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Going Corporate Dairy Farming

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Abstract

In this paper, whereabouts in Australia might a corporate firm invest fruitfully in dairying, and which key things they would need to "get right" to succeed, are explored. The dairy industries in South-west Victoria and in Tasmania enjoy a stable production environment. South-west Victoria offers opportunities for repeatable performance and competitive returns to capital by using a dairy farm system based on pastures, moderate stocking rates and with feed demand closely matched to the patterns of annual pasture growth. Corporate investors could aim at pasture-based dairy farm businesses milking 400 to 600 milking cows, that, with good management and staff and managing risk well, over a run of years could earn returns to capital in the top quartile of farms in the region. Top management with family farming fundamentals allied to good corporate governance is essential. To succeed, corporates need to get the internal incentives right, achieve above-average performance in the key areas, and manage all the risks very well, in the context of the whole farm system.

***Key words*:** Dairy farming, corporate farming, South-west Victoria, Northern Tasmania, risk.

Introduction

Since the beginning of European agriculture in Australia the great majority of farm businesses have been owned by private businesses operated as sole proprietorships, family partnerships or family-owned companies. This remains the case. Farm businesses owned and operated by families have long comprised the most successful business structure in agriculture in Australia.

Despite the strength of the family farm as a business entity, non-farm entities aggregating equity capital from non-farm investors and buying farms and using a variety of management and operational structures have also had a significant role in agriculture in Australia; usually in cycles related to economic cycles. From the earliest, corporate capital was involved in farming where the scale, the amount of capital and the risk was beyond the reach of family operations, such as in the northern cattle industry and large-scale, private, new land developments. Corporate investment is a type of farm ownership with specific issues and challenges to manage. Historically, the performance of corporate capital in agriculture has been problematic. Nowadays, there are corporate investments in agriculture that, with sound management, could perform competitively.

There are approximately 180 dairy farms across Australia under corporate ownership. These farms make up 3 per cent of Australia's total dairy farms (Dairy Australia, 2017) and a larger proportion of total production. Corporate investment in dairy farm businesses creates opportunities for farmers to exit, or to retire debt and move to lease-back-and-management arrangements. It also creates opportunities for young people facing capital constraints to get a start in the industry.

In this paper the questions explored are "whereabouts in Australia might a corporate firm invest fruitfully in dairying?", and "which key things they would need to 'get right' to succeed?" The opportunities for corporate investment in dairying directed at 400- to 600-cow dairy farms, based predominantly on pasture for the supply of feed, in South-west Victoria or Tasmania, are investigated. The recent past risk and returns (profit and capital growth) of dairy farming in South-west Victoria and Tasmania are reported, and performance potential under a range of scenarios analysed for dairy farms in these two regions running 400-600 cows, a size that may be attractive to corporate investors in terms of operating profit and capital growth whilst exposing them to acceptable risk. Finally, problems that constrain the performance of corporate-owned dairy farm businesses and ways of dealing with these issues are canvassed.

Corporate Farming

All assets have a value based on the potential returns, liquidity, tax implications and risk. Returns in farming relate to returns from farming and from owning assets that gain in value. Liquidity refers to the ability of the business to meet current cash demands. Tax in farming comes after generous treatments of capital gains and numerous special concessions. Farm risks can be classified as "business risk" or "financial risk" or "institutional risk". Business risk and financial risk are part of the day-to-day management of Australian farm businesses. Institutional risk arises from non-market events beyond the farm gate, such as when processors perform poorly.

The best farm operators manage their total risk by building their capacity to capitalise on the occasional above-average seasons, high farm product prices and low input prices while limiting their exposure to losses under adverse operating conditions (Ashton *et al.,* 2014). They manage well the risks they have some ability to control and, to the extent they are able, minimise exposure to risks beyond their control or beyond the level they are comfortable with. They take as much risk as necessary to earn the returns they wish to achieve, but no more.

