Final report

Pastoral Company Production and Financial Benchmarking, 2018-21

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Abstract

This project analysed the performance of over 100 pastoral company stations (business units) from 11 companies across northern Australia. This groups manages approximately 5% of the national herd on 3.5% of the Australian landmass, an area larger than Victoria. This is the largest dataset on beef business performance in Australia, outside of the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES).

The findings of this work are consistent with other analyses, where the factors separating the top performers are clear, consistent and straightforward. The better performing business units have better herd productivity, better targeted and lower direct herd expenditure, better labour efficiency and sufficient operating scale.

The highest group average operating profit (EBIT/AE) was recorded in 2021, though it did not coincide with the highest group average profitability (ROAM), which occurred in 2017. This was due to yield compression, whereby increased underlying asset values in later years offset gains in operating profits. Herd values increased largely in proportion to land values in terms of overall asset value increases.

There is considerable variation in performance across year, regions, companies and enterprises. However, businesses with more consistent herd productivity year-to-year have more consistent profits year-to-year, and higher long-term average profits.

Executive Summary

- This project analysed the performance of over 100 pastoral company stations (business units) from 11 companies across northern Australia. Analysis was undertaken by business unit, enterprise type, region, company and group.
- The purpose of the project was to provide participants with a detailed analysis of their production and financial performance in their own right and relative to their peers. The analysis was undertaken using 'The Business Analyser®', a proprietary pastoral business benchmarking product of Bush AgriBusiness.
- The group analysed manage approximately 5% of the national herd on 3.5% of the Australian landmass, an area larger than Victoria. This is the largest dataset on beef business performance in Australia, outside of ABARES.
- The findings of this work are consistent with other analyses, where the factors separating the top performers are clear, consistent and straightforward. These *fundamentals* should be the primary focus of all profit-oriented beef businesses. These fundamentals are;
    - better herd productivity, measured in kilograms of beef produced per AE, resulting in higher income per AE
    - better targeted, and lower, direct herd expenditure
    - better labour efficiency, resulting in lower overheads per animal unit
    - sufficient operating scale

  The first point above on better herd productivity is the most important. The best performing business units did not necessarily have the lowest costs, they achieved their performance by having higher income through more productive herds and having a competitive cost base. Price received was not a factor in achieving their higher income.
- Comparisons of whole company performance provide some key insights;
    - Better performing companies have a much lower cost of production than their peers.
    - Better performing companies have higher herd productivity.
    - Average sales price received explains little, if any, of the difference in performance of the companies.
    - Better performing companies don't necessarily have the lowest operating expenditure.
- The highest group average operating profit (EBIT/AE) was recorded in 2021 though it did not coincide with the highest group average profitability (ROAM), which occurred in 2017. This was due to yield compression, whereby increased underlying asset values in later years offset gains in operating profits. Herd values increased largely in proportion to land values in terms of overall asset value increases.
- Rainfall had a weak negative relationship with beef production per animal unit and per hectare. However, pasture growth was positively related to both variables, and more strongly for kilograms of beef produced per hectare. This demonstrates that managers can, and are, effectively managing stock numbers through seasonal variation to maintain animal unit productivity.
- Changes in beef prices has a big influence on the financial performance of business units, as well as the group and industry overall year to year. However, price received is not a factor separating the performance of top performing businesses in the long term.

- Even in periods of high prices, the cost of production measure remains important and is a key factor separating top performing business units and companies.
- Enterprise performance varied over the period analysed. Growing businesses generally had much higher herd profits (EBIT/AE), however the return on assets was similar across the top performers of all enterprise types, reflecting the higher land value of growing country. This highlights that rather than an enterprise type being more profitable than another, optimising the performance of the enterprise that a station is best suited to is most important.
- The population of the group and the top performers changes over time, but about a quarter of business are top performers in 50% or more of years that they qualify.
- Average overhead costs increased over time, which has corresponded with a reduction in labour efficiency and an increase in the cost of labour. Over the long term however, the increase in average wage of the pastoral companies is fairly consistent with changes in average wages across the broader Australian economy.
- The composition and level of enterprise expenses has changed over time, with changes in seasonal conditions and prices during the period analysed.
- The internal rate of return (IRR) of those business units with 10 years of data in the data set has been analysed. These businesses generated an 8% IRR over the 10 years, approximately two thirds of which was from land value increases.
- Across market and seasonal cycles, the pastoral company group showed similar trends in performance as that of private producers in northern Australia.
- Over the long term, average capital return has equalled average operating return, however in recent years capital return has far exceeded operating return.
- Businesses with more consistent herd productivity year to year have more consistent profits year to year, and higher long-term average profits.

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1. Background

Pastoral company production and financial benchmarking commenced in 2014 as a way for the corporate scale beef producing pastoral companies operating in northern Australia to understand and compare their performance. Six pastoral companies were part of the initial project and their data was analysed from 2012 to 2017 calendar years inclusive. At the completion of the initial part of the project, 'Round 2' commenced, with all six original companies included, along with five additional companies joining the group.

The combined projects provide 10 years of data, representing the most comprehensive dataset of the performance of extensive beef business units in Australia, outside of ABARES. To provide the greatest insight from this dataset, the full 10 years of data is included and analysed in this report.

2. Objectives

The purpose of the project was to provide participants with a detailed analysis of their production and financial performance (at station, enterprise, region and company level) in their own right and relative to their peers.

This provided insight into the performance achieved and the reasons behind it, along with facilitating group discussion on factors within management control that influence performance.

3. Methodology

The analysis was undertaken using The Business Analyser®, a proprietary business analysis methodology developed by Bush AgriBusiness to analyse and compare grazing businesses across Australia.

The analysis was primarily conducted on business unit (station) performance, with business unit information aggregated up for analysis by enterprise, region, and company. All financial data reported has been adjusted for inflation and are expressed in 2021 dollars. Analysis is on a calendar year basis to capture the full production year of northern pastoral operations.

The analysis of each station or business unit was completed at two levels;

- Whole Business Analysis - total dollar reporting of income statement, cashflow statement, balance sheet and whole business key performance indicators, and,
- Enterprise Analysis - herd level income statement and key performance indicators.

The majority of the analysis and interrogation of the data was conducted at the enterprise level. This provided the best basis for analysis of factors influencing overall group performance.

The primary unit of analysis at the enterprise level was the Animal Equivalent (AE). The AE rating represents the energy demand of an animal relative to that of a standard animal unit, which is equivalent to a 450kg *Bos Taurus* steer with zero liveweight gain. Expressing performance on a per AE basis provided a common measure of analysis across all enterprises and regions.

A summary of benchmarking metrics used and a description of their calculation is given in Appendix 9.2

3.1 Enterprise Analysis

The enterprises analysed in the project were the pasture-based beef producing enterprises listed below, with these findings forming the basis of this report. Some participants had internal studs, which were analysed at company but not group level. Stations were either single enterprise stations or multiple enterprise stations. Multiple enterprise stations either had their enterprises separated for analysis or were analysed as one (Breeding & Growing below).

- Commercial Breeding: Self-replacing breeding herds growing own progeny through to point of sale with bulls being the main class purchased or transferred in
- Growing: Enterprises running dry stock transferred in for growing and subsequent sale (or transfer)
- Breeding & Growing: Where breeding animals were run and dry stock were trucked in for weight gain. Companies were unable to accurately separate the livestock numbers, transfers and expenditure for each, so they were analysed as a single enterprise.

The Commercial Breeding and Growing enterprises are the main enterprises analysed as their performance and performance indicators can be analysed in detail and related to the result. Analysis of the combined Breeding & Growing enterprise is limited as the contribution to the final result from the breeding component and the growing component is unknown.

Table 1 shows the breakdown of AE and number of enterprises by enterprise type and year in the analysis, excluding studs. Note that the number of enterprises is greater than the number of stations due to some stations analysing multiple enterprises separately.

Table 1: Number of Enterprises and Animal Equivalents analysed by year

		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Breeding	AE (000's)	743	679	684	930	985	1,136	1,124	990	935	925
	n	31	32	32	45	45	51	52	47	46	40
Breeding & Growing	AE (000's)	430	377	332	265	267	261	257	176	155	190
	n	14	14	12	12	13	12	11	9	10	11
Growing	AE (000's)	241	216	203	241	268	263	274	224	229	175
	n	24	25	27	29	32	34	35	30	29	25
Total	**AE (000's)**	**1,414**	**1,272**	**1,219**	**1,436**	**1,520**	**1,660**	**1,655**	**1,390**	**1,319**	**1,290**
	n	**69**	**71**	**71**	**86**	**90**	**97**	**98**	**86**	**85**	**76**

3.2 Top 25% Segregation

The segregation of Top 25% performers is done in two ways; the top performing business units are segregated based on return on assets managed, this is shown on page 19 of Appendix One. At enterprise level, Top 25% performers are segregated based on earnings before interest and tax per AE (see pages 21, 23 and 25 of the Appendix). This is the best way to rank enterprise performance as where a business unit has more than one enterprise, the return on assets managed will be a function of both enterprises, and therefore not suitable to rank each enterprise. Our analysis has shown that Earnings Before Income and Tax (EBIT) per AE is highly correlated to business profitability, so it is still

separating the most profitable performers. Top performers by region are not identified as there is not always a sufficient population to do so.

The ranking of Top 25% businesses and enterprises, is based on three-year average performance. That is, for a business or enterprise to be identified as Top 25% for a year, it's 3-year average Return on Assets Managed (ROAM) or EBIT/AE (for the 3yrs up to and including that year), is in the top quartile of the group.

3.3 Applications and limitations of methodology

The purpose of the benchmarking process is to report on the actual performance of each station (as a business unit) and company, reporting their actual production and financial performance on a like for like basis. It achieves this purpose, but does have limitations.

By only analysing the pasture-based aspects of each company it does not capture the entirety of each company's operations. The accuracy of results is also subject to the accuracy of the information provided and assumptions applied, particularly for measures such as animal weights, animal values and animal unit ratings.

It was agreed amongst participants at the commencement of the project that a standardised price would be applied to internal transfers between stations. This transfer price was based on market average data obtained from MLA's National Livestock Reporting Service. A premium was applied to cattle going into feedlots to reflect that they meet feedlot specs, but otherwise the pricing was based on conventional market averages.

In the latter years of the project there was a number of Wagyu cattle included in the dataset. With the use of external wagyu sales data from participating companies and price data sourced from Auctions Plus, standardised Wagyu pricing data was derived for application to internal transfers and inventory valuations.

The benchmarking process is primarily a diagnostic process. It is best used to diagnose the strengths of a business and where the areas for improvement lie. Comparison against the performance of peers (at an aggregated, regional or enterprise level) demonstrates what performance is achievable for individual measures and overall performance.

All of the per AE data expressed are weighted by the number of AE and not an arithmetic average. Similarly, the per kilogram data are also weighted by the number of kilograms.

The group data reflects all stations that were included in the dataset over time, although individual company results is comprised of the stations in the dataset at the end of the project.

3.4 External Factors

Rainfall and cattle prices were external factors affecting performance over the period analysed. Section 5.6 looks at the relationship between rainfall, pasture growth and performance. Figure 1 below shows the change in the beef market in real terms over the period analysed (orange dotted line) relative to prices over the last 20 (percentile range) and 35 years. This shows that prices over the period of analysis spanned the full decile range of long-term prices.

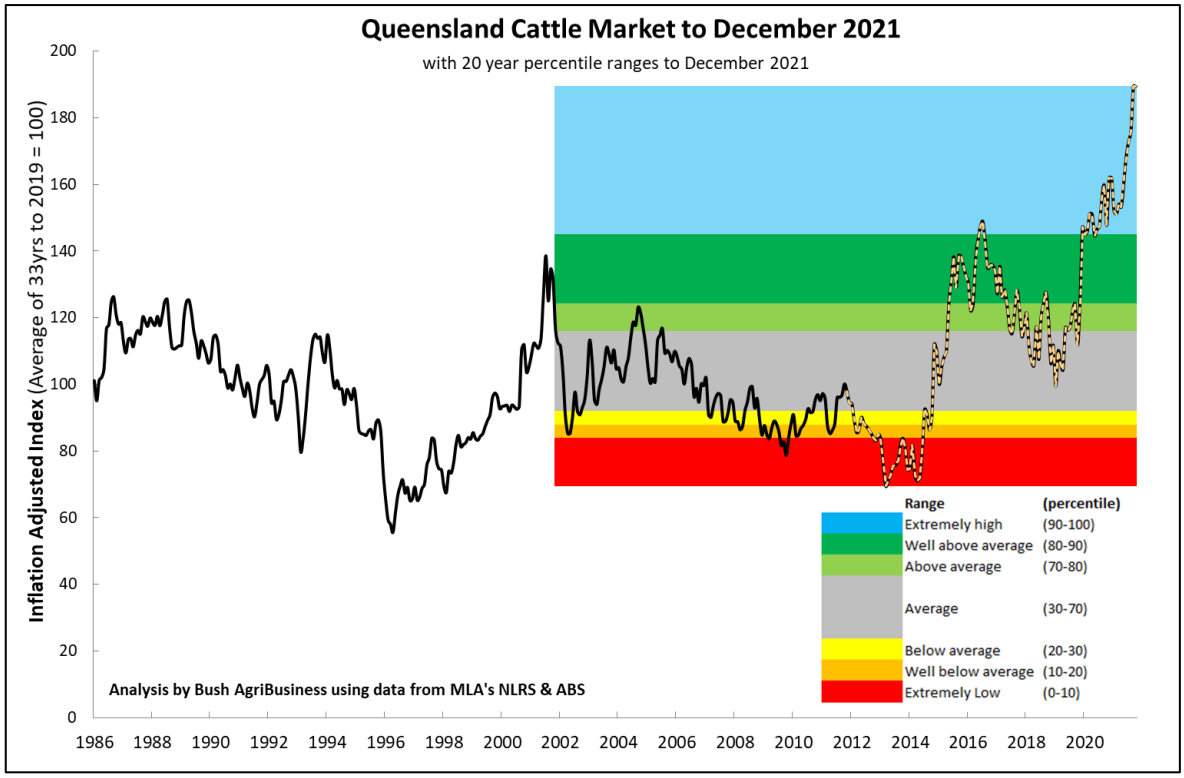

Figure 1: Long-Term cattle prices

4. Results

The consolidated results of the analysis are presented in Appendix 9.1 with these results analysed and interpreted in the next section.

The reports included are;

- All Companies Summary Data
  - ***Station Performance by Year***
    Whole business report detailing the average and Top 25% annual performance of all stations included in the project.
  - ***Herd Performance by Year (all companies and all enterprises)***
    Herd income statement of the average annual performance of the entire data set, expressed on an AE basis.
- Enterprise Summary Data
  - ***Herd Performance by Enterprise***
    Herd income statement detailing the 3-year average across the three main enterprise types, and across all enterprises.
  - ***Breeding by Year***
    Breeding enterprise performance for each year along with the long-term average of all breeding enterprises and of the Top 25% of breeding stations.
  - ***Breeding Top Middle Bottom***
    Separating the top performers and the bottom performers from the remainder of the group can be a useful way to identify differences in performance. Here the average long-term performance of the top 5, bottom 5 and middle group of breeding enterprises are presented.

- ***Breeding & Growing by Year***
  The annual performance of those enterprises that have both breeding and (brought in) growing animals where the performance is unable to be separated, along with long-term average and Top 25%.
- ***Breeding & Growing Top Middle Bottom***
  The average of the top 3, bottom 3 and middle group of breeding & growing enterprises.
- ***Growing by Year***
  The annual performance, long term average and Top 25% performance of growing enterprises.
- ***Growing Top Middle Bottom***
  The average of the top 5, bottom 5 and middle group of growing enterprises.

5. Analysis and Discussion

5.1 Top 25% Composition

Separating out the top performers is a good way to see the range in performance. It demonstrates what performance may be achievable and is useful for target setting.

It is important to note that the population of the Top 25% is not consistent year to year, it changes with changes in the overall population and with changes in the performance of individual business units. There is some consistency in the top performers though. Looking at the whole business segregation first, the population ranges from 65 to 91 business units analysed each year, as shown in Table 2 below. Over the 10 years though there are over 100 business units analysed in total, with business units coming and going year to year as changes were made to companies' portfolios.

Table 2: Whole Business Top 25% population from 2012 - 2021

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total Population	65	66	67	81	85	91	91	82	79	72
Top 25% Population	16	16	16	16	15	19	21	19	19	18

To account for change in population over time, an analysis was done of the proportion of years that business units were top performers, based on ROAM (of the years they had at least 3 years of data and were eligible to be a top performer). Just over half of the business units were a Top 25% business in at least one year. Just over a quarter of business units were a top performer in 50% or more years that they were eligible to be. This is displayed in Figure 2 below.

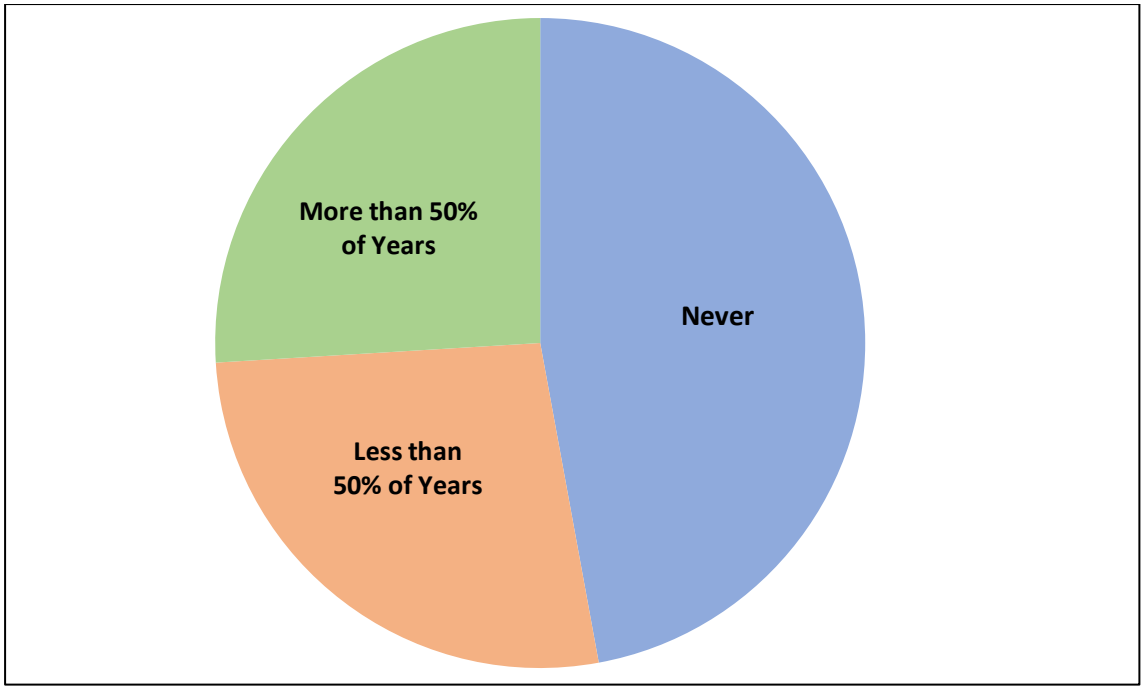

Figure 2: Proportion of years that business units are Top 25% performers

Of those that were top performers in 50% or more of the years they were eligible, 19 were in the dataset in 2021.

The population of enterprises changed slightly more than the population of business units, as there were changes in enterprises within business units, either as a strategy to deal with seasonal conditions, a change in strategic purpose, or a change in record keeping allowing breeding and growing enterprises to be reported separately.

The spread of top performers by enterprise is largely similar to that of the whole group shown in Figure 1, as is expected, particularly breeding. Figure 3 below shows the composition by enterprise type. The Breeding & Growing enterprise is a smaller dataset, with 17 enterprises having at least three years of data. The growing distribution indicates there is greater variability in the population of top performers of growing enterprises. Much of this variability can be explained by more growing enterprises entering and leaving the dataset during the period, which contributed to greater change in the population of top performers.

