipts are from selling crops. A further 31 per cent of grain farms had an equity ratio of 70 to 90 per cent in 2016–17. Only 12 per cent of grain farms had an equity ratio less than 70 per cent. On average, these were relatively large grain-producing farms that obtained around 76 per cent of total cash receipts from crops (Table 3).

Equity ratio	Unit	More than 90%	70 to 90%	Less than 70%
Proportion of farms	%	56	31	12
Total area operated	ha	1,637	2,828	4,312
Total area sown to crops	ha	582	1,231	2,101
Crop receipts	\$	274,748	716,291	1,212,781
Total cash receipts	\$	521,406	1,053,184	1,590,220
Crop receipts as a proportion of total receipts	%	53	68	76

Table 3 Farm performance, by equity ratio, grain farms, Australia, 2016–17

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.

Between 2001–02 and 2006–07 the proportion of farm receipts needed to fund interest payments rose substantially because prolonged drought conditions led to increased farm debt and reduced receipts. Since 2006–07 the ability of grain farms to service their debt has improved as a result of higher cash receipts and reduced interest rates. Over the 10 years to 2016–17 the proportion of receipts needed to pay interest averaged around 8 per cent. In 2016–17 the proportion of farm receipts needed to fund interest payments was around 5 per cent. The proportion of farm receipts needed to fund interest payments is projected to increase slightly in 2017–18 to around 6 per cent (Figure 12).

Figure 12 Ratio of interest paid to total cash receipts, grain farms, Australia, 2000–01 to 2017–18



average per farm

p Preliminary estimate. y Provisional estimate.Source: ABARES Australian Agricultural and Grazing Industries Survey

At the national level, around 39 per cent of grain farms reduced their total debt in 2016–17 (Figure 13). An estimated 36 per cent of grain farms increased their debt on average in 2016–17, and 4 per cent of farms had no change in debt. The remaining 21 per cent of farms had no debt at 1 July 2016 and 30 June 2017.



Figure 13 Distribution of farms, by change in debt, grain farms, Australia 2016–17

Note: Change in debt from 1 July 2016 to 30 June 2017 Source: ABARES Australian Agricultural and Grazing Industries Survey

Debt and equity, by region

Debt and equity of grain farms varied significantly by region, reflecting the different scale of farms, the nature of production systems and relative changes in seasonal conditions.

Figure 14 shows the average debt of grain farms in the Northern, Southern and Western regions increased at similar rates between 2000–01 and 2008–09. Between 2008–09 and 2011–12 average debt in the Western region increased because of increases in average farm sizes and greater use of working capital debt to purchase inputs such as fertiliser and chemicals.

Average debt in the Northern region fell from 2008–09 to 2012–13 as improved seasonal conditions following drought allowed farms to pay off some of their debt. In subsequent years to 2017–18 average debt per farm increased, largely as a result of increased working capital debt.

In the Southern region average debt per farm has declined slightly each year since 2014–15. In the Western region average debt per farm is considerably higher than in other regions, reflecting larger average farm sizes and higher working capital debt.



Figure 14 Total farm debt, grain farms, by region 2000–01 to 2017–18

p Preliminary estimate. **y** Provisional estimate. Source: ABARRES Australian Agricultural and Grazing Industries Survey

Between 2000–01 and 2016–17 increases in average farm debt in the Western region outweighed increases in the total value of farm capital. As a consequence, the average equity ratio trended downwards between 2000–01 and 2013–14 before increasing to above 80 per cent in 2014–15 (Figure 15). The equity ratio fluctuated around 84 per cent in the Northern region and 88 per cent in the Southern region.

Figure 15 Equity ratio, grain farms, by region, 2000–01 to 2016–17

average per farm

average per farm



p Preliminary estimate.

Debt and equity, by specialist and non-specialist growers

Between 2001–02 and 2017–18 the average debt of specialist grain growers increased at a faster rate than for non-specialists (Figure 16). Working capital and land purchase debt represented the largest proportions of debt of specialist grain growers, each accounting for 38 per cent of average debt. Land purchase debt represented the largest share of debt of non-specialist growers, accounting for 41 per cent of average debt in 2016–17.