"Corporate farming" is not simply defined as farming by a company. (Family farms also use this structure.) Corporate farming includes listed and unlisted companies, trusts and alliances and joint ventures. Corporate farming can include a variety of business models, specific to the needs and preferences of the investor, the nature of the farming systems and individual characteristics of the farms. In this paper the definition of corporate farming by Wright and Kaine (1997, p.81) is used:

> Those farms which are owned by a group of diverse shareholders each of whom has complete freedom of choice on whether to retain or dispose of his or her shareholding at any time.

Similar definitions emphasise the separation of the investor from the operation of the business. Corporate farming is sometimes defined simply as where the owner of capital is separate to the operator. A practical proviso with the above definition of Wright and Kaine (1997) is that the freedom of choice to retain or dispose of a corporate shareholding is not as complete as implied. It is constrained. Often for an investor in a capital fund the choice about retaining or disposing of a

shareholding is bound by time. The fund may have "life-of-investment" horizons for specific components of the portfolio.

Family farm businesses rely on retained earnings or debt to expand the capital base. Increasingly, alternative financing sources such as equity partnerships, share farming and leasing assets are options. Capital available to a farm business from retained earnings is limited. Farming businesses usually need to borrow additional capital to grow and build further equity. And, as the size of a farm business increases and the uncertainty and potential losses increase, the cost of borrowing increases. The principle of increasing financial risk applied in agriculture means that, as a farm business uses more borrowed capital, the chance of losing its own capital increases. This key principle of increasing financial risk fundamentally limits the size of family farms. As Heady states: "The entrepreneur who borrows must arrive at some subjective equilibrium combination of prospective profits and possible losses'" (1952, p.352). This balance will vary for each farmer at any time and will change for any family farmer at different stages of their farming career. The effects of uncertainty and the principle of increasing financial risk on the investor's attitude to risk mean that it makes sense for a family farmer not to farm "to the limit". The implications of the principle of increasing financial risk for corporate agriculture are not as severe as for family farming because corporate firms financed by equity shareholders have the advantage that limited liability reduces the exposure of investors to the prospect of losing all.

There are many reasons why corporate farms fail and achieve uncompetitive rates of return to capital. These include: having an inappropriate business model; poor decisions about farm acquisitions and the prices paid for them; poor management; and, not uncommonly, costly added layers of management, complexity and excessive operating costs. There are many examples of investors in private or corporate farming over-estimating the prospects for the market (if things are good they can only get better!), or having inadequate understanding of the nature of farming, especially the risks. Common mistakes in corporate agriculture include not doing rigorous due diligence on farm investments and the markets for the products to be produced, which results in not recognising potential weaknesses or threats to the enterprise and, most important, paying too much for the farm assets. These mistakes are sometimes the result of investment decisions being made in haste with inadequate or insufficient local knowledge. Farms with good potential are neither readily found nor for sale.

Corporate investors in agriculture are increasingly using flexible management models such as lease-back, share farming and alliances with family farming operations. Such arrangements are aimed to draw on farm and locale expertise, and harness incentives to encourage decision making agility and labour flexibility. Some of the arrangements corporate farms use are:

- Having central oversight of autonomous farm managers;
- Forming aggregations of geographically close farms operating under a single manager or group of managers;
- Setting up collective groupings of farm businesses operating under one or more managers; and
- Using share and contract farm arrangements involving joint decisions with the corporate manager.