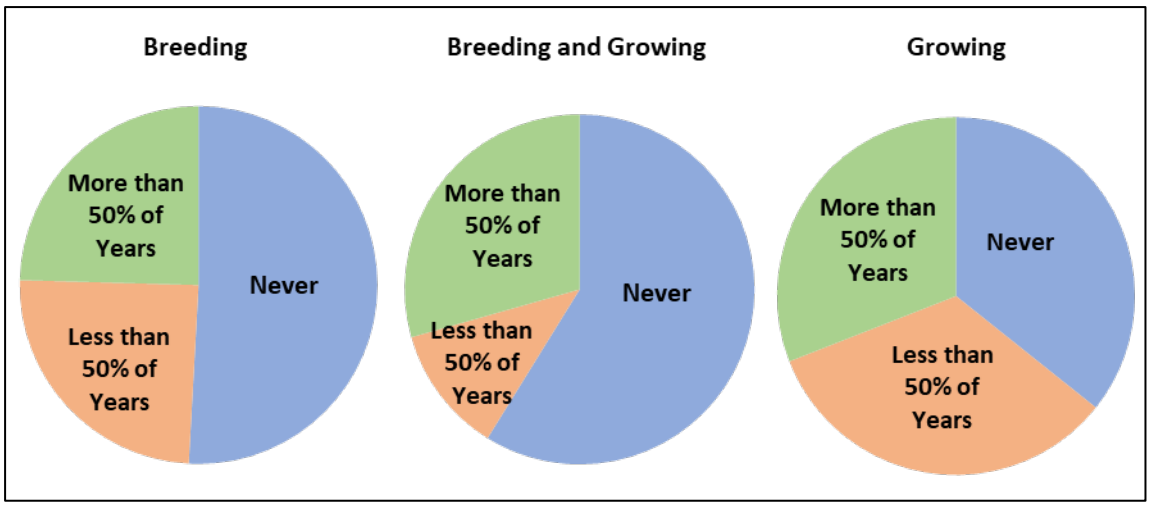

Figure 3: Proportion of years that business enterprises are Top 25% performers

5.2 Whole Business Performance

An analysis over this ten-year period incorporates the full market cycle and a wide range of seasonal variability across all regions during these years. While these are key external factors that have a large influence on business performance, the long-term data demonstrates that the key fundamental drivers of beef business performance remain relevant. These factors continue to characterise the better performing businesses - irrespective of the position of the cattle market and the effect of climate.

By nature of the long-term analysis, there is significant variability in the average station performance of the group over time. To highlight the variability, the last three years of analysis included both the highest group average EBIT/AE for the ten years ($211/AE recorded in 2021) and the lowest group average EBIT/AE for the ten years ($20 loss/AE in 2019). There is also large variability in performance between stations and companies, as elaborated on in the Company comparison section below.

5.2.1 Profitability

Whole business profitability, or total business return, is made up of two components; the profitability of the operating business (operating return or return on assets managed), and the capital appreciation of the land asset (capital return). The two measures of operating profitability (operating return and return on assets managed) differ slightly, where the former is EBIT after land lease payments as a percentage of owned assets, and the latter is EBIT before land lease payments as a percentage of all assets managed, including leased land. Both are relevant, but ROAM allows better comparison of performance between leased and owned business units, and is therefore the primary measure of operating performance used here. Figure 4 below shows the annual average ROAM and capital return for the group over the 10 years analysed, with the 10-year average and three-year average shown also.

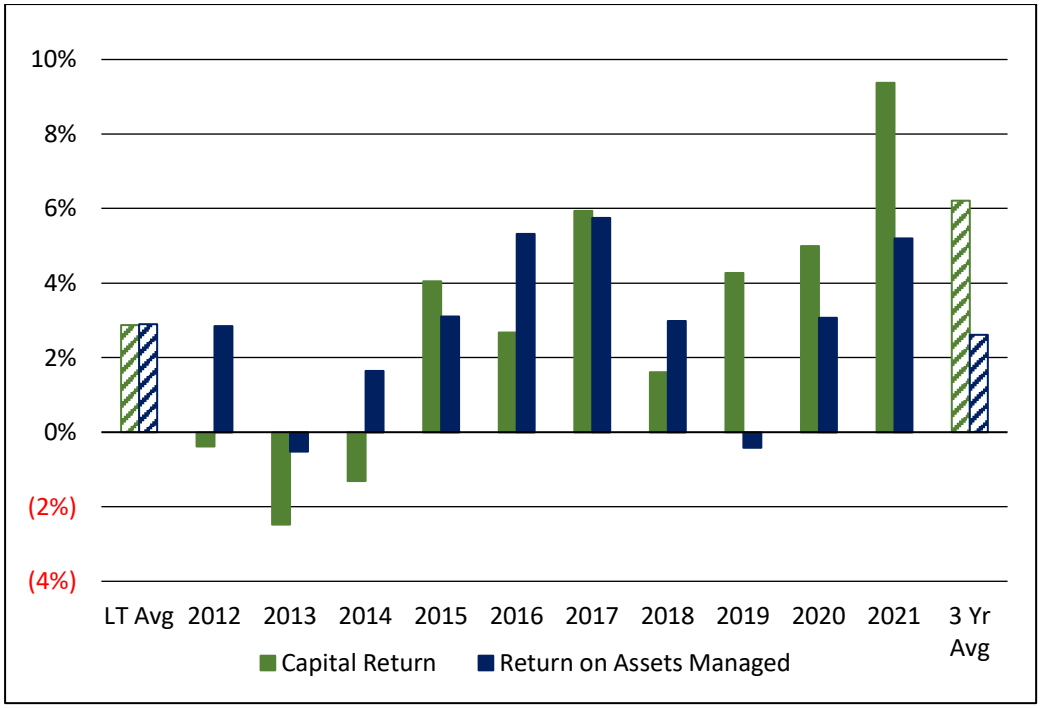

Figure 4: Return on Assets Managed and Capital Return of Group

The whole group had an average ROAM of 2.9% and an average capital return of 2.9% over the ten-year period analysed, giving an average annual total business return of 5.8%. This shows that there was an equal contribution from each to whole business profitability in the long term. There was no such balance in more recent years however, with a 3yr average capital return of 6.2% outweighing the 3yr average operating return of 2.6% for the whole group across 2019-2021.

The ten-year average ROAM of 6.2% for the Top 25% performing businesses is more than double that of the whole group, as shown in Figure 5 below. The Top 25% group had a ten-year average capital return of 3%, similar to the average of the whole group. This shows that the top cohort of businesses are less reliant on the contribution of capital returns to whole business profitability.

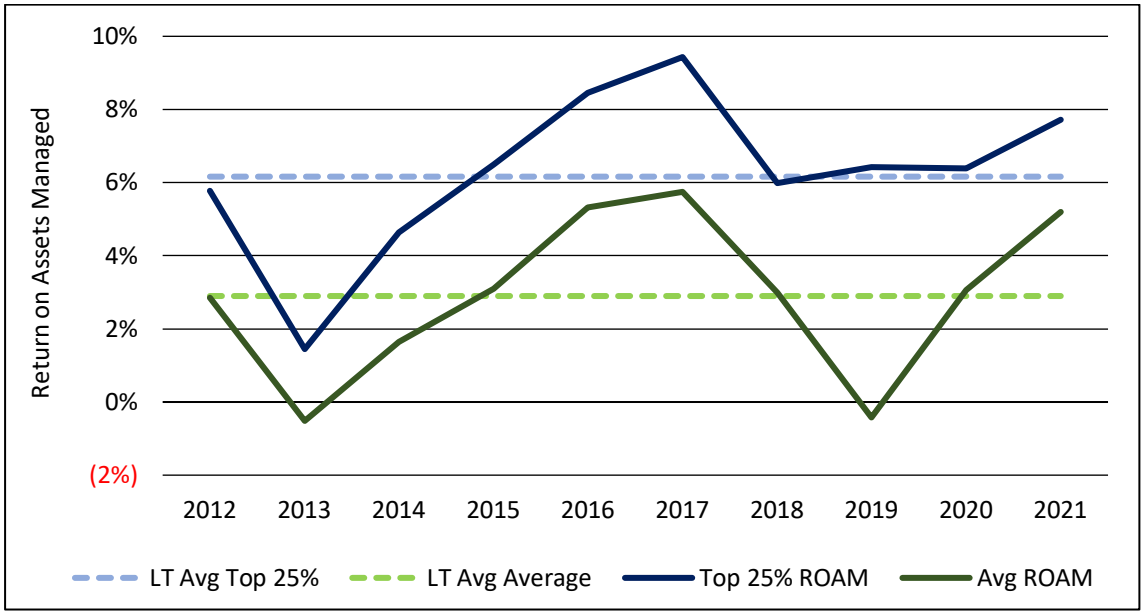

Figure 5: Return on Assets Managed (Average vs Top 25%)

As referred to above, in 2021 the group recorded the highest average operating profit over the ten years. The strong recent performance did not translate to the highest operating profitability however, with the ROAM in 2021 falling short of the returns achieved in 2016 and 2017. Historically, operating profit (EBIT/AE) and ROAM have ben correlated, however a deviation has appeared in recent years, as average ROAM has not increased to the same proportion as the increase in operating profit as seen in Figure 6 below. This is a product of yield compression - where the value of the underlying assets increases at a greater rate than the increase in operating profits that are generated.

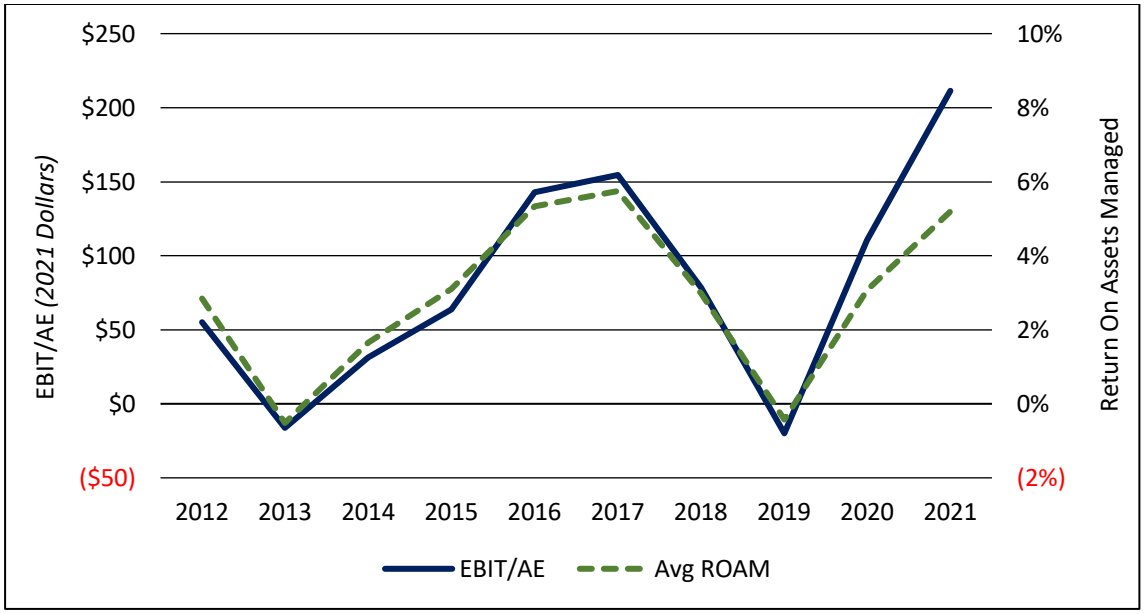

Figure 6: Group EBIT per AE and Return on Assets Managed

Figure 7 below illustrates the relative change in asset value per AE, compared to the change in operating profit per AE. While EBIT/AE has increased at times during the analysis, it has been more volatile than the consistent rise in asset value, placing pressure on the operating return as a percentage of asset value.

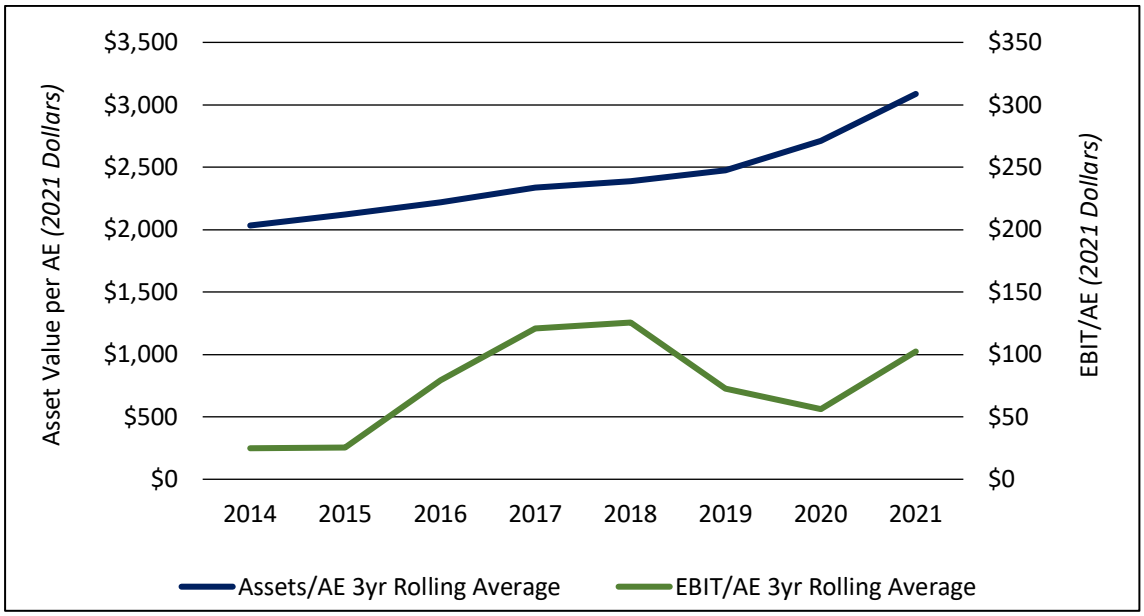

Figure 7: Average asset value per AE and EBIT per AE (3yr rolling average)

Over the long term, the increase in asset values has partly been a result of a significant increase in land value per AE. This is particularly evident during the last 4 years of the analysis, when the land market has risen significantly. While the value of land has increased, average composition of assets in the group has remained similar. On average, land value has continued to make up around 60 - 70% of the total value of assets, throughout the period of the analysis. The increase in land value has been accompanied by increased average herd values, a product of the rising cattle market during this time. The change in average land and livestock values per AE is shown below in Figure 8. Since herd value has increased in a similar proportion to land, the average composition of the balance sheet in the group has remained fairly consistent.

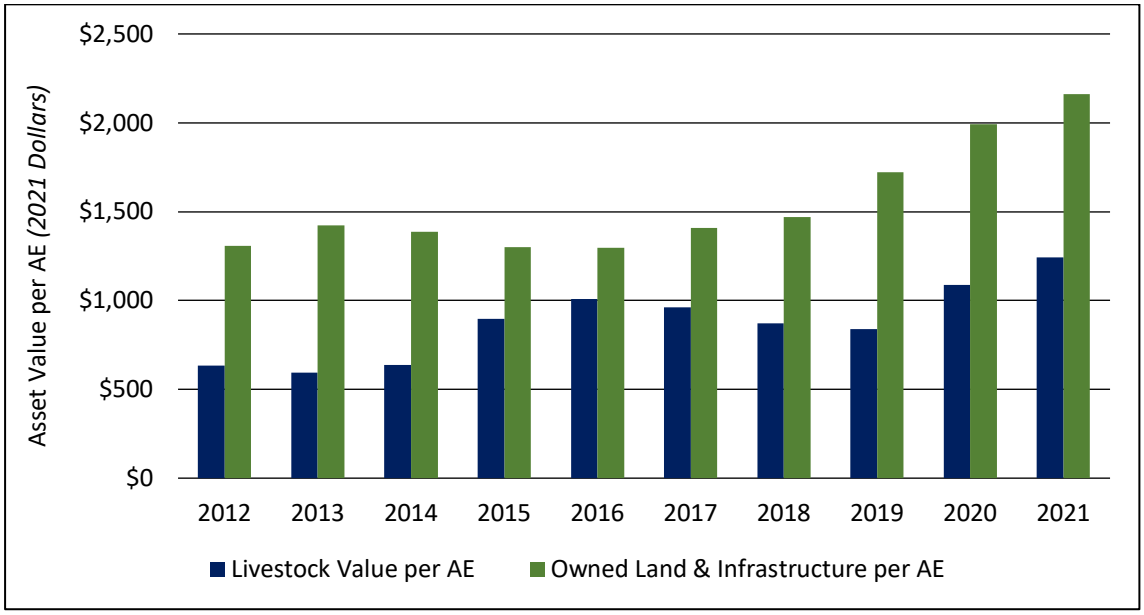

Figure 8: Average land and livestock values per AE - Whole Group

While the different asset values have a significant bearing on the level of operating return over time and explain differences in operating return between businesses, the strong correlation between operating profit per animal and operating return cannot be understated. Figure 9 illustrates this relationship by showing long-term average EBIT per AE and the respective long-term average Return on Assets Managed of business units. As operating profit increases there is a clear increase in profitability, emphasising the importance of maintaining an unrelenting focus on maximising per animal unit profit in order to maximise operating return in the long term.

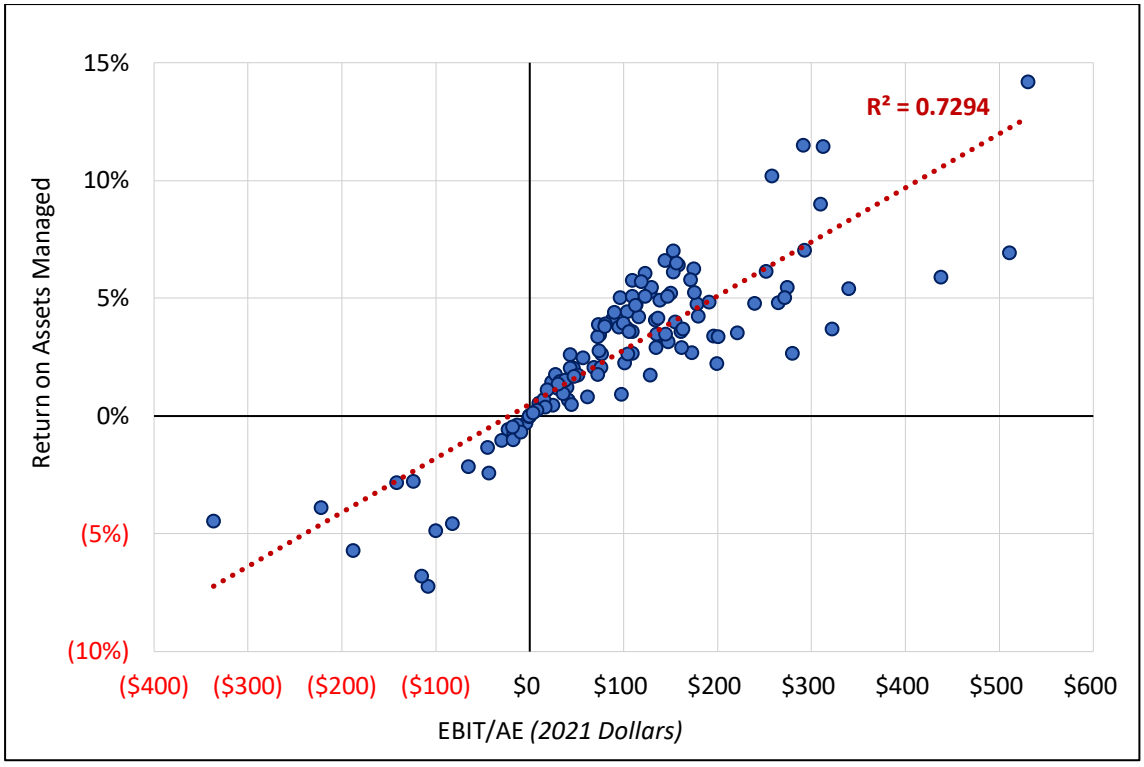

Figure 9: Relationship between EBIT per AE and Return on Assets Managed - Whole Group

Figure 10 shows the relationship between the operating scale of enterprises and the long-term average Return on Assets Managed. The data shows that good operating returns can be achieved at most levels of scale, however the majority of business units with negative returns over the long-term, operate under-scale (ie less than 10,000 AE for a pastoral company business unit). The chart highlights the importance of having sufficient scale to achieve business profitability, however it is also shows that operating return does not continue to increase with scale (beyond the point of sufficient scale). Some enterprises with very large scale achieve low or negative long-term average returns, perhaps attributable to diseconomies of scale. There is, however, a narrower range in profitability of businesses with scale greater than 20,000AE.