Figure 16 Total farm debt, grain farms, by group, 2000–01 to 2017–18

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

average per farm

Source: ABARES Australian Agricultural and Grazing Industries Survey

Average equity ratios were lower for specialist grain growers, fluctuating around 83 per cent between 2000–01 and 2016–17. This is because specialist grain growers require increased working capital debt to service greater intensity of input use. The average equity ratio of non-specialists was steady, fluctuating around an average of 88 per cent from 2000–01 to 2016–17 (Figure 17).

Figure 17 Equity ratio, grain farms, by group, 2000–01 to 2016–17

average per farm



p Preliminary estimate.

Source: ABARES Australian Agricultural and Grazing Industries Survey

Distribution of grain farms, by debt and equity

Table 4 shows the distribution of grain farms by debt and equity ratio at 30 June 2017. An estimated 25 per cent of grain farms in Australia had no debt at 30 June. A further 12 per cent held less than \$100,000 in debt. An estimated 27 per cent of farms had debt in excess of \$1 million. Around 56 per cent of grain farms had an equity ratio of more than 90 per cent.

Table 4 Distribution of farms, by farm business debt and equity ratio, grain farms, 30 June2017

percentage of farms

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%	25	12	9	5	4	1	0	56
80 to less than 90%	0	0	2	5	5	5	2	19
70 to less than 80%	0	0	1	1	2	4	3	12
60 to less than 70%	0	0	0	0	1	3	4	8
Less than 60%	0	0	0	0	1	1	3	4
Total	25	12	13	11	13	14	13	100

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

3 Farm capital and investment

Total farm capital

From 2000–01 to 2016–17 the gross value of Australian grain and oilseed production increased by around 39 per cent in real terms to an estimated \$18.5 billion. Over the same period the number of grain farms declined by 31 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 grain 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 grain farmers' capacity to generate farm outputs.

The total value of capital for Australian grain farms increased by 68 per cent in real terms from 2000–01 to 2016–17, although the number of grain and oilseed farms declined (Figure 18). On a per farm basis, total capital more than doubled to around \$6 million per farm in 2016–17, largely as a result of increasing average farm sizes and appreciation in land values.





p Preliminary estimate.

Source: ABARES Australian Agricultural and Grazing Industries Survey

Land accounted for an average of 81 per cent of total capital per farm from 2012–13 to 2016–17 (Figure 19). Plant and equipment accounted for 12 per cent of total capital, and livestock accounted for a further 6 per cent.



average per farm



a The value of all inventories including stocks of wool and grain held on the farm at 30 June. Source: ABARES Australian Agricultural and Grazing Industries 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 rates of return over the medium to longer term.

Figure 20 shows the average value of land and fixed improvements per hectare. The average annual return from land appreciation from 2000–01 to 2016–17 was 5.4 per cent per year. From 1990–91 to 1999–2000 the average annual return from land appreciation was 1.9 per cent per year before stronger demand for farm land led to sharp increases in land values. From 2000–01 to 2008–09 the average annual return from land appreciation was 9.3 per cent per year before declining to an average of 1.1 per cent per year for 2009–10 to 2016–17.





p Preliminary estimate

Source: ABARES Australian Agricultural and Grazing Industries Survey

New farm investment

Most farmers make new investments each year to add to the existing capital stock 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, 64 per cent of grain farms each year made additions to their total capital over the 10 years to 2016–17 (Figure 21). The average value invested each year by those making capital additions fluctuated around an average of \$276,000, broadly in line with movements in farm cash incomes.

In 2016–17 an estimated 74 per cent of grain farms made capital additions at an average of \$297,000 per farm.



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 Agricultural and Grazing Industries Survey

Figure 22 shows the proportion of grain farms 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 8 per cent of grain farms bought land each year on average from 2012–13 to 2016–17. Average expenditure on land for those making purchases was around \$1.1 million per farm.