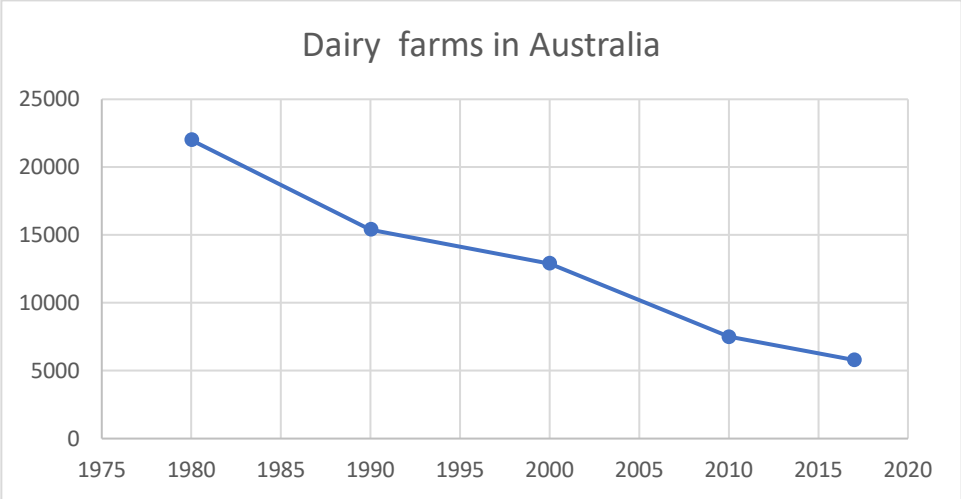
The key to successful corporate, or any, farming is to have structures with incentives for management and staff that give the best chance of achieving the objectives of the firm. The most successful corporate farming operations operate like the best family operations, and the most successful family farm businesses employ the best features of the corporate model, too.

Dairy Farming

The dairy industry in Australia contributes approximately 8 per cent of the $60bn gross value of Australian agricultural annual production and 7 per cent of the $40bn annual agricultural export income (ABARES, 2018). The dairy industry employs around 40,000 people across Australia on-farm and off-farm (Dairy Australia, 2017); 0.33 per cent of the Australian workforce.

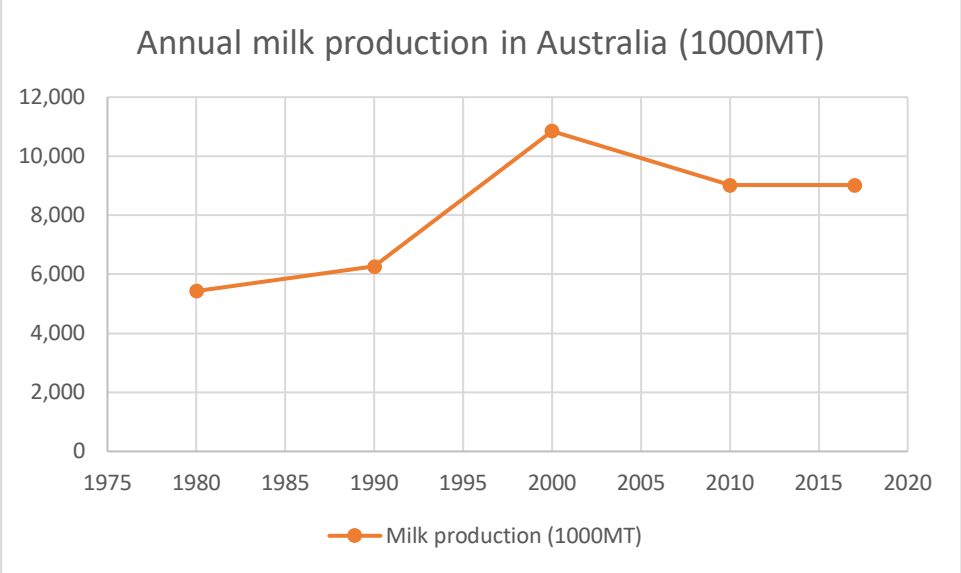
In recent years, the number of dairy farms, farmers, and cows have declined (Figure 1). So has milk production: annual production peaked in 2001 and has since decreased steadily, plateauing at around 9b litres per annum (Figure 2).