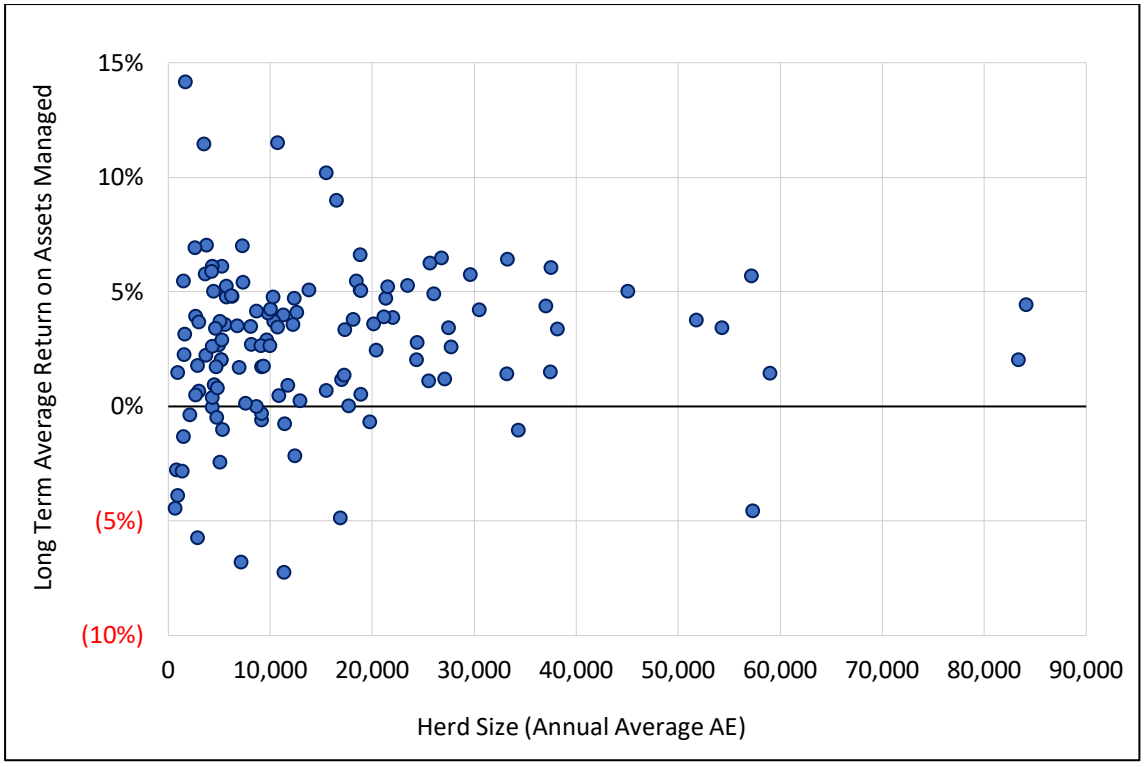

Figure 10: Relationship between operating scale and Return on Assets Managed

5.2.2 Gross Profit (Income)

A key observation of the average herd income statement (page 4 of Appendix 1) is the long-term increase in gross profit (income) per AE. The level of gross profit (calculated as Sales less Purchases, +/- Inventory Change) is a function of herd productivity (kg beef produced per AE) and income (gross profit) per kilogram produced - which is different to average sales price per kilogram sold, however the two measures are similar.

The increase in average gross profit of the group over the long term is almost entirely attributable to an increasing average sales price received across the period analysed, as shown in Figure 11 below. While average sales price does have a strong influence on gross profit across years, it does not separate better performing companies and stations from others in a given period, since all producers are more or less facing the same market. This point is elaborated on in the below section. Average herd productivity of the group has remained arguably low over the 10 years, averaging below 100kg/AE every year since 2012. The improvement in income over the period analysed is attributable to increased beef prices, not improved productivity.

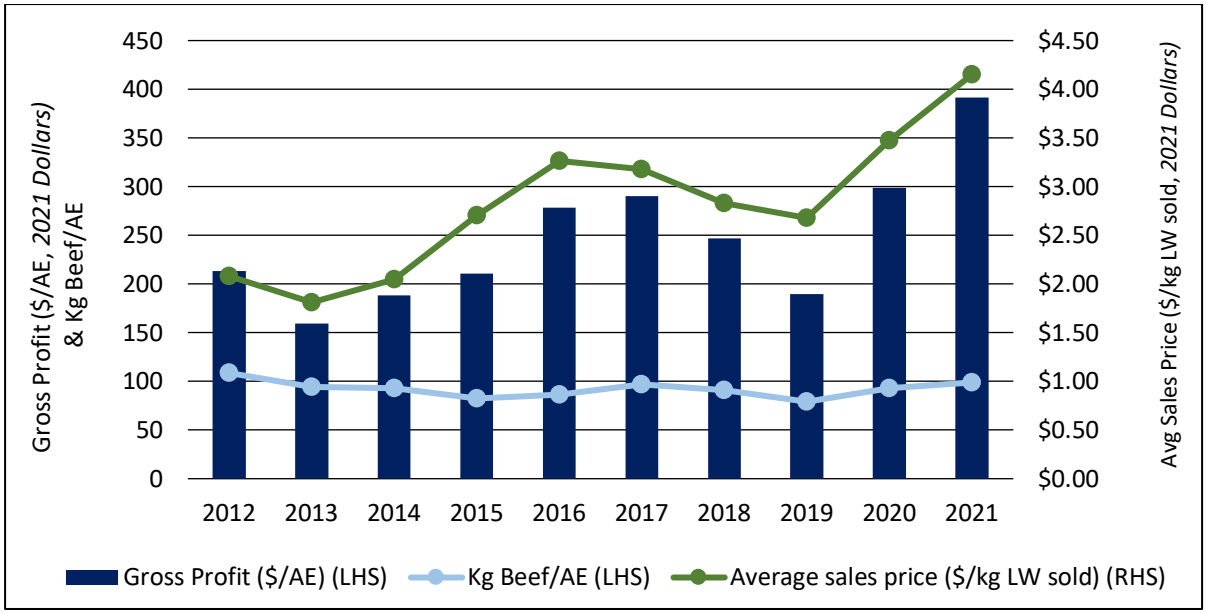

Figure 11: Gross profit, average sales price and herd productivity (all enterprises)

After spiking in 2019, average cost of production in the group has decreased in successive years to return to long term average levels in 2021 (refer to Figure 12). This is a result of increased herd productivity and a decrease in enterprise expenditure in these years. Average cost of production across the last four years of analysis has remained at higher levels than those of earlier years.

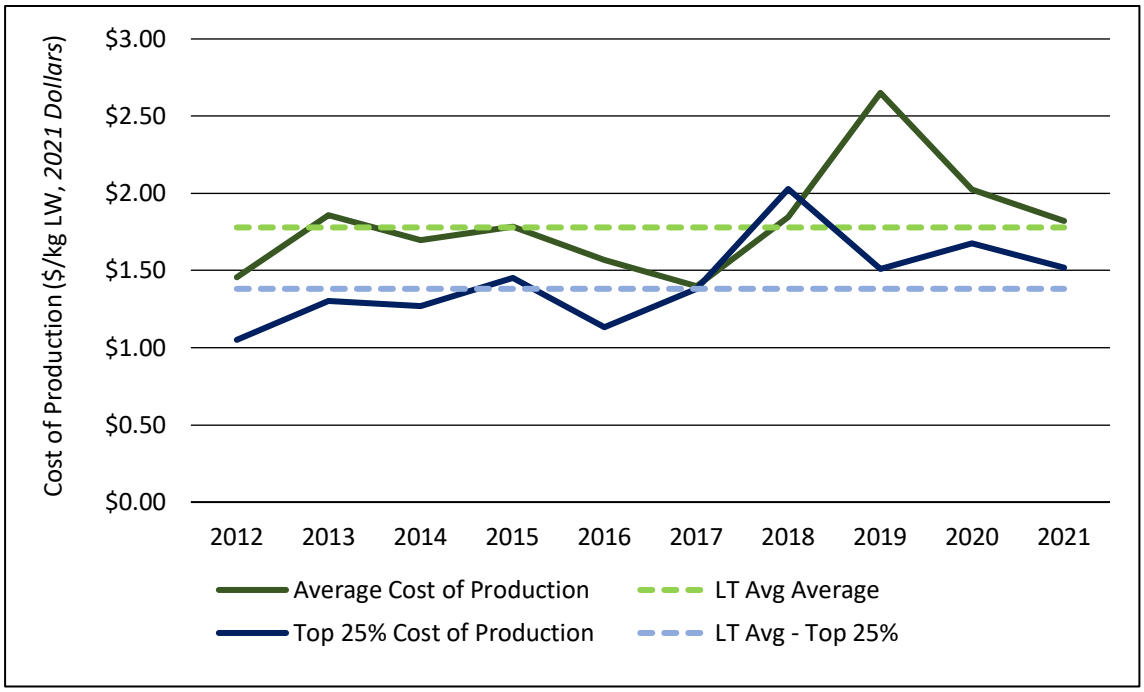

Figure 12: Cost of production - all enterprises (Average versus Top 25%)

5.2.3 Enterprise Expenses

The group average level of herd-related enterprise expenditure has varied greatly across years from $56 to $106 per AE. As Figure 13 below illustrates, despite a small decrease in the last two years of analysis, there has been a significant uplift in enterprise expenditure per AE in years 2018 to 2021.

Most of this increase is attributable to increased agistment, fodder and supplements expenditure. The level of herd expenditure did decrease in 2020 and 2021, as a result of a reduced need for drought management expenditure that spiked in 2019. Over the ten years analysed, agistment, fodder & supplementation has made up a growing proportion of herd expenditure, increasing from 20-30% of total enterprise expenditure in the first five years analysed, to over 40% across years 2017 to 2021.

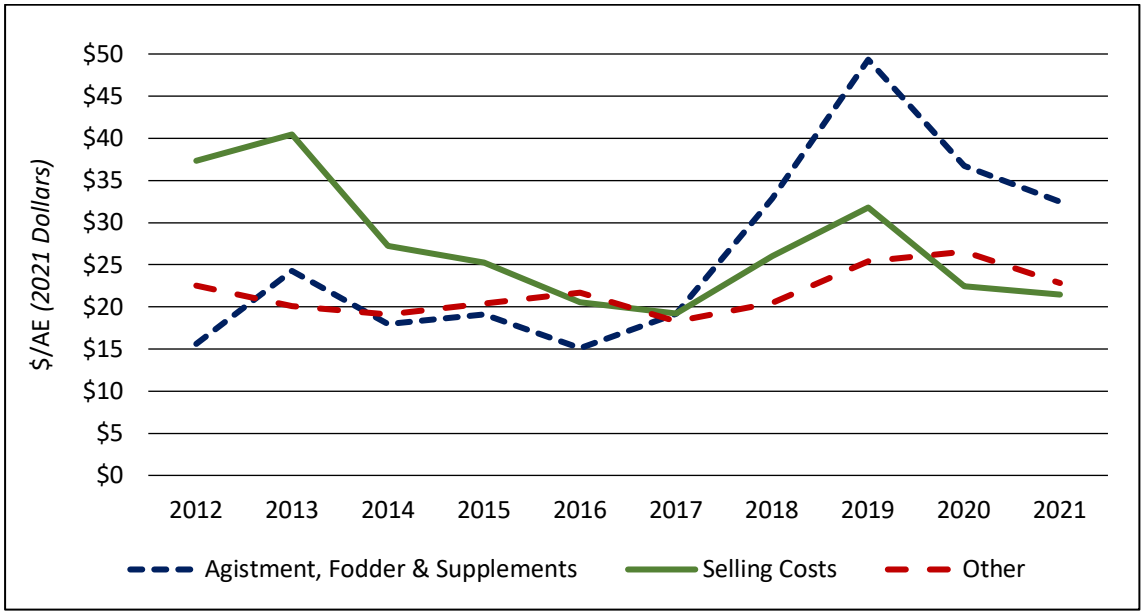

Figure 13: Whole group average enterprise expenditure per AE (all enterprises)

Figure 13 shows that selling costs per AE have been trending down over time. Looking further into the data, this is driven by a reduction in selling costs for breeding enterprises across the group. The average selling costs for breeding businesses in the last three years is lower than the long-term average. There is no downward trend in turnover (head sold/ average head carried) for the breeding enterprises over time, which indicates the reduction is due to reduced selling costs per animal sold (freight, fees, commission etc.).

5.2.4 Overhead Expenses

There has been a long-term increase in the average overhead expenses of the group, particularly in the latter half of the analysis, with average overheads increasing from around $80/AE during 2015 to 2017 to over $100/AE in years 2019 to 2021, as shown in Figure 14 below. Note, these financial data have inflation removed.

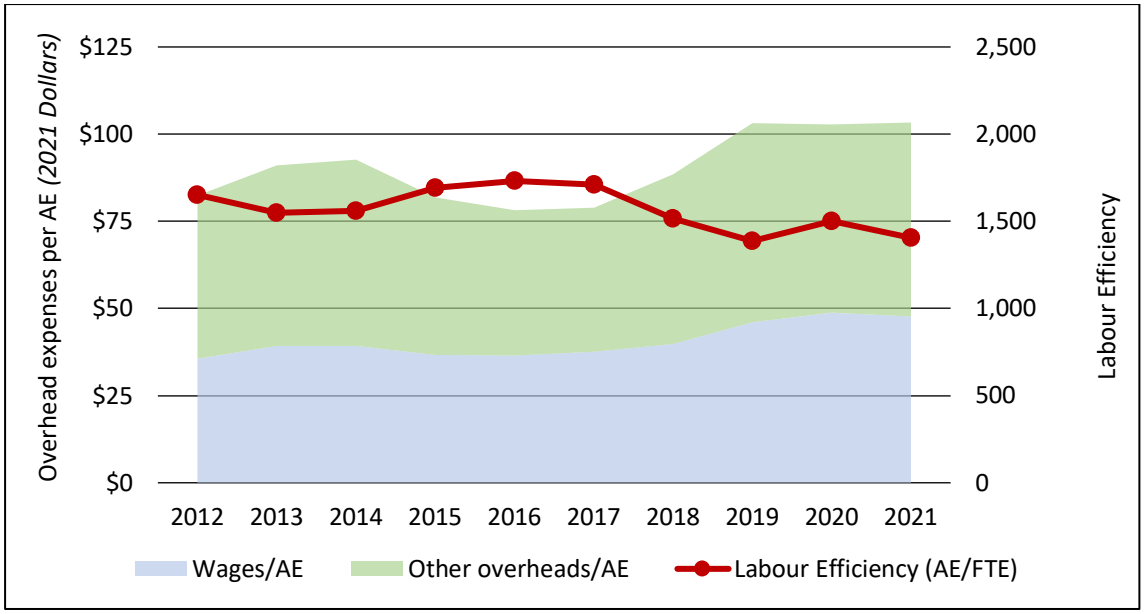

Figure 14: Whole group overhead expenditure per AE and labour efficiency (all enterprises)

The increase in overheads has been accompanied by a long-term decline in average labour efficiency of the group, after reaching around 1,700 AE/FTE across 2015 to 2017, as Figure 14 illustrates. This reduction in labour efficiency has occurred alongside the increase in both wages and other overheads per AE. This suggests that reduced labour efficiency has contributed to the increase in overheads, by way of higher wage expense per AE and an increase in other overheads associated with labour. There has been a significant rise in average wages expense to a 3-year average of $48 per AE (2019 to 2021). By contrast, the weighted average wages expense across 2012 to 2018 was $38 per AE. Considering that wages over the long term have comprised 45% of overheads and 25% of total operating expenditure of the group, the significance of wages warrants close attention and further discussion.

The decline in labour efficiency shows that more labour is used relative to the number of AE managed. Along with the decline in labour efficiency over the long term, there has also been a corresponding increase in the cost of labour. Figure 15 below shows the average wage per employed FTE of the pastoral company group over time. Average wage expense of the dataset remained fairly stable at around $67,000/FTE across 2012 to 2018, however in the most recent three years of the analysis, there was a significant increase in wages expense per employed FTE to average around $75,000/FTE across 2019 to 2021.

Figure 16 expresses this average pastoral company wage, alongside the national average annual wage across all industries over the same period (using data obtained from the Australian Bureau of Statistics). Both average wages are expressed in real terms (2021 dollars) and indexed (with 2012 average wages indexed to 100) to show their relative change. This comparison shows that across the first eight years of analysis, wages of the group were growing approximately in line with wages in the broader economy. The increase in wages per FTE in 2020 may have been a consequence of the labour supply issues that came about as a result of the COVID-19 pandemic, including reduced availability of backpacker labour. The sharp increase in pastoral company wages in 2020 was more pronounced than the modest rise in national average wages, however the reversion to historical levels in 2021 supports the fact that over the long term, the changing cost of labour has largely been consistent with changes in the wages across the broader economy.

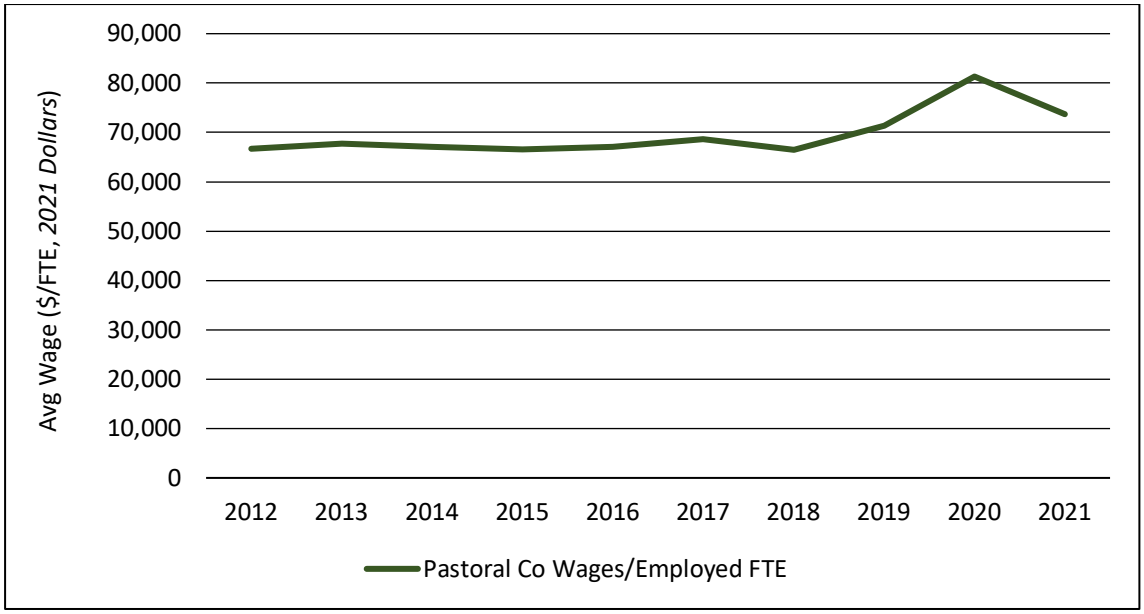

Figure 15: Average pastoral company wage per employed FTE

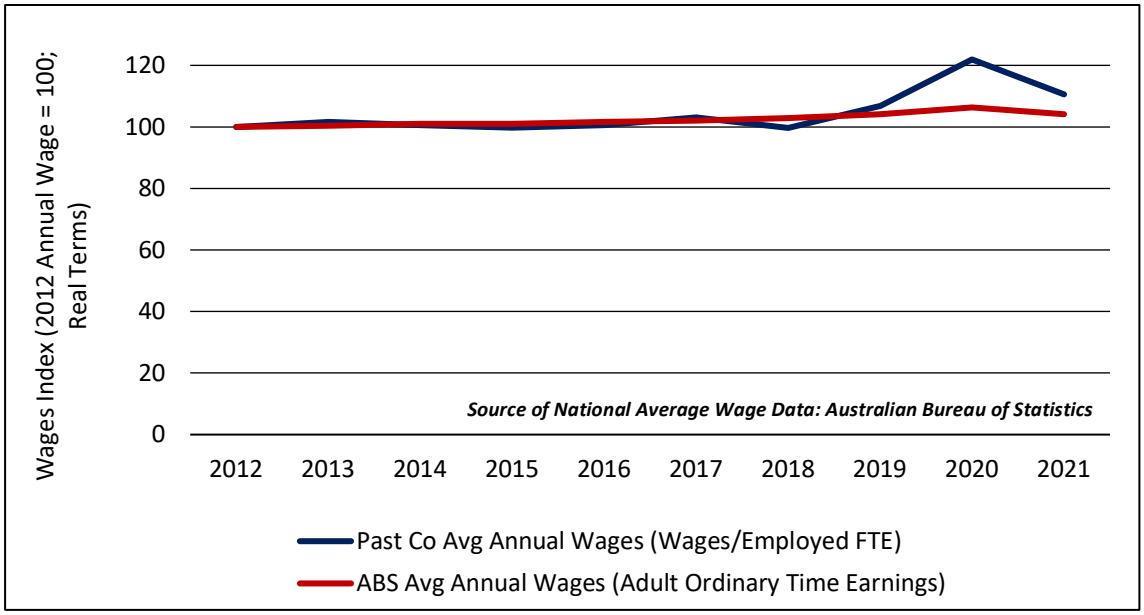

Figure 16: Index of average pastoral company wage/employed FTE and ABS average annual wage

The above points highlight that while the average cost per unit of labour has increased, more labour is also being utilised to manage herds on average. While both of these factors have contributed to an increase in average wages expense over the period analysed (on both a total and per AE basis), it is important to note that the cost of labour is largely a function of macroeconomic factors outside of the control of beef businesses. The labour efficiency of the business unit is a function of the production system, among other factors such as station infrastructure. It has significant influence on the overhead cost structure of the business unit.