Around 62 per cent of all grain farms made additions to plant and equipment on average each year over the period, at an average of around \$139,000 per farm. Around 9 per cent of grain farms made additions to buildings and structures. Expenditure on these capital additions averaged around \$81,000 per farm.

Figure 22 Components of capital additions, grain farms, Australia 2012–13 to 2016–17



proportion of farms and average per farm in category

Farm management deposits

ABARES farm surveys record the total holdings of farm management deposits (FMDs) held by partners in the farm business (individuals sharing the farm business's profits) at 1 July and at 30 June. Figure 23 shows the proportion of grain farms holding FMDs and the average value of FMDs held per farm. In real terms the value of FMD holdings per farm increased rapidly from 2000–01 to 2003–04 after the FMD scheme began and then remained relatively steady until 2011–12. Average value of FMD holdings per farm increased by 53 per cent from 2011–12 to 2016–17. In 2016–17 an estimated 36 per cent of grain farms held FMDs at an average value of around \$304,000 per farm.

Figure 23 Farm management deposits, grain farms, Australia, 2000–01 to 2016–17



proportion of farms and average per farm

p Preliminary estimate,

Note: Value of FMDs held is the average of those farms holding FMDs. Source: ABARES Australian Agricultural and Grazing Industries Survey

Expressing FMDs as a percentage of total farm cash receipts or relative to total cash costs provides an indication of the capacity of FMD holdings to buffer downturns in a farm's income. The ratio of FMDs to total cash costs increased from 2000–01 to 2016–17, indicating increasing capacity of farms to soften short-term downturns in farm income. In 2016–17 grain farms held FMDs representing 49 per cent of total cash costs and 29 per cent of average total cash receipts for those farms holding FMDs.

In 2016–17 an estimated 33 per cent of grain farms in the Northern region held FMDs. The average value of FMDs held per farm in the region was \$310,000. Around 39 per cent of grain farms in the Southern region held FMDs in 2016–17 at an average value of \$261,000 per farm. In the Western region 35 per cent of grain farms held FMDs in 2016–17 at an average of \$355,000 per farm.

Investment and capital by region

In each grain region, trends in the total value of farm capital followed the national trend from 2000–01 to 2016–17—the total value of capital increased and the number of farms decreased.

The Northern region has more farms and higher total capital than the Southern or Western regions. From 2000–01 to 2016–17 the total value of capital of grain farms in the Northern region increased by 65 per cent (Figure 24). The region accounted for around 44 per cent of the

total capital value of grain farms in 2016–17. The number of grain farms in the Northern region declined by 30 per cent from 2000–01 to 2016–17 (Figure 25).

The total capital value of grain farms in the Southern region rose by 93 per cent in real terms from 2000–01 to 2016–17. The region accounted for 35 per cent of the total capital value of Australian grain farms in 2016–17. The number of grain farms in the Southern region declined by 32 per cent from 2000–01 to 2016–17.

The number of grain farms in the Western region fell by 33 per cent but the total capital value grew by 41 per cent in real terms from 2000–01 to 2016–17. In 2016–17 the Western region accounted for 20 per cent of the total capital value of Australian grain farms.



Figure 24 Total value of capital, grain farms, by region, 2000–01 to 2016–17

p Preliminary estimate.





p Preliminary estimate.

Source: ABARES Australian Agricultural and Grazing Industries Survey

The average proportions of the components of capital in each region are similar to the national proportions. Land is the biggest component of total capital in all regions. Livestock is a higher proportion of total capital in the Northern region (7 per cent) (Figure 26). The Northern region has a relatively higher proportion of farms with mixed farming enterprises and fewer specialist growers than the Southern and Western regions.



average per farm



a The value of all inventories including stocks of wool and grain held on the farm at 30 June. Source: ABARES Australian Agricultural and Grazing Industries Survey The average value of land for grain farms increased in all regions from 2000–01 to 2008–09 (Figure 27). Land values in the Southern and Western regions have trended upwards since 2013–14. Average land values in the Northern region were relatively steady compared with the other regions, but are estimated to have increased in 2016–17.





average per farm

p Preliminary estimate.