Figure 1. Australian dairy farm numbers 1980-2017



Source: Dairy Australia (2017, p.6)

Figure 2. Australian annual milk production 1980-2017

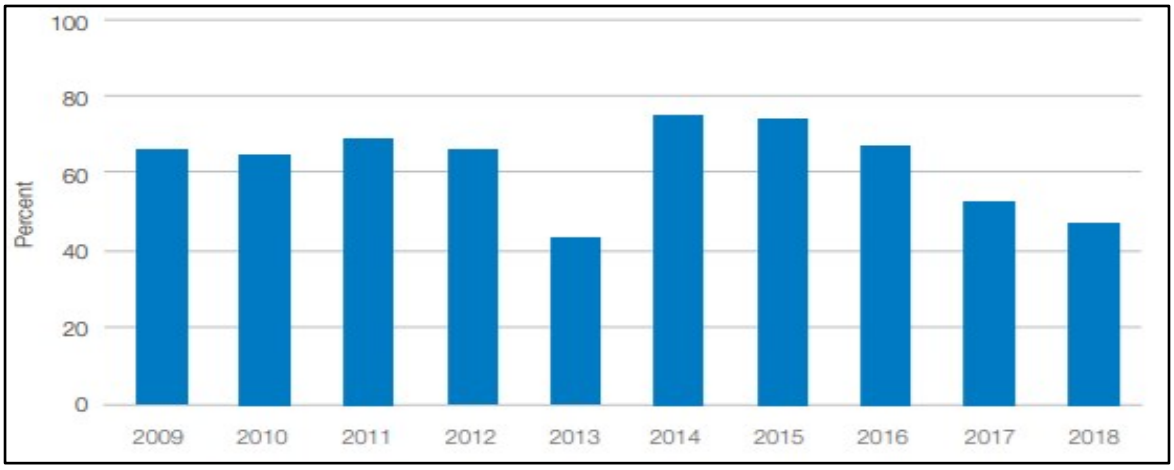


Source: Dairy Australia (2017, p.8)

Coinciding with the decline in dairy farm numbers in Australia and a plateau in annual milk production, farmer confidence in the dairy industry has declined each year for the past four years (Dairy Australia, 2018, p.6). Processor disruption, low milk prices, drought, lack of irrigation water

and high costs of irrigation water and fodder and grain in 2019 are major causes of the current downcast sentiment of dairy farmers (Figure 3). Counter-intuitively, these factors in combination may have created a counter-cyclical opportunity for investors.

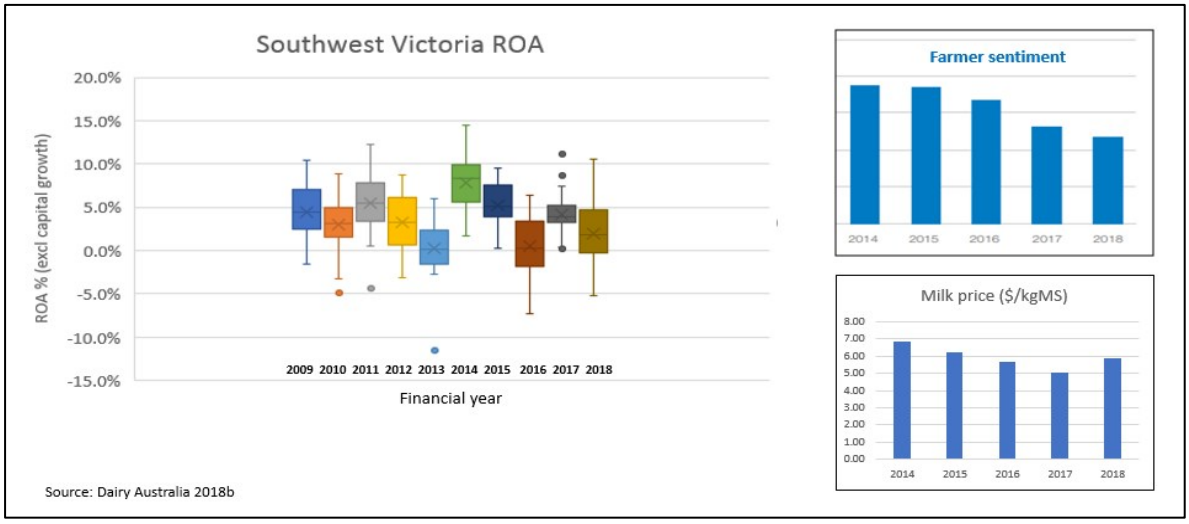
Figure 3. Farmer sentiment – percentage of farmers confident in the future of the Australian dairy industry