5.2.5 Discussion around the increase & change in composition of operating expenditure

Much of the increase and change in composition of enterprise expenses over time has been due to the effect of drought management expenditure in recent years. An element of increase is also likely to pertain to a high cattle market, where a greater level of discretionary herd expenditure can be economically justified to increase marginal returns. Better performing businesses have still maintained lower cost of production throughout times of high prices by having a competitive level of effectively targeted herd expenditure that delivers returns through improvements to herd productivity (see section on company comparison).

In a time of high prices, a key question should be considered: how easily will operating expenditure be able to be reduced when market prices do subside – particularly overhead expenses? While higher levels of herd expenditure may be justified by herd productivity gains, this equation may change if the cattle market declines and expenditure remains at current levels. Overhead expenses may be more challenging to reduce, given they are inherently more stable over time. Figure 17 below illustrates the change in average overhead and enterprise expenses per AE across time. It can be seen that on a per AE basis, enterprise expenses have been more volatile across this time compared to overhead expenses.

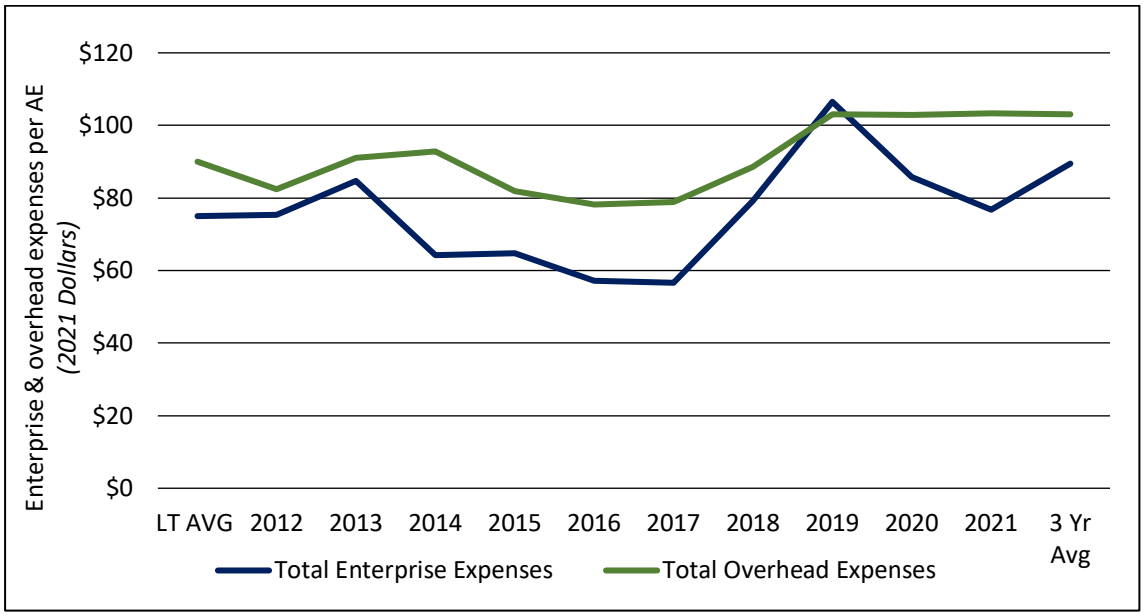

Figure 17: Whole group operating expenses per AE (all enterprises)

The numbers of AE managed will influence the level of overhead expenditure per AE. Figure 18 below, illustrates the fact that after initial decline in the early years of analysis, average AE numbers per business unit have been relatively stable each year.

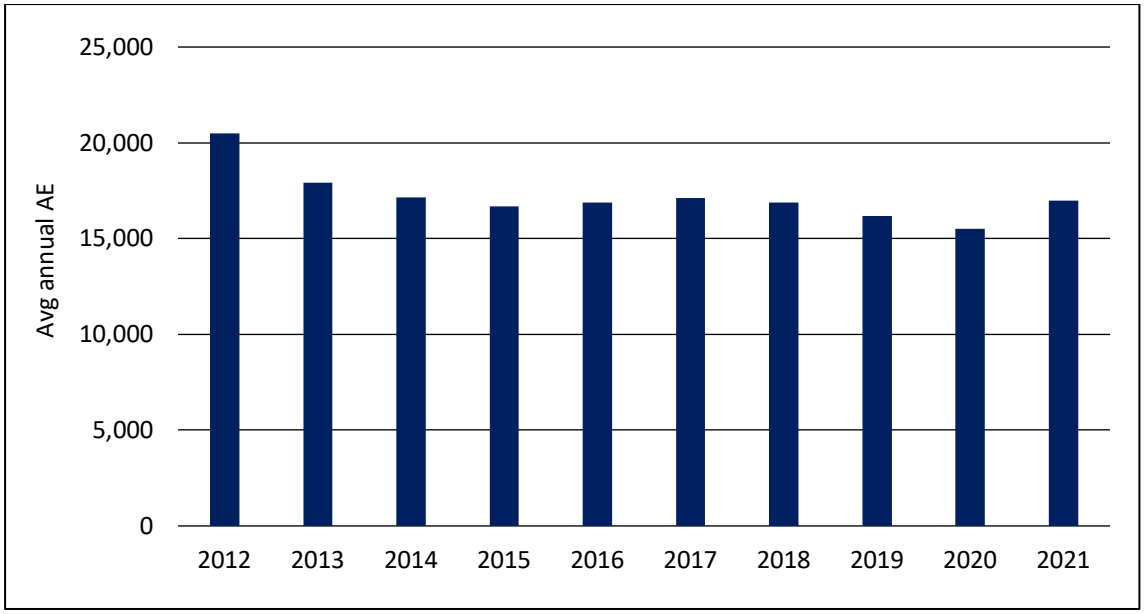

Figure 18: Average annual AE per business unit

5.3 Company Performance

A comparison of whole company average performance provides an insight into the long-term average performance of the group, which differs greatly between companies. While never directly comparable due to differences in geography, enterprise mix etc. between companies, it does provide a good indication of each company's performance relative to peers. Comparison of performance shows several key findings:

1. ***Better performing companies have a much lower cost of production than their peers.***

The strongest performing companies have an average cost of production under $1.80/kg LW produced.

2. ***Better performing companies have higher herd productivity.***

The strongest performing companies all have herd productivity over 100kg/AE. All other companies have herd productivity under 100kg. Herd productivity is the key driver of gross profit, primarily explaining the difference in income between business units and companies over the long term.

3. ***Average sales price received explains little, if any, of the difference in performance of the companies.***

Over the same time period captured in these averages, companies are receiving a similar average sales price.

4. ***Better performing companies don't necessarily have the lowest operating expenditure.***

Better performing companies have a competitive level of overheads and well-targeted enterprise expenses that improve herd productivity. While their lower cost of production reflects their good herd productivity, they achieve this through a cost base that is effective, not necessarily the lowest.

5.4 Enterprise (Herd) Performance

As detailed above, the herd/s of each business unit in the dataset are classified as one of the below enterprises:

- **Commercial Breeding** – self replacing breeding enterprises including all progeny through to turnoff;
- **Growing** – enterprises with dry animals brought in for weight gain and subsequent sale; and
- **Breeding & Growing** – enterprises that have both breeding animals and dry stock brought in, with these unable to be separated for analysis.

Over the last three years of analysis, breeding herds made up an average of over 70% of total AE of the whole dataset, hence the performance of breeding enterprises heavily influences weighted averages of the whole dataset (see Figure 19).

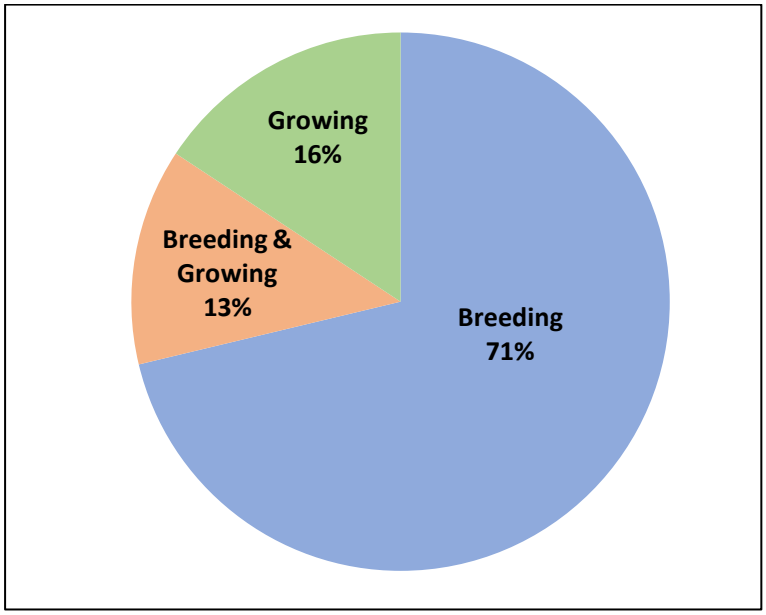

Figure 19: Proportion of total AE by enterprise (3-year average)

As shown in Figure 20, average operating profit over the ten years varied greatly between enterprise types, with the long-term average EBIT/AE of $152/AE for growing enterprises almost double the average of $78/AE for breeding enterprises. This difference in long term average is more pronounced than in earlier analyses, largely due to the strong performance of growing herds in recent years, which was driven by herd productivity improvements and increased prices.

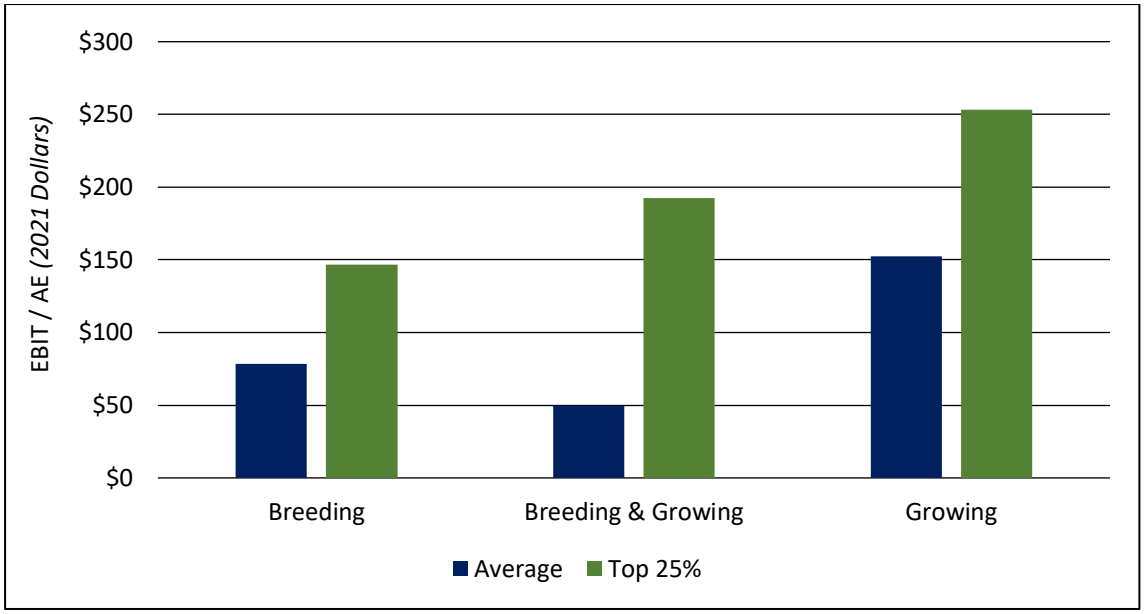

Figure 20: Average and Top 25% enterprise performance - EBIT/AE (10yr average)

The comparison of average ROAM in Figure 21 below, shows a much smaller difference between the performance of the enterprises when the value of the underlying land asset is considered. This reflects the typically higher productive capacity of much of the country utilised for growing enterprises, hence a higher land asset value. When considering land asset value, the difference in ROAM across enterprises is relatively smaller than the difference in EBIT/AE.

While growing enterprises have the highest average ROAM, the ROAM of the Top 25% performing breeding and breeding & growing enterprises exceeds the average ROAM of growing enterprises. This shows that a strong level of ROAM was achievable across all enterprise types. It also highlights the importance of a business pursuing the enterprise type that is best suited to the land type and location, and managing the chosen enterprise type to perform as best as possible.

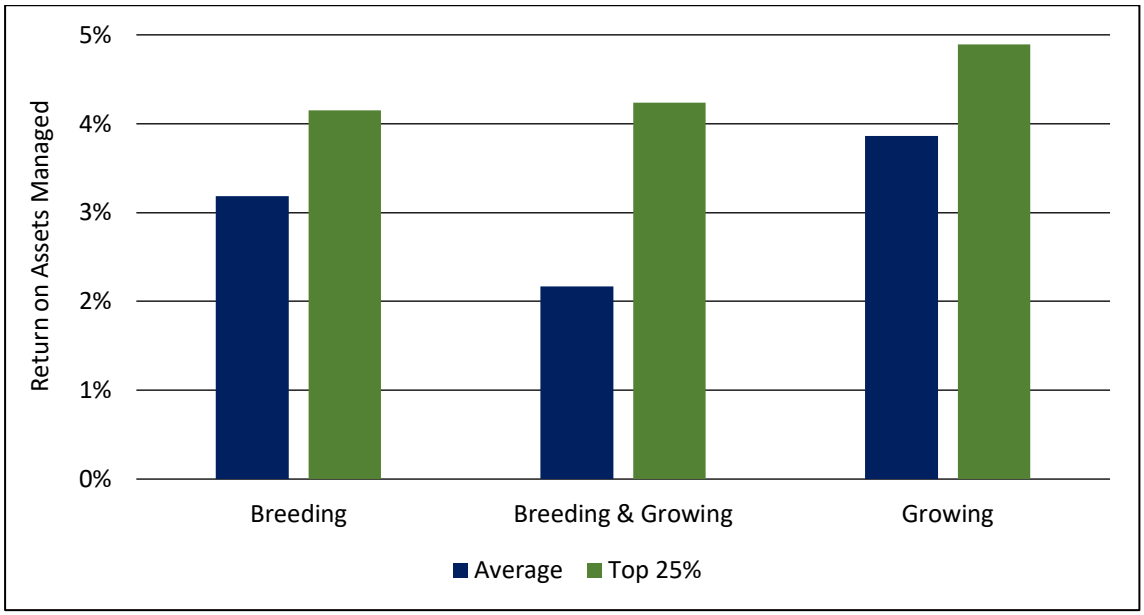

Figure 21: Average and Top 25% enterprise performance - Return on Assets Managed

There was significant variation in performances between enterprise averages across years, as shown in Figure 22 below. The performance of breeding herds was significantly affected in 2019 by drought and flooding - resulting in an average EBIT loss for breeding enterprises. Growing enterprises however maintained strong and improving performance across these latter years.

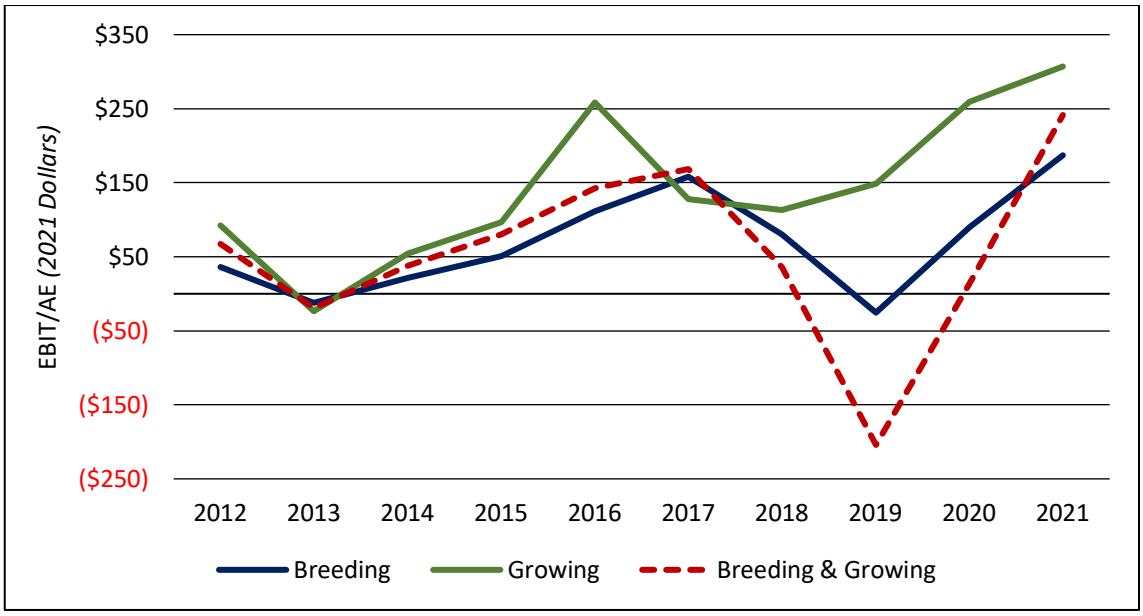

Figure 22: Average enterprise performance - EBIT/AE

5.4.1 Breeding

The performance of the Top 25% breeding enterprises (based on EBIT/AE) showed similar trends and volatility as the average breeding enterprise performance, however with a much higher level of operating profit each year. The long-term average herd income statements and performance measures (summarised below in Table 3), reveal some key factors separating the stronger breeding businesses from the average performing businesses (refer to pages 20-21 of Appendix 1 for the full reports).

Table 3: Long term performance - Average and Top 25% breeding enterprises

Breeding Enterprises – Long Term Averages (10 years)		
Herd Income Statement	**Average ($/AE)**	**Top 25% ($/AE)**
Sales	320	328
Purchases	(95)	(54)
Inventory Change	(3)	14
Gross Profit (Income)	**223**	**288**
Enterprise Expenses	64	58
Overhead Expenses	80	83
Total Operating Expenses	**145**	**141**
EBIT/AE	**78**	**146**
Performance Measures	**Average**	**Top 25%**
Avg Price Received ($/kg LW sold)	$2.77	$2.73
Cost of Production ($/kg LW produced)	$1.73	$1.33
Herd Productivity (kg beef/AE)	84	106
Reproductive Rate	65%	68%
Mortality Rate	5.8%	3.6%
Avg Turnoff Weight (kg/hd LW)	284	286
Labour Efficiency (AE/FTE)	1,685	1,682

A significantly higher gross profit (income) was achieved by the Top 25% breeding businesses over the long term, despite the level of sales per AE being similar. For the better performing breeding businesses, the kilograms turned off tend to be the kilograms that are produced, rather than brought in livestock that are turned over. This is evident in Table 3 above, where there is minimal difference in total sales per AE between the Top 25% performers and the Average ($328 vs. $320) compared to the difference in herd productivity (106 Kg Beef/AE vs. 84). The purchases of the Top 25% are slightly over half that of the Average ($54 vs. $95) and the herd inventory of top performers increased on average, whereas the Average decreased. This shows that the sales of the average performer comprised more purchased animals and a sell down of inventory. On the other hand, the sales of the top performers were of less purchased animals, no inventory reduction and a higher turnoff of animals and kilograms produced.

Average sales price received did not explain any of the difference in income, since the Top 25% received a slightly lower sales price on average. The higher level of gross profit for Top 25% businesses is primarily driven by a much stronger and more consistent level of herd productivity over the ten years, as shown in Figure 23. This was achieved primarily through higher reproductive rates and lower mortality rates, with average turnoff weight similar for both groups (these are the three drivers of breeding herd productivity). These three productivity drivers explain 80% of the difference in productivity between breeding herds (McLean et al. 2018, McLean et al. 2020).