Source: ABARES Australian Agricultural and Grazing Industries Survey

Around 6 per cent of grain farms in the Northern region purchased land on average over the 5 years ending 2016–17 (Figure 28). The average level of investment for those farms making land additions was the largest among the regions at around \$1.4 million per farm. Around 10 per cent of Northern region grain farms added buildings and structures and 62 per cent added plant and equipment over the 5 years ending 2016–17.

In the Southern region around 10 per cent of grain farms on average added land, 9 per cent added buildings and structures and 63 per cent added new plant and equipment over the 5 years ending 2016–17.

An average of 10 per cent of grain farms in the Western region purchased land and 7 per cent added buildings and structures. Around 59 per cent of grain farms invested in new plant and equipment. Average additions to plant and equipment in the Western region was \$221,000 per farm, which was considerably higher than the average additions in the other regions. This reflects larger farm sizes in the Western region. Figure 28 Components of capital additions, grain farms, by region, 2012–13 to 2016–17

proportion of farms and average per farm



Source: ABARES Australian Agricultural and Grazing Industries Survey

Investment and capital by specialist and non-specialist growers

Trends in farm capital are comparable between the specialist and non-specialist grain growers and both groups follow the national trend. However, some differences exist as a result of the different mix of livestock and cropping enterprises of these two groups.

The number of specialist grain growers declined by 45 per cent from 2000–01 to 2016–17 (Figure 29). Total capital value of specialist growers rose by 69 per cent since 2000–01 and accounted for 60 per cent of total grain farm capital in 2016–17 (Figure 30). Average total capital per specialist grain farm was \$7.4 million in 2016–17.



Figure 29 Number of grain farms, by group, 2000–01 to 2016–17

p Preliminary estimate.

The number of non-specialist grain growers declined by 8 per cent from 2000–01 to 2016–17. The total capital value of non-specialist grain growers increased by 66 per cent to account for 40 per cent of total grain farm capital in 2016–17. The total value of capital of non-specialist grain growers declined from 2008–09 because of lower land values, before rising from 2014–15 to 2016–17 when land values increased in response to stronger demand for farm land.



Figure 30 Total value of capital, grain farms, by group, 2000–01 to 2016–17

p Preliminary estimate. Source: ABARES Australian Agricultural and Grazing Industries Survey

Land accounted for 81 per cent of total capital of specialist grain growers from 2012–13 to 2016–17 (Figure 31). Plant and equipment accounted for a further 15 per cent of total capital and livestock accounted for 3 per cent. For non-specialist grain growers, land accounted for 80 per cent of total capital, plant and equipment accounted for 9 per cent and livestock accounted for 10 per cent.



average per farm



a The value of all inventories including stocks of wool and grain held on the farm at 30 June. Source: ABARES Australian Agricultural and Grazing Industries Survey

Over the 5 years to 2016–17 an estimated 67 per cent of specialist grain growers each year made new additions to capital at an average of \$377,000 per farm making capital additions. On average 63 per cent of non-specialist grain growers each year made capital additions from 2012–13 to 2016–17. Those non-specialist grain growers making new additions to capital spent on average \$152,000 per farm each year from 2012–13 to 2016–17.

Average spending on land was significantly greater for specialist grain growers than nonspecialist growers at \$1.3 million per farm from 2012–13 to 2016–17. This was a result of larger areas of land purchased on average by specialist grain growers and greater average value of land per hectare purchased (Figure 32). Figure 32 Components of capital additions, grain farms, by group, 2012–13 to 2016–17

proportion of farms and average per farm in category



4 Physical characteristics

In 2016–17 an estimated 23,000 Australian farms had at least 40 hectares sown to grains, oilseeds or pulses. Around 44 per cent of these farms were in the Northern region, 37 per cent in the Southern region and 18 per cent in the Western region (Map 1).

From 2000–01 to 2016–17 the total number of Australian grain farms fell by around 31 per cent. In the Northern region the number of grain farms fell by 30 per cent, in the Southern region by 32 per cent and in the Western region by 33 per cent (Figure 33).