Source: Dairy Australia (2018, p.6)

Historical return on assets from farming for dairy farms in South-west Victoria that are part of the Dairy Farm Monitor Project (DFMP) (Dairy Australia/Agriculture Victoria/Tasmanian Institute of Agriculture) are shown in Figure 4 (Dairy Australia, *Dairy Farm Monitor Project Data*, various). These results are for 2009 to 2018. In 2014, the dairy farms surveyed showed good results resulting from high milk prices (around $6.90/kg MS). Since 2014, returns have declined steadily in line with the decline in milk price. Despite an increase in milk price of 12 per cent in 2018, poor seasonal conditions meant returns of dairy farms in the South-west DFMP decreased.

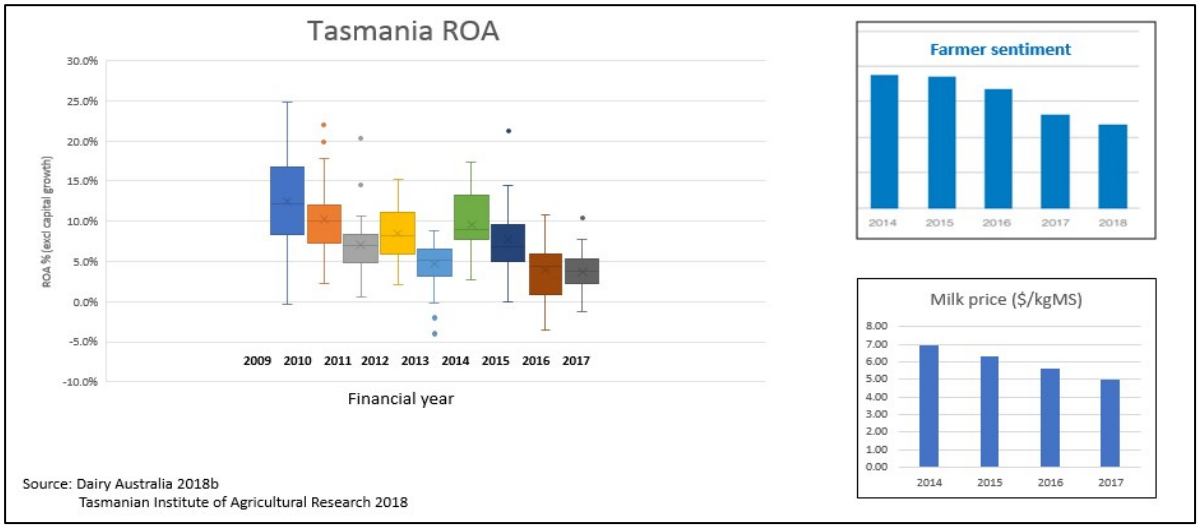
Figure 4. Historical return on assets from farming for South-west Victoria dairy businesses, farmer sentiment and milk price



Source: Dairy Australia (*Dairy Farm Monitor Project Data*, various)

The returns on assets from farming (not including land value gains) for Tasmanian dairy farm businesses for 2009 to 2018 are shown in Figure 5 (returns post-2014 are based on analysis using the DFMP method). The Tasmanian results show a decline in returns on assets post-2014 which follow the decline in the milk price.

Figure 5. Historical return on assets from farming for Tasmanian dairy businesses, farmer sentiment and milk price