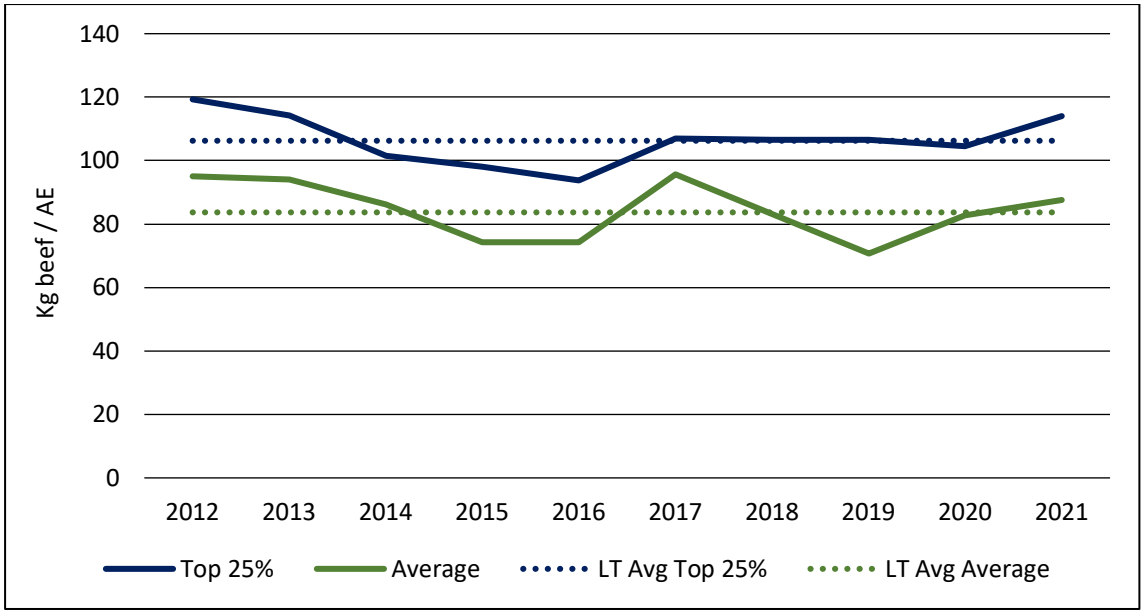

Figure 23: Herd productivity of breeding enterprises (kg beef/AE)

The Top 25% breeding businesses had a lower level of enterprise expenses over the long term, suggesting that their discretionary herd expenditure was more effectively targeted - reflected in their higher herd productivity. This is a consistent feature of top performing businesses.

Average overhead expenses were similar for the two groups. This is a function of average labour efficiency being equivalent for both and the fact that average scale (annual AE numbers) of both groups was sufficient for a competitive overhead cost base (ie having sufficient economies of scale).

While the Top 25% had a similar level of total operating expenses to the average breeding business, their cost of production is much lower (see Figure 24), as a result of producing more kilograms with that level of expenditure. This highlights a key distinction between the two groups: the better performing breeding businesses consistently have more productive herds that produce higher income per AE at a lower cost of production. They do not necessarily have the lowest operating expenses.

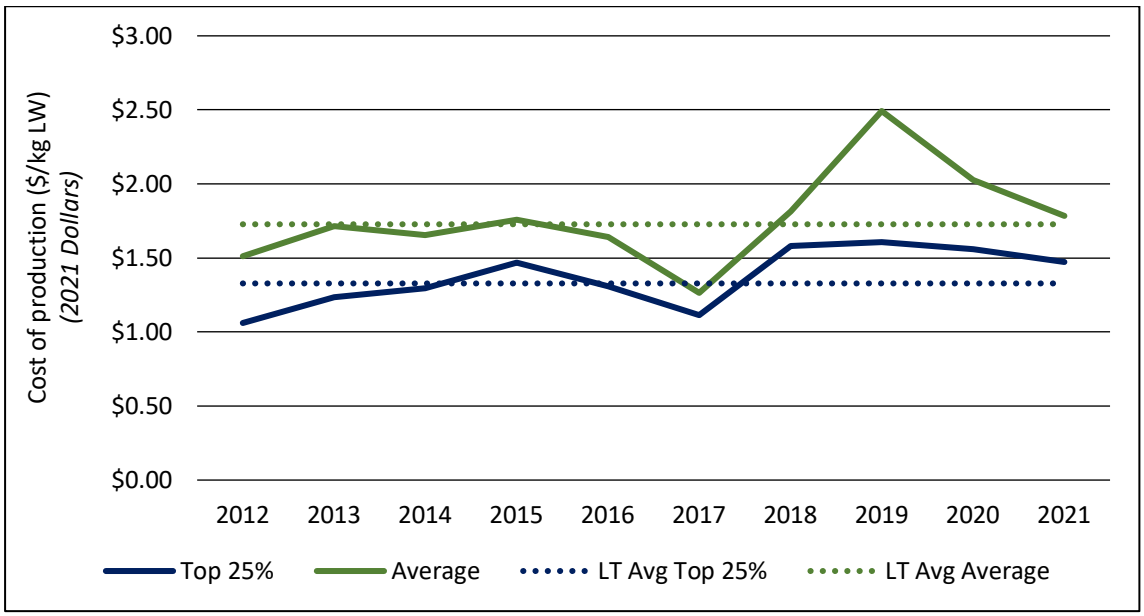

Figure 24: Cost of production ($/kg LW produced) for Breeding enterprises

The waterfall chart in Figure 25 below compares the 3yr average EBIT/AE of the Top 25% breeding businesses with the average breeding business. Average breeding businesses had an EBIT of $76/AE, while the Top 25% recorded an average EBIT of $183/AE during this time. The chart shows a relative breakdown of differences in EBIT into its various components. When comparing these more recent 3-year averages (2019 to 2021), the same observations can be made as found when interpreting long term average data above. The majority of the difference in performance can be explained by higher herd productivity in the Top 25% businesses, and to a lesser extent a higher level of income per AE for the Top 25% in this timeframe. Better performers also had a lower level of enterprise expenses per AE, but a higher level of overhead expense per AE, which reduced the difference in performance.

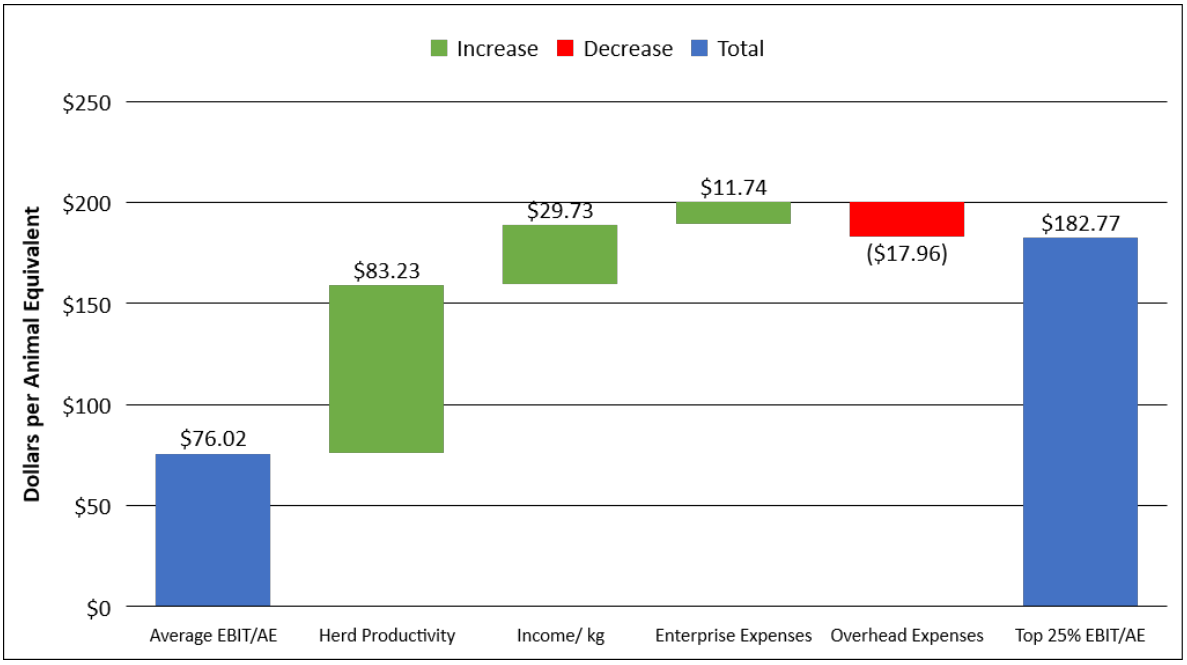

Figure 25: Waterfall Chart - Difference in 3yr avg of EBIT/AE of Average and Top 25% Breeding enterprises

5.4.2 Growing

The growing enterprise average performance was strong across the ten years, having the highest enterprise EBIT per AE in eight out of ten years (as shown in Figure 22), and with an average EBIT loss for growing enterprises only arising in one year (2013). The enterprise average EBIT showed significant improvement across 2019 to 2021 to reach very high levels. The performance of top growing businesses over the ten-year period was underpinned by a combination of higher herd productivity and much lower operating expenditure. A performance summary of the Top 25% growing enterprises and the Average of growing enterprises is shown in Table 4 below.

Table 4: Long-term performance - Average and Top 25% Growing enterprises

Growing Enterprises – Long Term Averages (10 years)		
Herd Income Statement	**Average ($/AE)**	**Top 25% ($/AE)**
Sales	1,166	1,388
Purchases	(771)	(927)
Inventory Change	(18)	(22)
Gross Profit (Income)	**377**	**440**
Enterprise Expenses	106	90
Overhead Expenses	119	96
Total Operating Expenses	**224**	**186**
EBIT/AE	**152**	**253**
Performance Measures	**Average**	**Top 25%**
Avg Price Received ($/kg LW sold)	$2.97	$2.94
Cost of Production ($/kg LW produced)	$1.85	$1.34
Herd Productivity (kg beef/AE)	121	139
Mortality Rate	3.8%	2.7%
Avg Turnoff Weight (kg/hd LW)	358	379
Labour Efficiency (AE/FTE)	1,307	1,720

Top 25% enterprises achieved a higher average gross profit which arose from considerably higher sales per AE, which was partially offset by a higher level of purchases. The higher gross profit was a product of much better herd productivity.

Top 25% growing enterprises had a much lower level of operating expenditure, which also explained much of the difference in operating profit. This differs to what was observed in the breeding enterprises, where operating expenses per AE were similar between the Average and Top 25%. Better performing growing businesses had lower enterprise expenses, while maintaining stronger herd productivity. They also had much lower overhead expenses per AE, which is primarily a function of the better labour efficiency of Top 25% enterprises that can be seen in Figure 26. Both groups had similar average enterprise scale. Figure 26 also demonstrates that the average labour efficiency of all growing enterprises has seen a long-term decline over the period, which would partly explain the increase in overheads during that time, as shown in Figure 27.

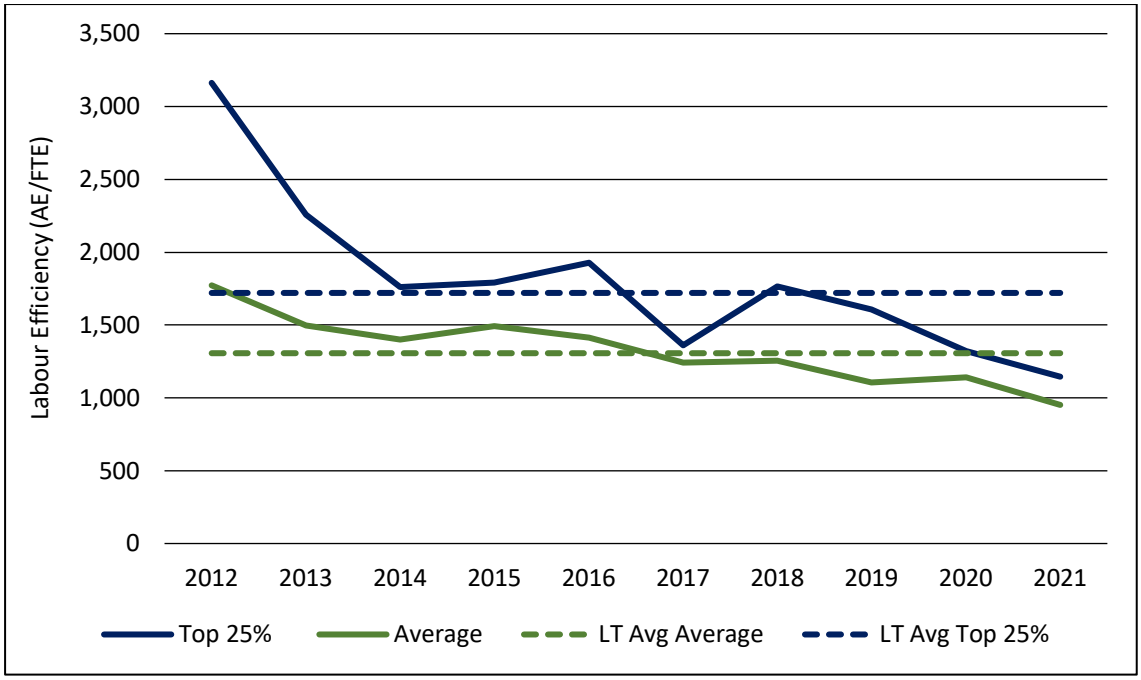

Figure 26: Labour Efficiency - Average and Top 25% Growing Enterprises

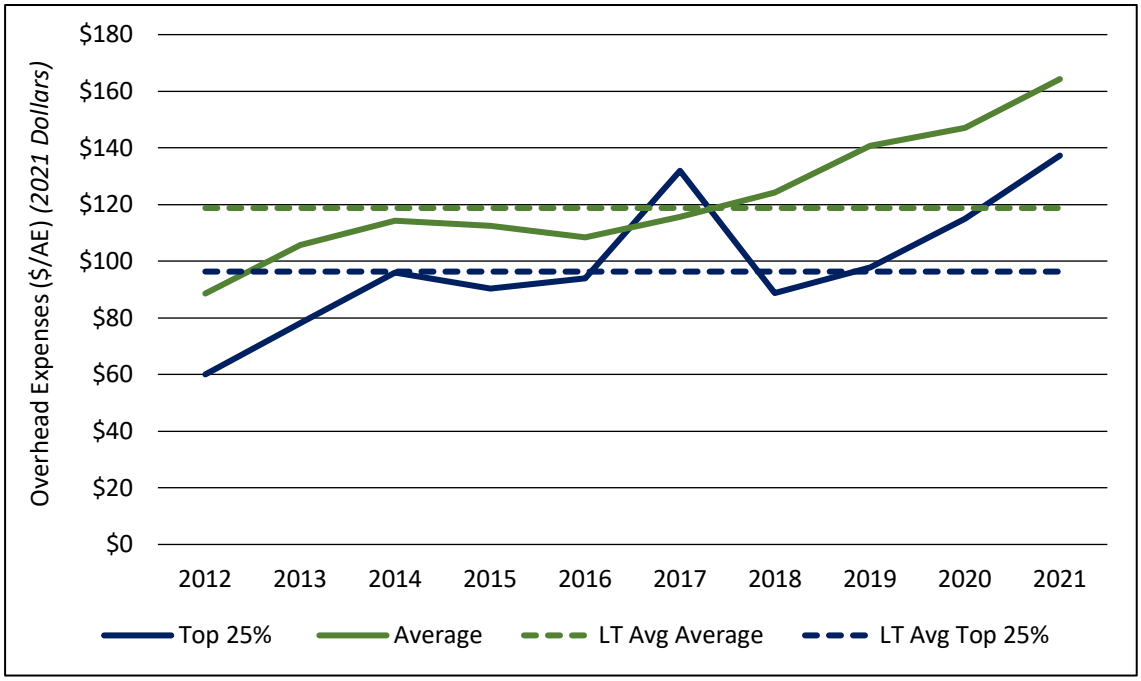

Figure 27: Overhead expenses per AE - Average and Top 25% Growing businesses

The differences in herd productivity and total level of operating expenditure led to the Top 25% growing businesses having a much lower cost of production, as shown below in Figure 28.

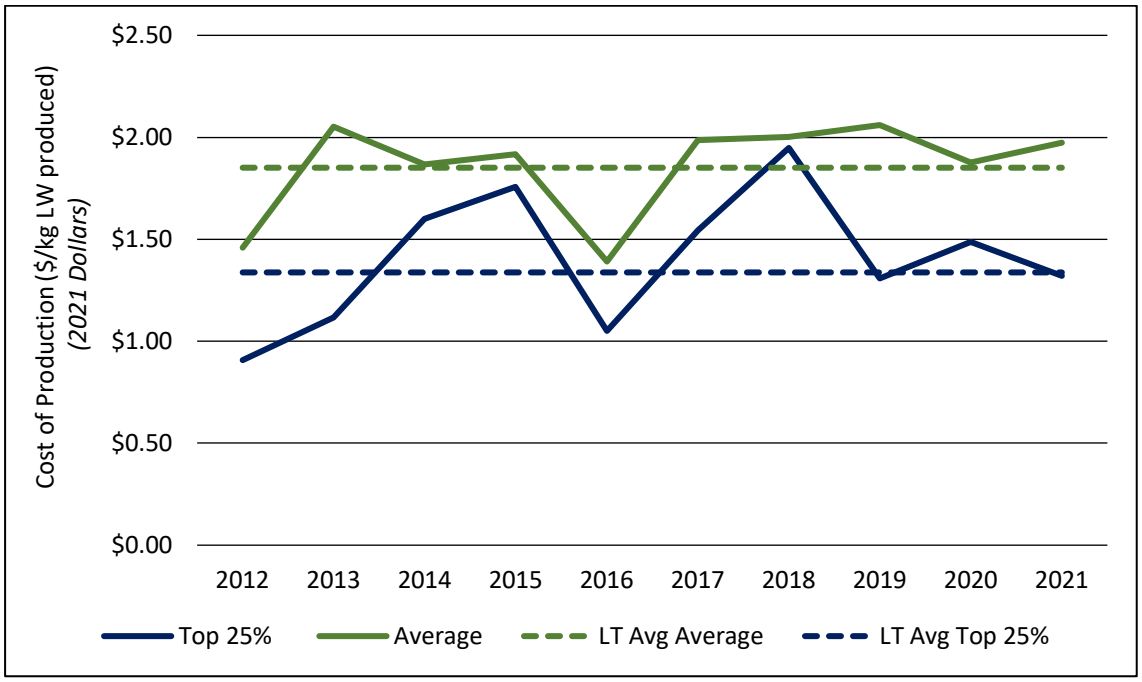

Figure 28: Cost of Production - Average and Top 25% Growing enterprises

Some trends have emerged around the average purchase and turnoff weights of growing enterprises across the analysis. For the first eight years of the analysis, purchase weights of the Top 25% growing enterprises were higher than that of average enterprises at around 260kg to 300kg. While average purchase weights of all growing enterprises have remained relatively stable across all ten years, in later years the average purchase weights of the Top 25% decreased significantly (3yr average 2019 to 2021 of 223kg). This is evident in Figure 29 below.

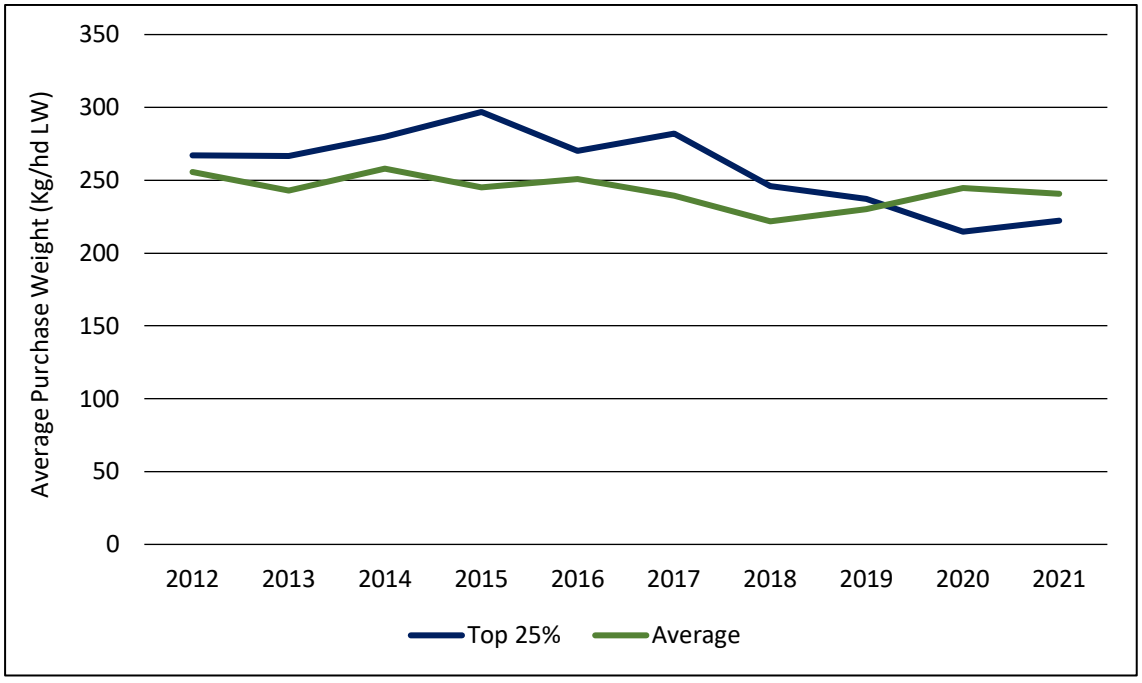

Figure 29: Average purchase weight - Average and Top 25% Growing businesses

Average turnoff weights have also changed in more recent years, as illustrated in Figure 30. Up until 2018, average turnoff weights of the Top 25% and Average were very closely matched in a range of 340kg to 400kg. During 2019 to 2021 however, a large divergence arose, where the average turnoff weight of Top 25% growing enterprises jumped to a level much higher than enterprise average (which had been trending down to around 330-350kg across 2019-2021). This may be an effect of a higher cattle market, where as the cattle market rose, businesses that brought in lighter animals and turned off heavier animals were in a better position to capitalise on the high market. It may also be the effect of a changing composition of the Top 25% cohort.