Figure 33 Number of grain farms, by region, 2000–01 to 2016–17

p Preliminary estimate.

Source: ABARES Australian Agricultural and Grazing Industries Survey

Australian grain production is characterised by production of predominantly winter cereals, produced across a wide geographic area with differing climate, soil characteristics and management requirements. From 2000–01 to 2016–17 wheat accounted for 55 per cent of the area planted to grains, oilseeds and pulses, on average, followed by barley (18 per cent). In 2016–17 the share of area planted to wheat was 53 per cent and the area planted to barley was 18 per cent (Table 5).

From 2000–01 to 2016–17 the share of area planted to oilseeds trended upwards. In 2016–17 oilseeds accounted for 11 per cent of total area planted to grains, oilseeds and pulses. During the same period, the share of area sown to pulses declined overall. However, from 2014–15 the proportion of area planted to pulses increased as a result of favourable pulse prices. In 2016–17 pulses accounted for an estimated 11 per cent of total area planted.

Table 5 Physical performance, grain farms, Australia, 2016–17

average per farm

Indicator	Unit	2016-17p
Area operated	ha	2380
Area sown to grains, oilseeds and pulses	ha	912
Number of sheep at 30 June	no.	1899
Number of beef cattle at 30 June	no.	139
Proportion of area sown to grain crops		
Wheat	%	53
Oats	%	6
Barley	%	18
Grain sorghum	%	1
Pulses	%	11
Oilseeds	%	11
Other grain crops	%	1
Total grain, oilseeds and pulses	%	100

p Preliminary estimate.

Source: ABARES Australian Agricultural and Grazing Industries Survey

Trends in physical characteristics, by region

Northern region

The Northern region includes grain farms in New South Wales and Queensland. These farms typically produce a mix of grain crops and livestock. In 2016–17 around 38 per cent of Northern region grain farms were specialist grain growers. Over the 3 years to 2016–17 around 71 per cent of Northern region grain farms planted less than 600 hectares and 6 per cent planted more than 2,400 hectares (Figure 34).

Wheat is the main crop grown by Northern region grain farms. From 2000–01 to 2016–17 wheat accounted for around 56 per cent of total grain production in the region each year. In 2016–17 these farms accounted for 34 per cent of Australian grain, oilseed and pulse production—down from 42 per cent in 2000–01. In contrast, total grain production in the Northern region in 2016–17 increased by 27 per cent from the previous year (Figure 35).

Southern region

The Southern region includes grain farms in Victoria, South Australia and Tasmania. These farms typically produce a mix of grain crops and livestock. In 2016–17 around 60 per cent of Southern region grain farms were specialist grain growers. Over the 3 years to 2016–17 around 59 per cent of Southern region grain farms planted less than 600 hectares and 7 per cent planted more than 2,400 hectares (Figure 34).

From 2000–01 to 2016–17, on average, wheat accounted for 53 per cent of total grain production each year on Southern region grain farms and barley accounted for 31 per cent. In 2016–17 these farms accounted for 36 per cent of Australian grain, oilseed and pulse production—similar to that of 2000–01. Total grain production in the Southern region doubled in 2016–17 from the previous year (Figure 35).

Western region

The Western region includes grain farms in Western Australia. This region has fewer grain farms than the other regions, but a much higher proportion of Western region grain farms plant large areas of crops. In 2016–17 around 57 per cent of these farms were specialist grain growers. Over the 3 years to 2016–17 around 31 per cent of Western region grain farms planted more than 2,400 hectares and 37 per cent planted less than 600 hectares (Figure 34).

From 2000–01 to 2016–17, on average, wheat accounted for 62 per cent of total grain production on Western region grain farms each year and barley accounted for 21 per cent. From 2006–07 production of oilseeds increased, accounting for 12 per cent of total production in 2016–17. Grain farms in the Western region accounted for around 30 per cent of Australian grain, oilseed and pulse production in 2016–17—up from 22 per cent in 2000–01. Total grain production in the Western region in 2016–17 increased by 19 per cent from the previous year (Figure 35).