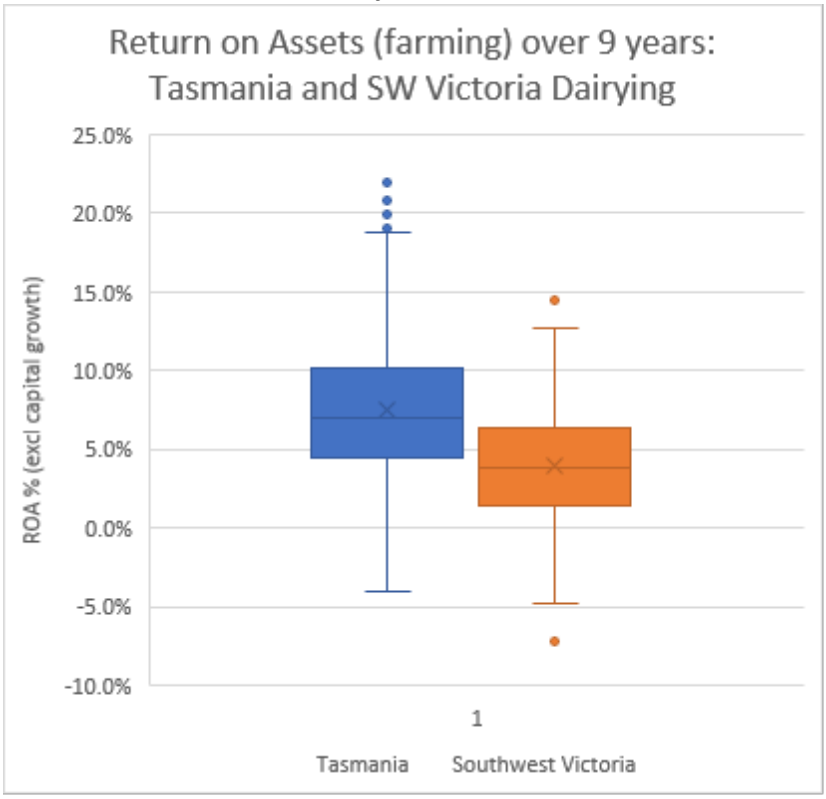
Source: Dairy Australia (*Dairy Farm Monitor Project Data,* various)

The farm data for 2009 to 2017 (Figure 6) show a mean return to capital over nine years for South-west Victoria of 3.9 per cent p.a., with a standard deviation of 3.7 per cent, and a mean return on capital for Tasmania of 7.5 per cent p.a., with a standard deviation of 4.8 per cent. The variance around the mean for Tasmania is statistically significantly different to the South-west Victoria variance around the mean (F-test). Tasmanian returns were higher but come with a higher standard deviation and thus more risk.

The South-west Victoria data was used to analyse the effect of the intensity of the system in terms of herd size, consistency of performance and staffing levels. The data were grouped into returns based on five herd-size categories: fewer than 200 cows, 200 to 399 cows, 400 to 599 cows, 600 to 799 cows and 800 or more cows (Figure 7). The data presented show the benefit of being able to operate within the top quartile of farmers milking between 400 and 600 cows.