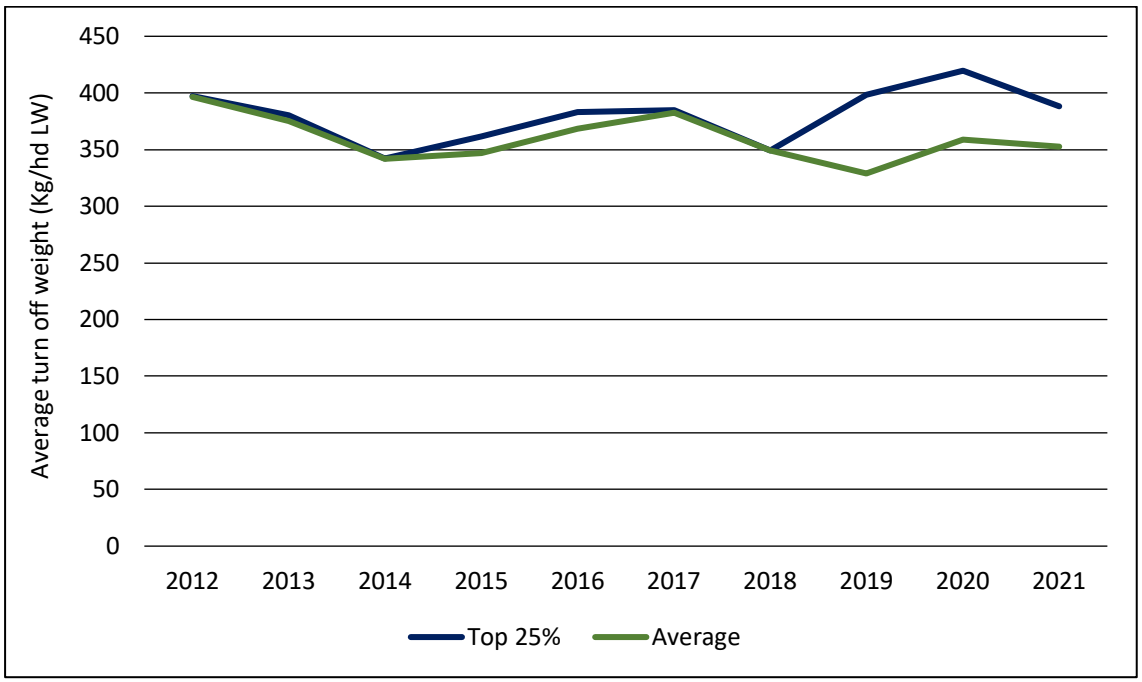

Figure 30: Average turn off weight - Average and Top 25% Growing businesses

Comparison of 3yr average (2019 to 2021) EBIT/AE of the Average and Top 25% growing enterprises in Figure 31 below, illustrates that most of the difference in performance was attributable to a much higher herd productivity for the Top 25% cohort. Lower enterprise and overhead expenses per AE also contributed to the better performance, along with a slightly higher income per kg produced.

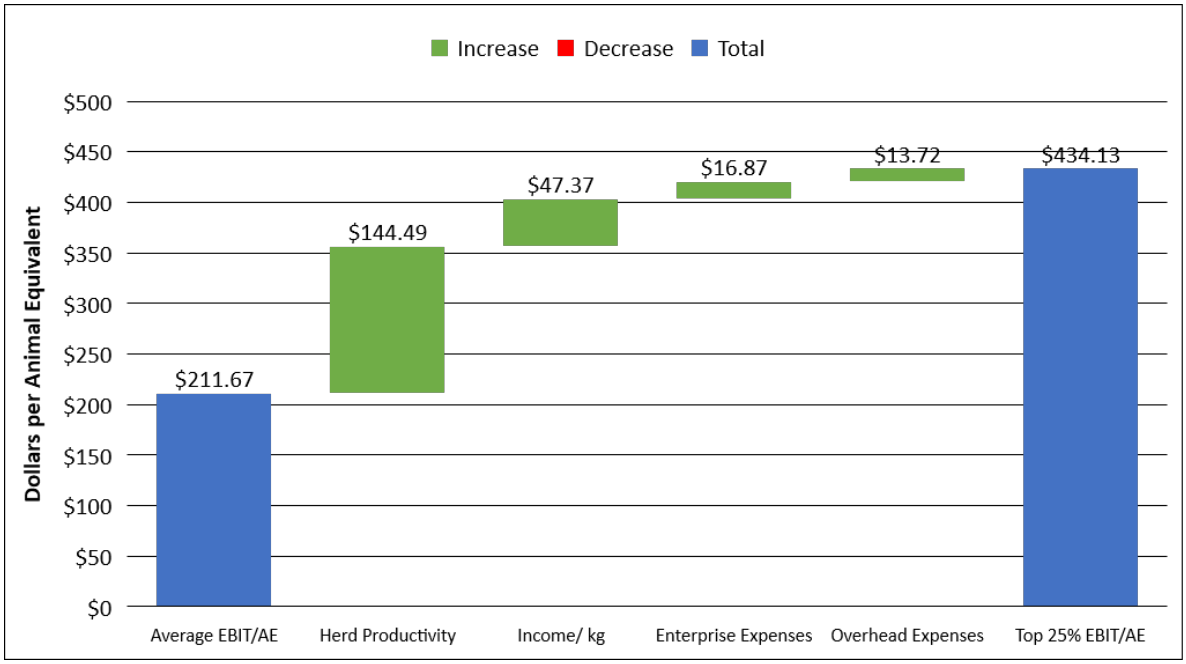

Figure 31: Waterfall Chart - difference in 3yr average EBIT/AE of Average and Top 25% Growing enterprises

As a result of better herd productivity and stronger labour efficiency, the Top 25% growing businesses consistently produced more tonnes of beef per FTE (see Figure 32), meaning they had greater production relative to the labour utilised. This measure relates the amount of labour utilised in the beef herd to the scale and productivity of the herd. The average tonnes produced per FTE has been relatively stable at around 150 tonnes per FTE, over the period analysed. This shows that although average herd productivity in growing herds improved during the ten years, it was offset by the decrease in labour efficiency.

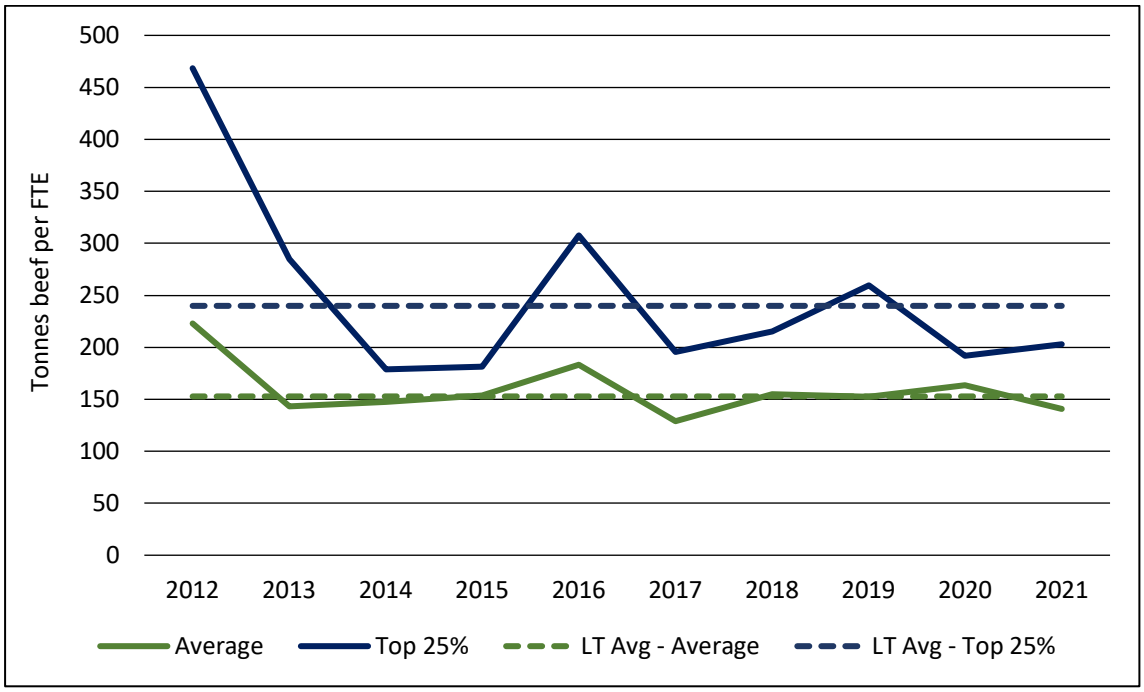

Figure 32: Average tonnes of beef produced per FTE - Growing enterprises

5.4.3 Breeding & Growing

There are limitations to interpreting the performance of breeding & growing enterprises, since the drivers of performance cannot be clearly attributed to breeding or growing component of the herd. There is also a wide range of operating models within the Breeding & Growing enterprise type, with different businesses having different compositions of breeding and growing within them. Figure 33 below shows the average and Top 25% breeding & growing enterprise operating profit over time.

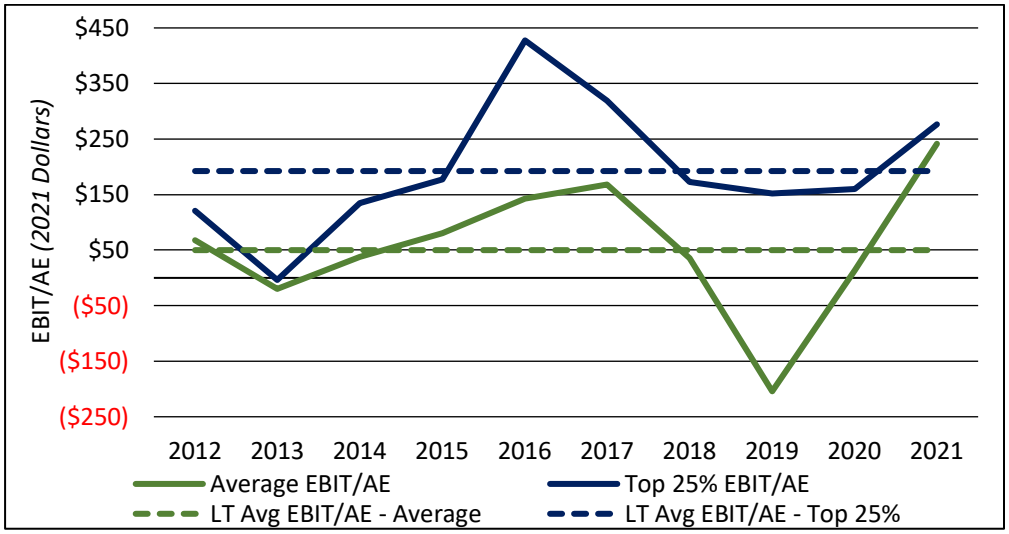

Figure 33: EBIT/AE – Average and Top 25% for Breeding & Growing enterprises

Of the enterprises classified as breeding & growing, similar themes emerged regarding the factors that separate better performers from the others over the long term. As shown in Table 5 below, The Top 25% had a much higher herd productivity than Average over the long term. This was driven by a higher reproductive rate, a lower mortality rate and a higher average turnoff weight.

Table 5: Long-term performance - Average and Top 25% Breeding & Growing Enterprises

Breeding & Growing Enterprises – Long Term Averages (10 years)		
Herd Income Statement	**Average ($/AE)**	**Top 25% ($/AE)**
Sales	510	648
Purchases	(236)	(289)
Inventory Change	(49)	5
Gross Profit (Income)	**225**	**364**
Enterprise Expenses	85	88
Overhead Expenses	90	83
Total Operating Expenses	**175**	**171**
EBIT/AE	**50**	**192**
Performance Measures	**Average**	**Top 25%**
Avg Price Received ($/kg LW sold)	$2.50	$2.70
Cost of Production ($/kg LW produced)	$1.88	$1.31
Herd Productivity (kg beef/AE)	93	131
Reproductive Rate	65%	68%
Mortality Rate	3.9%	2.5%
Avg Turnoff Weight (kg/hd LW)	334	358
Labour Efficiency (AE/FTE)	1,553	1,642

Comparison of the most recent 3-year average performance (2019 to 2021) shows that the higher EBIT/AE of the Top 25% breeding & growing enterprises was mostly explained by much higher herd productivity in the Top 25% (refer to Figure 34 below). The better performers also had much lower operating expenses that contributed significantly to the difference. A lower income per kg produced slightly reduced the performance of the Top 25% breeding & growing businesses.

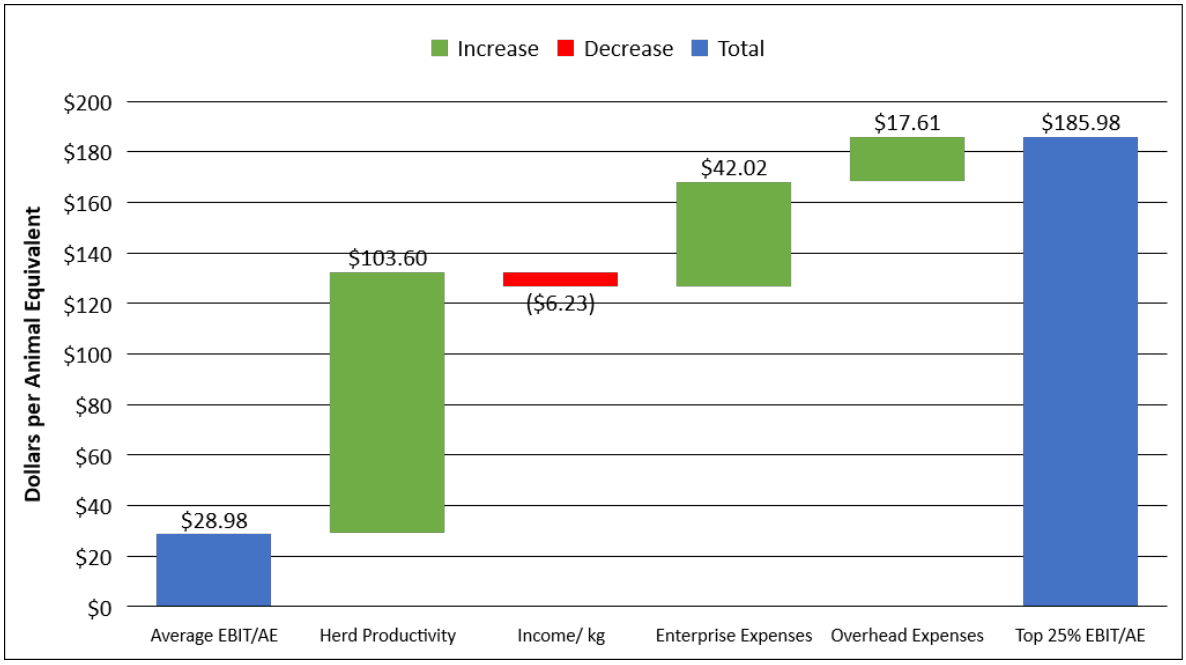

Figure 34: Waterfall Chart - Difference in 3yr avg EBIT/AE of Average and Top 25% Breeding & Growing enterprises

5.5Analysis of Business Units with 10 years of data.

There are just under 40 business units in the data set that have 10 years of data. Additional analyses of these business units were undertaken to look at what insights could be taken from these long-term data.

5.5.1 Internal Rate of Return

Internal Rate of Return (IRR) is a common measure of investment performance and 10 years of data is an appropriate timeframe for a long-term analysis to be undertaken. The IRR was calculated using modified internal rate of return (MIRR) excel formula with finance rate and reinvestment rate of 6%.

The calculations use annual cashflows, which were calculated as follows:

Net cashflow = Total EBIT + Depreciation - Inventory Change - Net capital expenditure

For the purpose of the calculation, it was assumed that all assets were purchased at the start of year one and sold at the end of year 10. Additional analysis was undertaken to determine the contribution of land value increase (net of fixed capital improvements) and the contribution of operation cashflows.

The average IRR across all business units analysed was 8%, consisting of 4.9% from land valuation and 3.1% from operating, as shown in Figure 35 below. Overall, the total IRR is higher than the applied finance cost rate of 6%. However, the appreciation of land value contributes nearly two thirds of total

IRR which means without land value increases the returns are not exceeding the applied cost of capital.

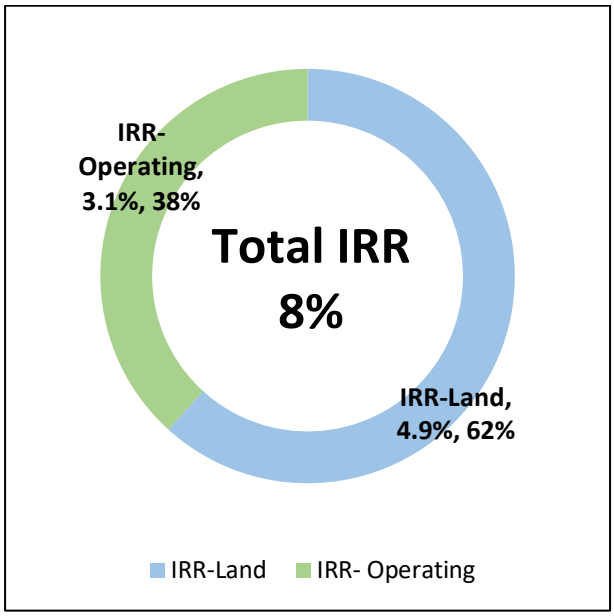

Figure 35: Total 10 years IRR

Figure 36 below shows us that the range of total IRR is between 3.2% to 12% and majority of business units (81%) have total IRR greater than 6%.

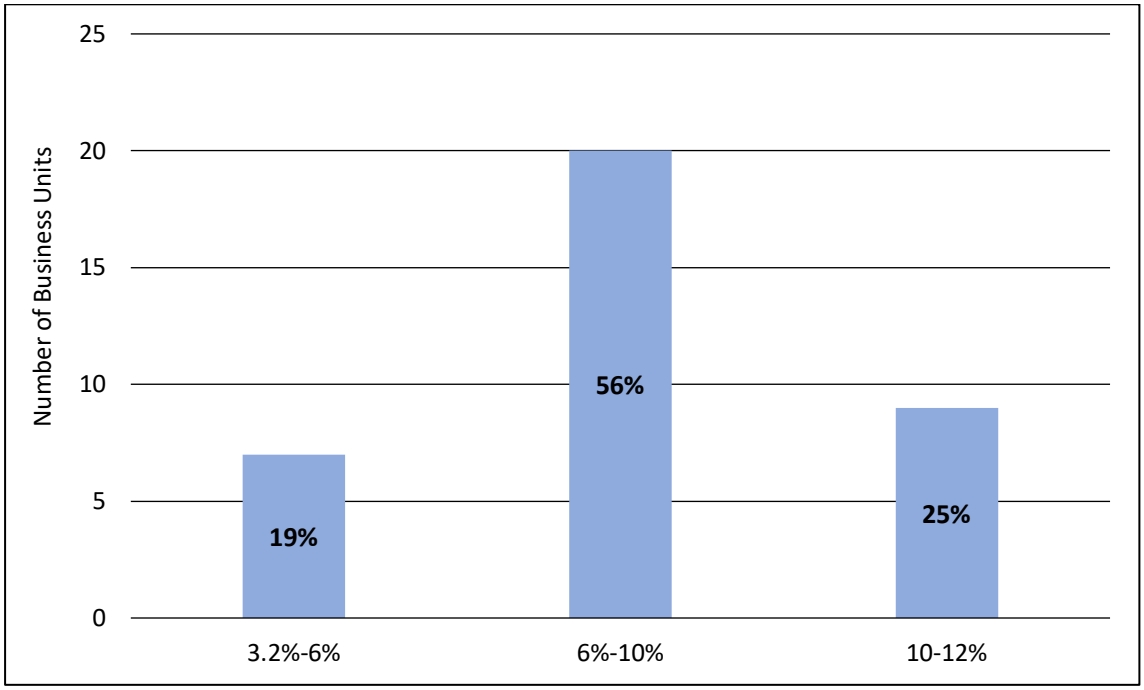

Figure 36: Total 10 years IRR distribution

5.5.2 Variation in profit and animal numbers between years

It is sometimes hypothesised that greater herd stability results in greater longer-term profits. This is a logical hypothesis, as better land condition and herd management would intuitively result in the ability to carry more stock through drier periods, and more appropriate stocking rates would help negate the need to sell-down rapidly.