Source: ABARES Australian Agricultural and Grazing Industries Survey





p Preliminary estimate.

Variability in crop yields, by region

Crop yields in the Northern region are generally high because of high inherent soil fertility. However, yields vary as a result of relatively high variability in seasonal rainfall. Crop yields in the Southern region are also highly variable because the region's soil has lower water storage capacity, making producers more dependent on seasonal rainfall. Crop yields are lower and less variable in the Western region as a result of low soil fertility and less variable seasonal rainfall.

From 2000–01 to 2016–17 the Western region recorded the lowest overall variation in wheat yields (Figure 36).



Figure 36 Variability in yield, by region, 2000–01 to 2016–17

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

Source: ABARES Australian Agricultural and Grazing Industries Survey

Over the 5 years to 2016–17 the average wheat yield per hectare was 2.3 tonnes in both the Northern and Southern regions and 1.7 tonnes in the Western region (Figure 37).





p Preliminary estimate.

Source: ABARES Australian Agricultural and Grazing Industries Survey

From 2000–01 to 2016–17 average grain, oilseed and pulse yields increased (Figure 38). However, the Millennium Drought had a depressing effect on average yields over the period. Average wheat yield in 2016–17 is estimated to have been 2.6 tonnes per hectare and the barley yield was 3.1 tonnes per hectare.

Figure 38 Grain, oilseed and pulses yields, grain farms, Australia, 2000–01 to 2016–17



average per farm

p Preliminary estimate.

Grain stocks

The level of grain stocks held on farms varies with grain prices, requirements for seed and livestock feeding, marketing arrangements and timing of harvest. From 2000–01 to 2016–17 the average stock of grains, oilseeds and pulses on hand at 30 June trended upwards (Figure 39). The average stock of grain on hand per farm at 30 June 2017 was around 349 tonnes, up 32 per cent from 30 June 2016 mainly as a result of increased grain production. Of this total grain stock per farm, wheat accounted for 45 per cent and barley 25 per cent (Table 6).

Figure 39 Grain stocks at 30 June, grain farms, Australia, 2000–01 to 2016–17



average per farm

p Preliminary estimate.

Source: ABARES Australian Agricultural and Grazing Industries Survey

Table 6 Grain stocks at 30 June, grain farms, Australia, 2015–16 to 2016–17

Crop	Unit	2015-16	2016-17p
Pulses	t	14	43
Oilseeds	t	7	3
Wheat	t	130	157
Oats	t	14	32
Barley	t	77	89
Grain sorghum	t	14	9
All grains	t	264	349

p Preliminary estimate.

Physical characteristics by scale of grain production

From 2000–01 to 2016–17 the number of grain farms planting more than 1,200 hectares of grains trended upwards and the number of farms planting less than 1,200 hectares trended downwards (Figure 40). Larger farms are increasingly dominating total output of grains, pulses and oilseeds.

From 2000–01 to 2016–17 large grain farms significantly increased their share of production. From 2014–15 to 2016–17 around 10 per cent of grain farms, planted more than 2,400 hectares. These farms accounted for 46 per cent of production and the 61 per cent of farms planting less than 600 hectares accounted for only 15 per cent (Table 7).

Area planted to grains, oilseeds or pulses	Proportion of farms (%)	Proportion of production (%)
Less than 600 hectares	61	15
600 to 1,200 hectares	16	17
1,200 to 2,400 hectares	13	22
More than 2,400 hectares	10	46

Table 7 Proportion of grain farms and production, by size, 2014–15 to 2016–17

Source: ABARES Australian Agricultural and Grazing Industries Survey

From 2000–01 to 2016–17 the number of farms planting more than 2,400 hectares of grain increased by 103 per cent. On average, around 95 per cent of grain farms each year remained in this category from one year to the next. An estimated average of 5 per cent of farms each year increased their area planted from between 1,200 and 2,400 hectares to more than 2,400 hectares.





p Preliminary estimate.

5 References

Martin, P, 2016, 'Farm performance: broadacre and dairy farms, 2013–14 to 2015–16', Agricultural commodities: March quarter 2016, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.