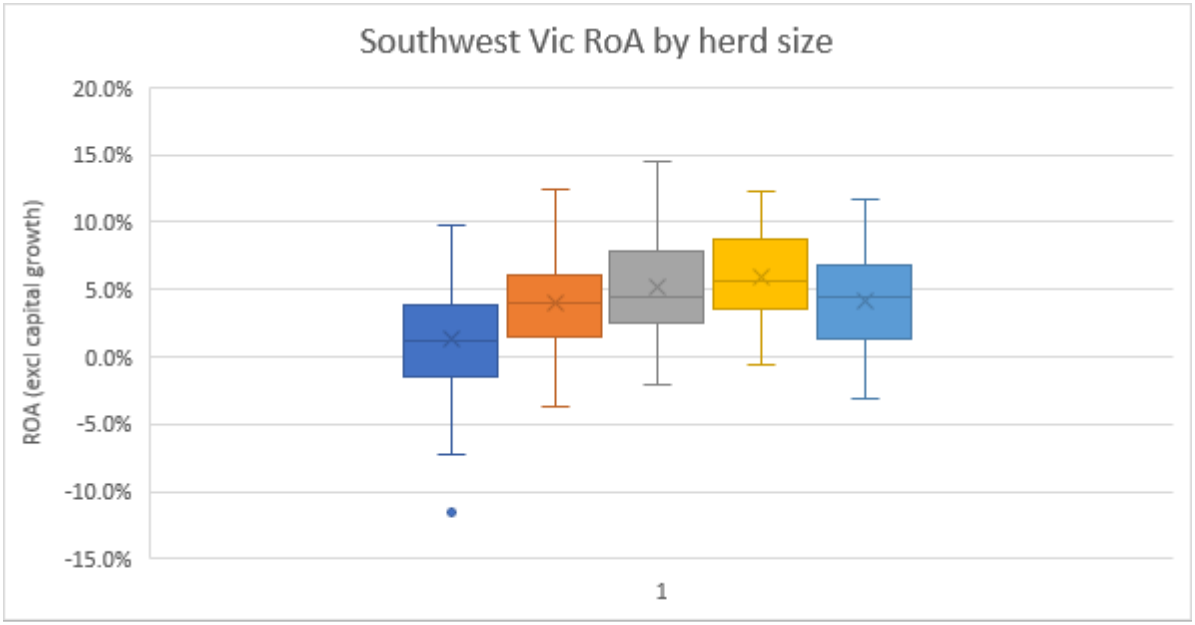
Farm businesses of this size gain the benefits that are achievable from economies of size. They are sufficiently large to spread the major overhead costs over substantial output, have a range of response options during times of dry weather and poor milk prices, can sustain moderate stocking rates without cows having to walk excessive distances, can recruit managers from a relatively large pool, and can be operated with moderate-to-low levels of mobile plant and equipment. Collectively, these characteristics deliver reasonably good returns reasonably consistently. The data suggests that herd sizes between 400 and 600 cows can be technically and economically efficient and have good prospects for profit. This size of dairy operation warrants further close consideration.

Figure 6. Historical nine-year return on assets from farming for Tasmanian and South-west Victoria dairy businesses



Source: Dairy Australia (*Dairy Farm Monitor Project Data*, various)

Figure 7. Historical ten-year return on assets and variance for South-west Victoria dairy businesses categorized by herd size

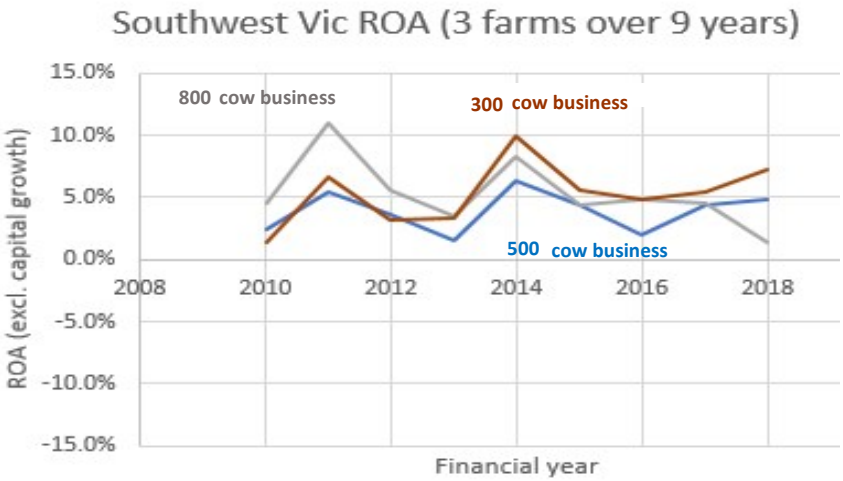


Cow No:	< 200 cows	200 - 400	400 - 600	600 - 800	> 800 cows
Mean	1.3%	4.0%	5.2%	6.0%	4.8%
Std dev	3.88%	3.14%	3.63%	3.47%	3.35%

Source: Dairy Australia (*Dairy Farm Monitor Project Data*, various)

The DFMP method of data collection allocates an identification number to each farm business. This number remains the same for each year that the dairy business participates in the project. There are 12 farm businesses that have participated in the project for nine consecutive years. These 12 businesses were assessed for consistency of performance. Three businesses showed consistently positive performance, having no negative returns over the nine years (Figure 8).