A statistical analysis of the data from those businesses with 10 years of data was undertaken to test this hypothesis. Firstly, the variation in EBIT/AE, measured as the coefficient of variation, was related to itself (Figure 37). It shows that more variable EBIT/AE relates to lower long-term EBIT/AE.

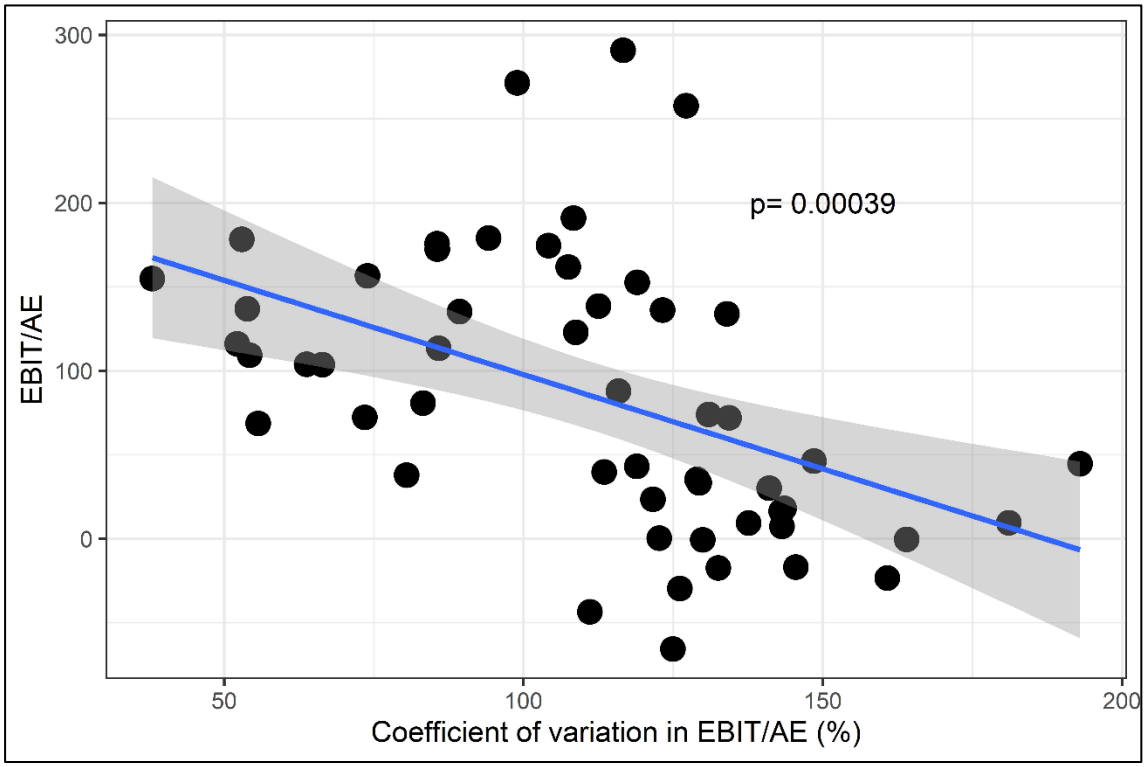

Figure 37: Relationship between EBIT/AE and its own coefficient of variation, with a p-value derived from a linear regression plotted in blue with a shaded standard error

However, we still cannot tell if lower variation in AE is associated with lower variation in herd numbers or other factors. We can test this by relating variation in AE carried to long-term EBIT/AE.

Figure 38 shows that almost none of the relationship between variation in EBIT/AE and its long-term value is attributable to variation in AE carried (p-value close to 1 indicates an almost perfectly flat line). So interestingly, we can conclude that almost none of the impact of less variable EBIT/AE on long-term EBIT/AE is attributable to variation in AE carried between years.

If herd numbers (AE carried) can't explain the result, then it must be down to productivity and/or price. Figure 39 shows some evidence of a negative relationship between the coefficient of variation in kg beef/AE and EBIT/AE.

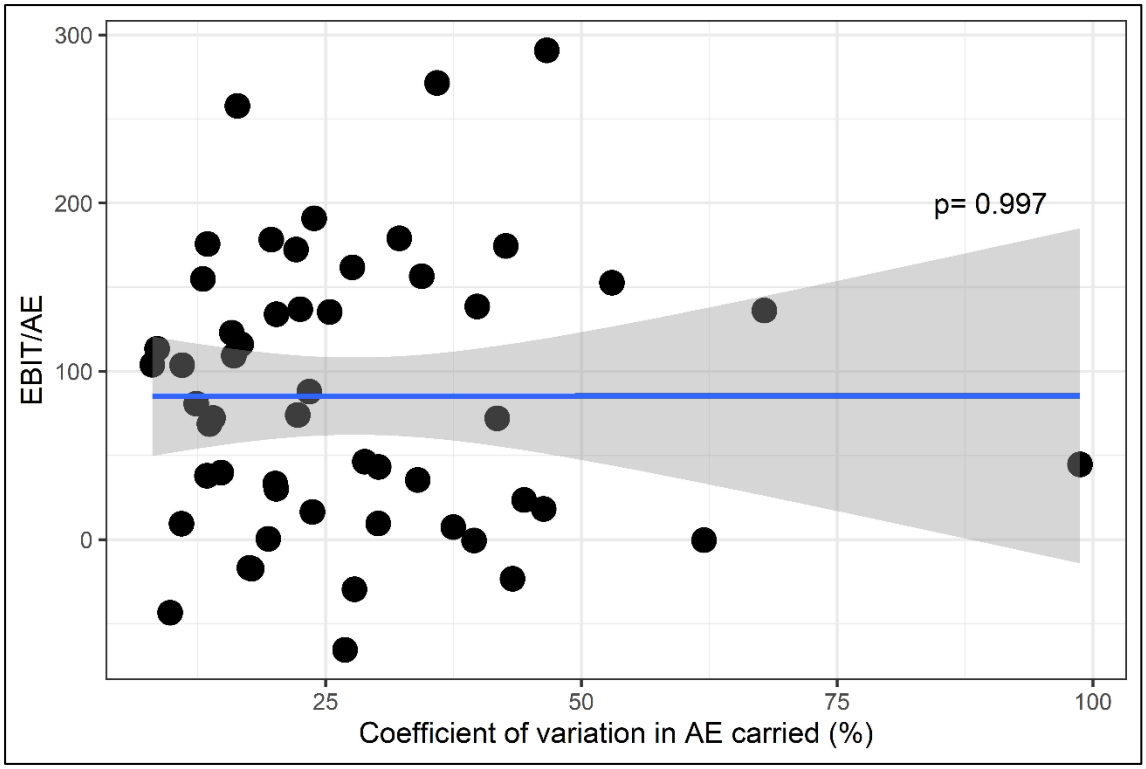

Figure 38: Relationship between EBIT/AE and the coefficient of variation in AE carried with a p-value derived from a linear regression plotted in blue with a shaded standard error

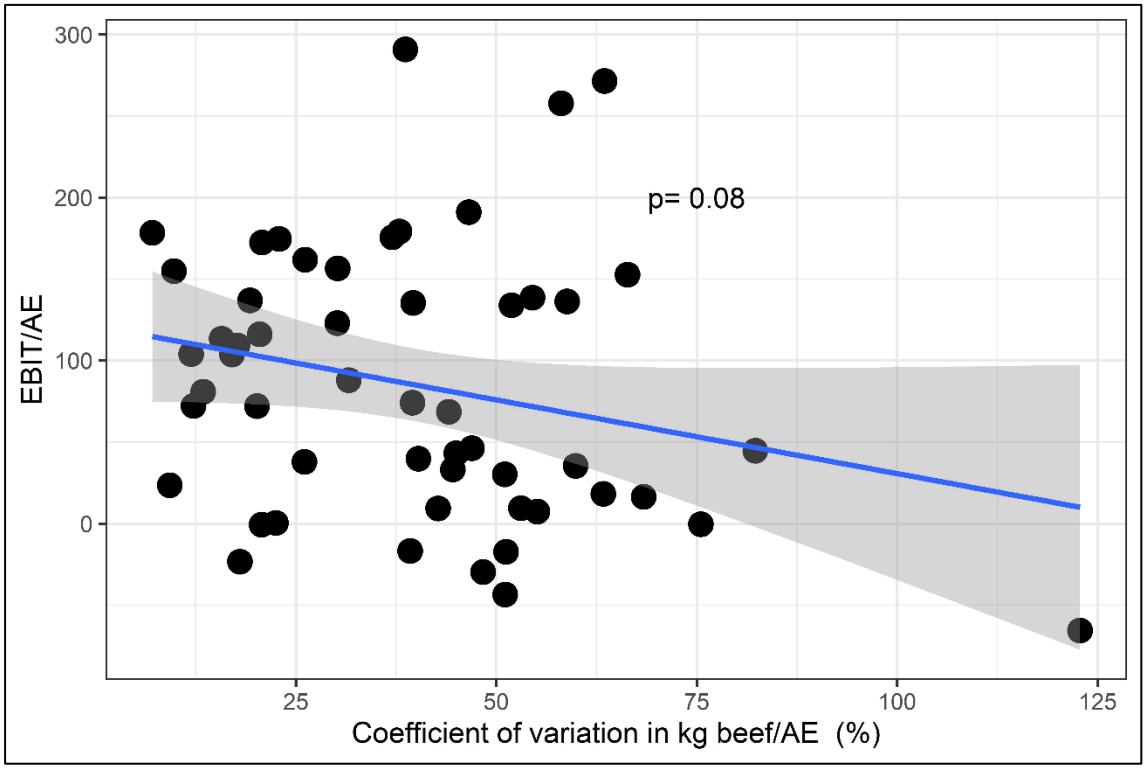

Figure 39: Relationship between EBIT/AE and the coefficient of variation in kg beef/AE with a p-value derived from a linear regression plotted in blue with a shaded standard error

So, we could conclude that businesses with more consistent herd productivity year to year have more consistent profits year to year, and higher long-term average profits.

These kinds of analyses are often interesting to conduct and help us understand more about the pastoral industry, although they always reaffirm the overarching importance of herd productivity and its drivers: reproductive rate, mortality rate, and sale weight (growth). Management decisions should be made with the primary goal of herd productivity in mind, with any other effects, such as inter-annual variation in herd size, considered as secondary.

5.6 Analysis of long-term performance relative to rainfall

5.6.1 Background and analysis

Pastoral company benchmarking participants are often interested in how seasonal conditions affect production figures. Agricultural benchmarking analyses sometimes express production figures per 100mm of rainfall. However, this is likely to be inappropriate for the pastoral company benchmarking group due to the range of regions covered and differences in enterprise type. Additionally, rainfall may not be the best biophysical variable to relate to beef production, as the timing and intensity, not just total volume, affects outcomes.

The following analysis was conducted on average rainfall and pasture growth taken for the spatial extent of each station that had 5 or greater years of data. Rainfall was taken from the Scientific Information for Land Owners (SILO) dataset for all years, and pasture growth was taken from CSIRO's Ag Productivity data service (Donohue 2020; Jeffrey et al. 2001). Examples of these datasets are plotted in Figure 40.

Annual pasture productivity (kg/ha) and rainfall (mm) were related to kg beef/AE and kg beef/ha. Wet season rainfall was calculated as the sum of rainfall from November of the preceding year to April of the current year, and dry season rainfall was defined as the sum of rainfall from April to October of the current year.

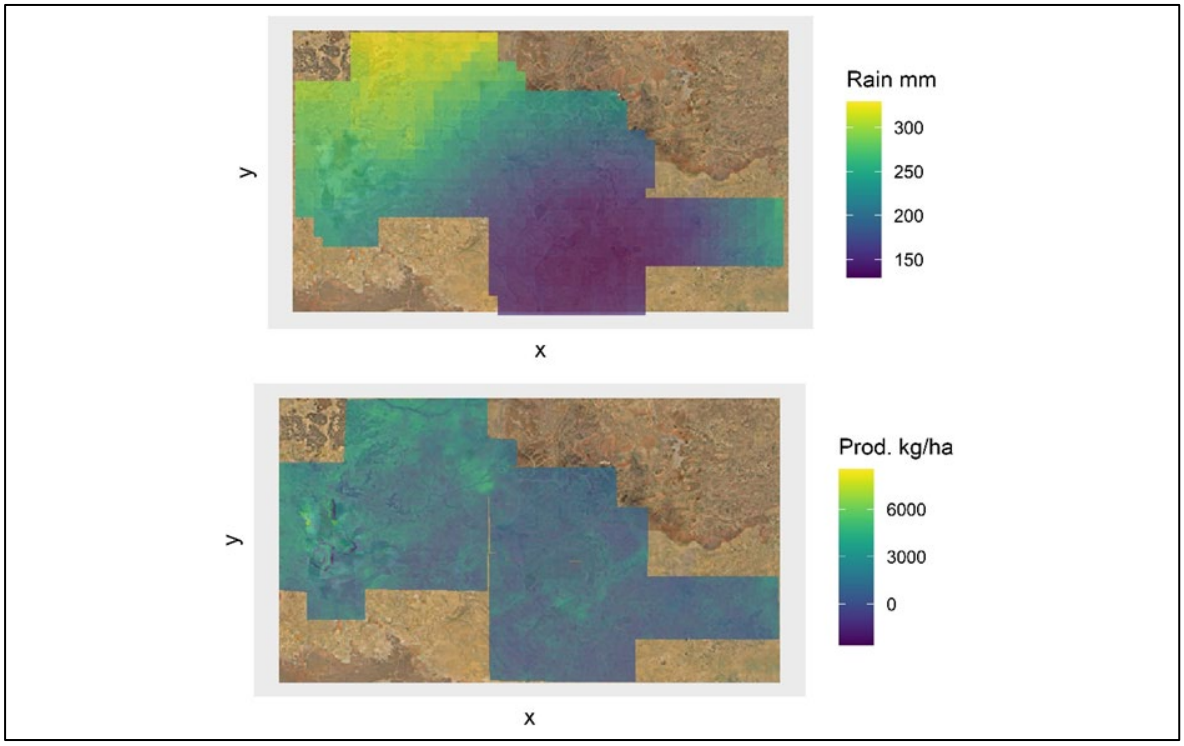

Figure 40: Rainfall and productivity per hectare for three contiguous stations in 2018

5.6.2 Rainfall and beef production

Figure 41 shows rainfall and kg beef/AE for each station and each year, with a smoothed trend line fitted to allow flexibility. There is an initial increase in kg beef/AE as rainfall rises to 300-500mm, then kg beef/AE comes back down. The figure demonstrates that rainfall does not relate to beef productivity in a linear way. This is likely due to inherent differences in productivity between regions which receive different amounts of rain, on average, and differences in the relationship between beef production and rainfall between regions.

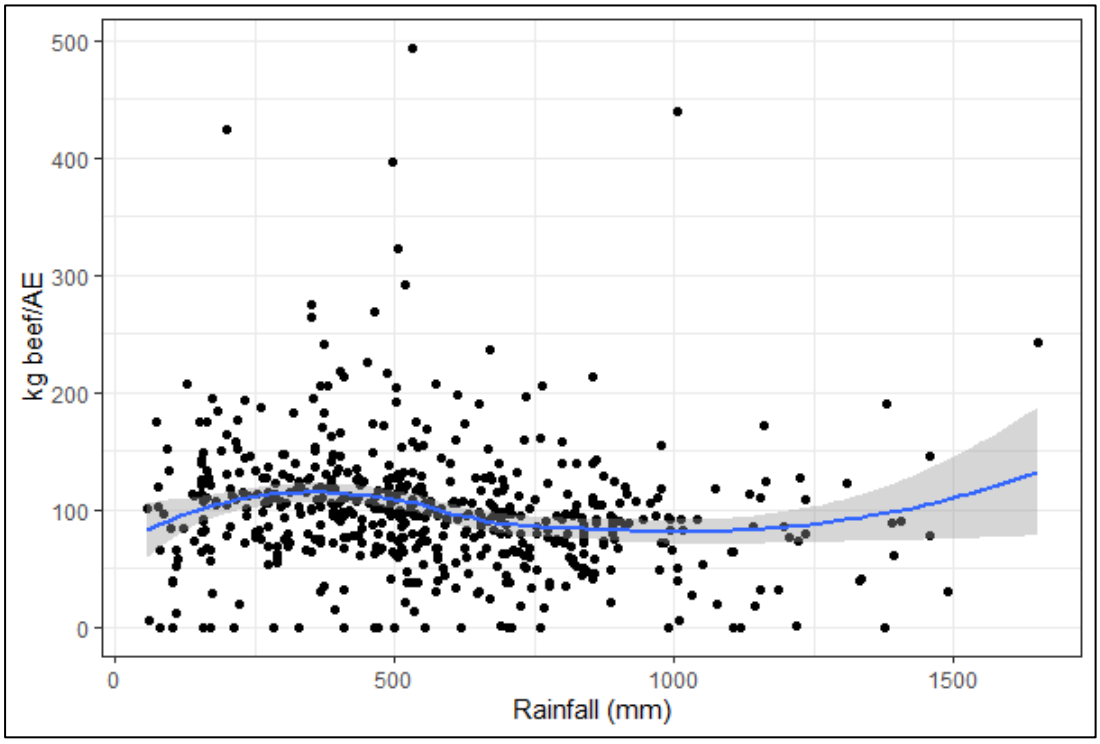

Figure 41: Calendar year rainfall and kg beef per AE for all stations in the pastoral company benchmarking for all years, with a smoothed trendline +/- standard error of estimation.

5.6.3 Importance of rainfall versus pasture growth

The effect of rainfall on beef production may be confounded by many other factors.

The strength of association between different factors can be further tested by fitting a model for beef production per AE and per hectare, with error terms accounting for the effect of region and year. Figure 42 shows t-values which can be interpreted as scaled importance measures giving the direction (positive or negative) of association. Dry season rainfall was positively associated with both kg beef per AE and per hectare. Pasture growth had a significant positive relationship with kg beef/ha, but less so for kg beef/AE. This suggests that other factors, like adjustments in stocking rate, buffers the impact of pasture growth on animal unit productivity relative to productivity per area. Interestingly, calendar year rainfall had a negative relationship with both kg beef per AE and per hectare.

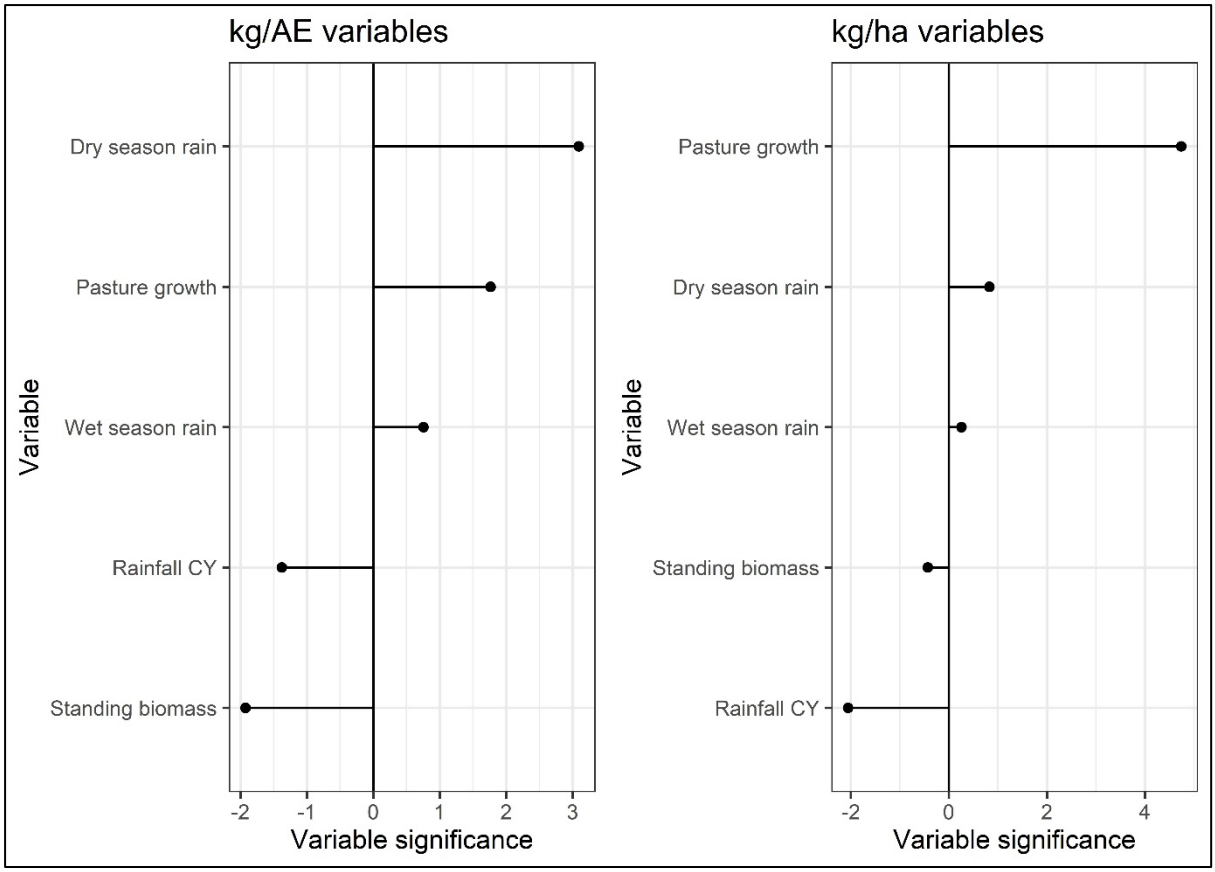

Figure 42: T-values indicating scaled variable importance for mixed models fitted to kg beef/AE (left), and kg beef/ha (right), which account for region and year as error effects.

5.6.4 Conclusions

The relationship between rainfall and beef production is not as clear-cut as might be expected and is confounded by numerous factors, including region. In fact, calendar year rainfall is negatively associated with beef production.

Pasture growth is more strongly and positively associated with beef production. This suggests that managers have many options available to them to manage rainfall variability. It also indicates that grazing land management practices which maximise pasture growth, as rainfall allows, will produce the best beef production results.

In addition to grazing land management for optimal utilisation of rainfall, managers can maintain animal unit productivity by adjusting stock numbers for seasonal conditions. This was evident in the analyses as pasture growth affected kg beef/ha more than kg beef/AE, indicating that seasonal variation in beef production was determined by fluctuations in stock numbers rather than animal unit productivity. Pastoral company benchmarking participants are clearly managing seasonal variation to some degree. Further analysis within regions and case studies of stations of interest may allow further insights into management of climatic variation.

5.7 Expense Drivers

This analysis has supported previous findings in showing that expenditure is secondary to income in determining the long-term performance of individual enterprises and companies. The better performers achieve their higher profits by producing more kilograms of beef per animal unit. They have a competitive cost base, but not necessarily a lower one. Their enterprise expenditure is usually lower, indicating that it is better targeted, and their labour efficiency is often better, resulting in lower overheads, but this is not always the case.

There is no recipe for optimum herd expenditure, since this is specific to the business, location and the year. Over the long term however, better performing breeding enterprises spend less on fodder & supplements, have less of a requirement for agistment expense and they have a lower cost of processing animals (lower Contracting & Mustering expense and Internal Freight expense). The differences in herd expenditure between Average and Top 25% breeding herds are summarised in Table 6, which highlights these particular points.

Table 6: Herd Expenditure - Breeding Enterprises

Breeding Enterprises – Long Term Averages (10 years)		
Enterprise Expenditure	**Average ($/AE)**	**Top 25% ($/AE)**
Agistment	3.98	1.17
Animal Health	5.05	4.16
Contracting & Mustering	13.29	10.28
Fodder	5.43	5.07
Insurance & Materials	0.19	0.12
Internal Enterprise Freight	3.67	1.16
Selling Costs	17.82	23.45
Supplementation	14.80	12.44
Total Enterprise Expenses	**64.22**	**57.85**

The lower herd expenditure of better performing growing enterprises is predominantly a function of a much lower fodder & supplementation spend, along with lower selling costs and contracting & mustering expenses (see Table 7).

Table 7: Herd Expenditure - Growing Enterprises

Growing Enterprises – Long Term Averages (10 years)		
Enterprise Expenditure	**Average ($/AE)**	**Top 25% ($/AE)**
Agistment	11.02	11.14
Animal Health	6.51	5.48
Contracting & Mustering	10.97	8.24
Fodder	11.80	6.74
Insurance & Materials	0.27	0.40
Internal Enterprise Freight	3.27	2.02
Marketing & Promotion	0.03	0.00
Selling Costs	49.53	45.76
Supplementation	12.23	10.34
Total Enterprise Expenses	**105.63**	**90.13**

There are two major drivers of overhead expenses per animal unit, scale and labour efficiency. Businesses that lack economies of scale have higher overheads per animal unit, this is seen in Figure 43 below. This data is the long-term average performance of all enterprises within the dataset. The smaller business units with overheads below $50 per AE are either agistment only business units, or business units that operate effectively as an outstation to another business unit, which reduces their overhead costs. It can be seen that there are some small business units that overcome lack of scale and have competitive overheads (<$100/AE) at smaller scale, but the business units with high overheads (>$150/AE) are all less than 10,000AE.

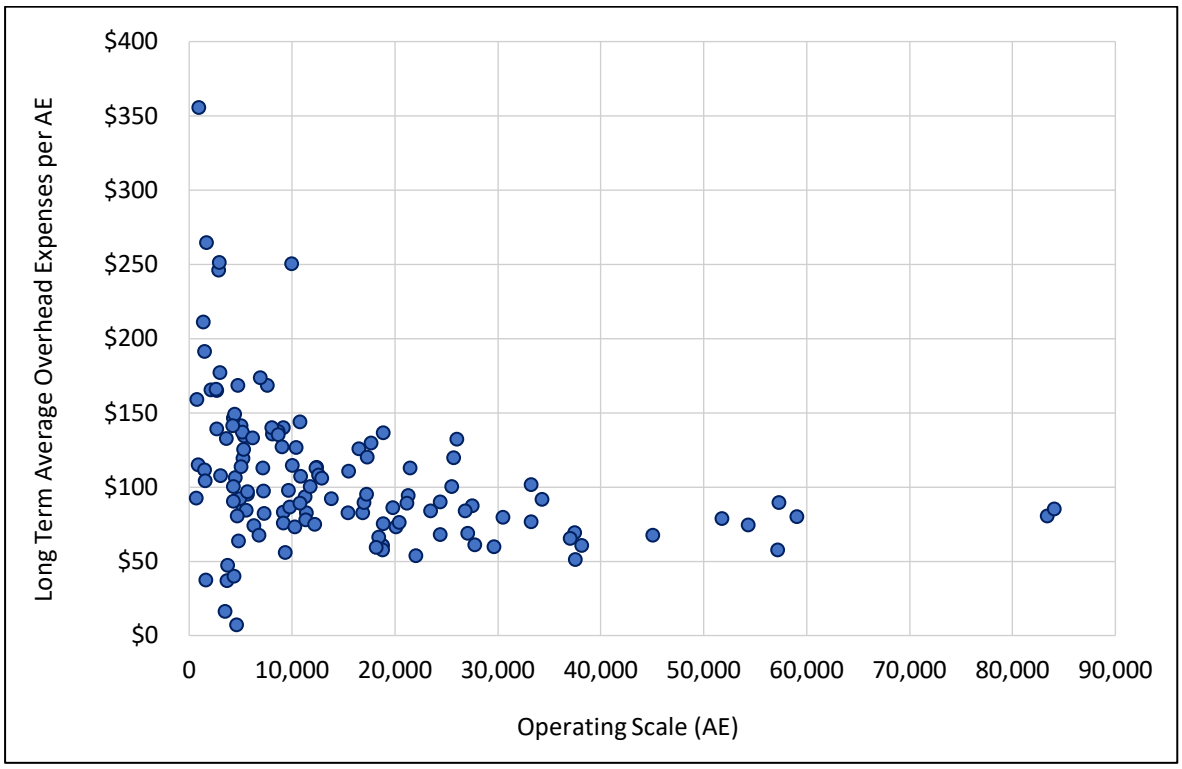

Figure 43: Relationship between operating scale and overheads per AE (long term enterprise performance)

If operating scale is not a barrier, then labour efficiency is primary driver of overhead expenses per animal unit. This, and previous analyses, has identified that labour efficiency of at least 1,500AE per FTE is required to have competitive overheads per AE. Figure 44 below graphs the relationship between labour efficiency and overheads from the long-term data of all enterprises within the group. This shows that enterprises with lower labour efficiency have higher overheads per animal unit and vice versa. Further analysis was undertaken by separating those businesses with labour efficiency either side of 1,500 AE/FTE and those with overheads per AE either side of $100 (below which is considered as having competitive overheads).

In a coincidental replication of the pareto principle, of those businesses with labour efficiency less than 1,500 AE/FTE, 82% had overheads higher than $100/AE, and only 18% below. Comparatively, of those businesses with labour efficiency better than 1,500 AE/FTE, 82% had overheads less than $100/AE and only 18% above.

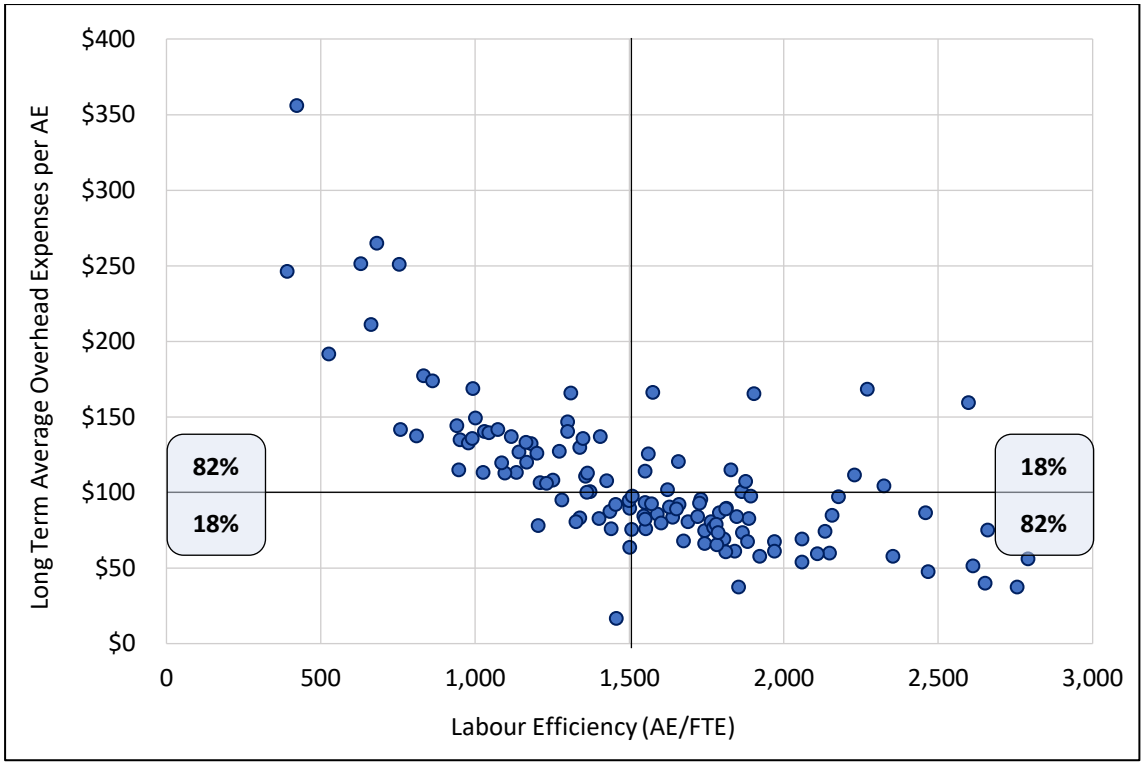

Figure 44: Relationship between labour efficiency and overhead expenses per AE (long term enterprise performance

5.8 Comparisons to the Wider Industry

To provide some context from the wider industry, the performance of pastoral companies within this project can be compared to the private producer data from *The Australian Beef Report* (ABR) (McLean et al. 2020). This report was last updated in 2020, hence there is only data up to the 2019 financial year (an updated version of the report is due to be published in 2023, containing more recent data). Comparison is also made to the average performance of Bush AgriBusiness private producer clients. All sets of data have the same methodology applied, with an appropriate owner wage expense imputed for any unpaid owner labour in private businesses. Private businesses are analysed on a financial year basis; therefore, the timeframes of the below chart do not directly correspond with the calendar year pastoral company analysis. Nonetheless, it is still a meaningful comparison.

Figure 45 below shows the average ROAM of the pastoral company and private client group, compared to the average ROAM of northern private producers with more than 1,600 head from ABR dataset. All three groups showed similar trends in performance across the market and seasonal cycles, however there was much greater volatility in the performance of pastoral companies compared to the wider industry. Pastoral company performance was much stronger during more profitable times, whereas performance was poorer during less profitable years. The private client group experienced less variation in average performance across the ten years, with lower peaks and troughs throughout the period. This group does not have the geographic spread of the pastoral company or ABR data, which could explain its reduced variability.

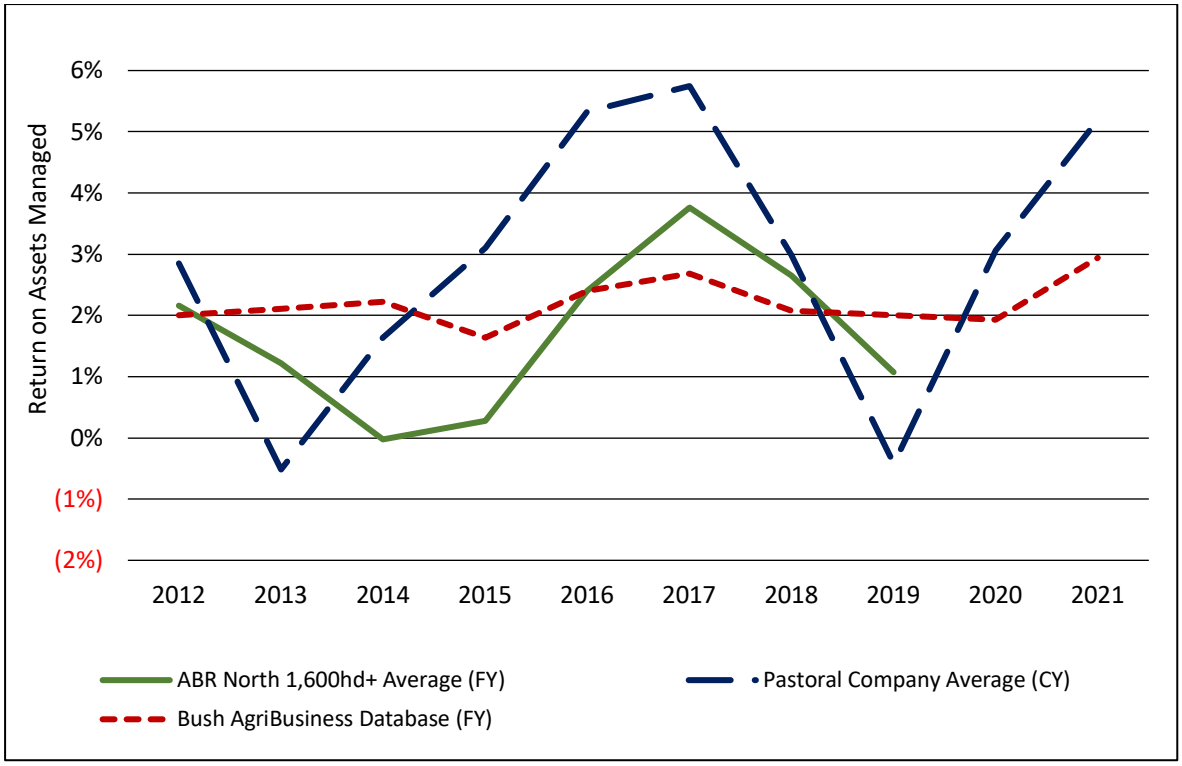

Figure 45: Comparisons to wider industry

6. Conclusion

This analysis has shown that beef business performance is quite variable across years, regions, companies, business units and enterprises. Seasonal and market conditions affect the whole industry, however through the full cycle the factors separating the top performers from the average are the same for pastoral company business units and companies as they are for non-corporate businesses. The better performers generally have:

- Higher income per animal unit, as a result of better herd productivity
- More targeted and lower herd expenditure
- Better labour efficiency
- Sufficient operating scale

Seasonal and market fluctuations, yield compression through increasing asset values and cost increases will continue to provide ongoing challenges to the industry.

This dataset and project provide analysis of a significant proportion of the national herd and landmass, with information on the performance of each business unit in their own right, and relative to their peers. It provides a foundation for ongoing knowledge sharing between participants.

7. Future research and recommendations

Within the timeframe of this project, there has been an increase in participation in the project and uptake of results by those managing and working in the business units being analysed, as well as those at head office level. This has led to the establishment of an NB2 group made up of participants across the Barkly and Gulf regions representing a significant proportion of the dataset. Increasing engagement with business unit managers and staff should be a priority in the future.

There have also been numerous events and tours held where leading non-corporate producers interacted and shared knowledge with pastoral company business managers. This sharing of knowledge benefits all and will be an ongoing priority.

There are opportunities to improve the ease of data transfer from the pastoral companies for analysis, and back to the pastoral companies for interpretation. This will be a focus of future work in this area.

This project and dataset continue to provide learning and insights to all involved. It is recommended that there be a continuation of the project to add to the data set and learnings over time.

8. References

Donohue, RJ 2020, *Primary Production and Carbon Mass of Australian Grasslands and Pastures.*

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9. Appendix

9.1 Consolidated Group Report

Refer to 2021 Consolidated Group Report - Pastoral Company Benchmarking 220628.pdf

9.2 Overview of Key Business Analysis Measures

The below is a brief explanation of some of the key measures used in the analysis of a beef business to assist in interpretation

Income Statement

Gross Profit	Sales - purchases +/- Inventory change. This is effectively the net income of the business.
Gross Margin	Gross Profit less Enterprise Expenses (aka direct or variable expenses).
EBIT (Earnings Before Interest and Tax)	The operating profit of the business, this profit figure is used in the return on assets managed, operating return and finance coverage calculations.
Earnings Before Tax	The profit of the business before tax, but after interest, corporate administration and land lease payments. Corporate administration, where applicable, are head office expenses apportioned to each station.
Inventory Change	Change in value of herd on hand from start to end of year. It is determined by change in herd size and structure and not changes in market value, a constant value is used across the year.
Land Lease Payments	This is effectively treated as a finance cost of the business, as opposed to an operating cost. This allows the operating performance of the business units with leases to be directly compared to ones without leases.

Business Unit Key Performance Indicators

Return on Assets Managed	This is the percentage profitability achieved across all assets under management, which is operating profit (before land lease payments) as a percentage of all assets under management (leased land is capitalised for the purposes of this calculation).
Operating Return	This is the percentage profitability achieved on assets owned which is profit after land lease payments as a percentage of all owned assets (leased land is not included).
Capital Return	Change in owned land value as a percent of opening total assets.

Enterprise Income Statement

All figures presented in the enterprise income statement are expressed per average annual AE run for the year, i.e. sales and selling cost are the totals for each per AE run for the period and are not the figures per AE sold.

Average price received ($/kg LW sold)	Average price received per kilogram liveweight across all sales in the year.
Cost of Production ($/kg LW produced)	The operating costs of the enterprise for the year, divided by the kilograms of beef produced for the year.
Kg Beef/ AE	The kilograms of beef produced for the year (accounting for changes in inventory, as well as sales and purchases) divided by the annual average Adult Equivalents (AE) run that year.
Labour Efficiency (AE/FTE)	The number of full time equivalents assigned to the enterprise divided by the annual average AE run that year.
Turnover	Number of head sold divided by average head carried. A measure of the proportion of the herd sold each year.
Tonnes of beef produced per FTE	Total liveweight produced (tonnes) divided by total full-time equivalents of labour used by the enterprise.
Enterprise Size (Annual Avg AE).	The grazing load of the enterprise for the year calculated from opening and closing herd size and composition, the AE ratings per class and the timing of sales and purchases through the year.