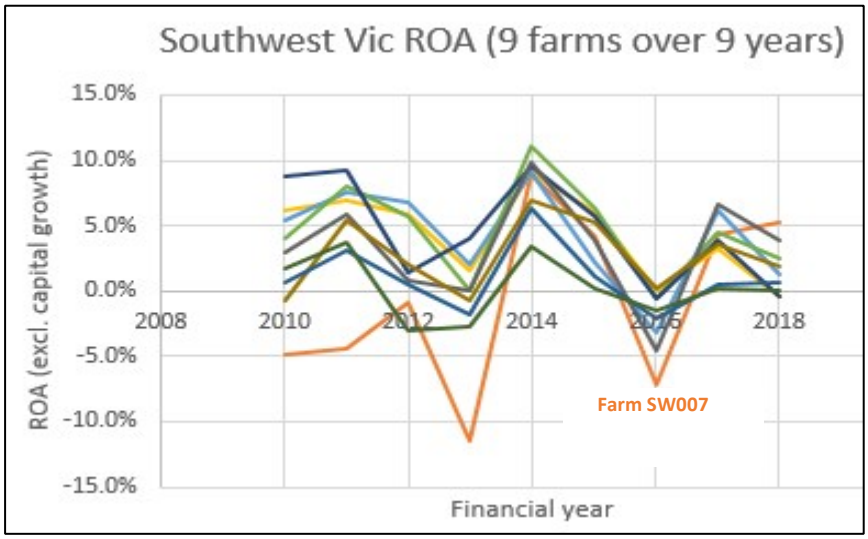
Figure 8. South-west Victoria consistent performing farm businesses



Source: Dairy Australia (*Dairy Farm Monitor Project Data*, various)

The remaining nine businesses experienced some years of negative returns over the nine years (Figure 9).

Figure 9. South-west Victoria inconsistent performing farm businesses



Source: Dairy Australia (*Dairy Farm Monitor Project Data*, various)

In two years, farm number SW007 went from being the worst-performing farm of this group in 2016 to the best-performing farm business of the group in 2018. These findings are in line with the well-recognised phenomenon that farm performance over a run of years can be determined in considerable part by random happenings, such as the timing and quantities of rainfall,

temperatures, pest and disease outbreaks and market price changes that occur subsequent to the decision-maker making their best-bet decisions about inputs and expected outputs. Further work is required to understand businesses that show consistent performance from year to year, despite wide ranges of rains, prices and feed costs.

Most pasture-based dairy businesses in Tasmania and Victoria derive returns both from income from farm production and from capital growth. To assess recent capital growth and future opportunities, nominal land values for Victorian and Tasmanian dairy land from ABARES (Farm Surveys and Analysis, various) and Deloitte Access Economics (2018) were investigated for 2009 to 2016 (Table 1). The 2009 price was $13,050 per hectare for Tasmanian dairy land and $12,950 per hectare for Victorian rain-fed dairy land.

If dairy land had grown in value at the rate of inflation (2 per cent p.a.) over the 8 years, dairy land in both Victoria and Tasmania would have been worth more than $15,000/ha in 2016. Adjusted for inflation, the value of dairy land fell in both regions between 2009 and 2016, the Victorian more than the Tasmanian dairy land. Put another way, over the eight years, dairy farmland in Tasmania held its real value better than was the case in South-west Victoria. A lesson here is that the real value of agricultural land can decline and rise, and real capital losses or gains are therefore possibilities depending on the timing of purchase and sale of dairy farmland. It is prudent for investors in dairy farmland to plan to earn their major source of net benefit from farming a dairy farm, not from owning it!

Table 1. Average dairy land value/ha

	Vic $/Ha	Tas $/Ha
2009	$12,950	$13050
2010	$12,850	$11,500
2011	$12,100	$17,050
2012	$10,890	$14,000
2013	$11,150	$13,800
2014	$10,900	$14,200
2015	$10,950	$13,950
2016	$11,100	$14,400

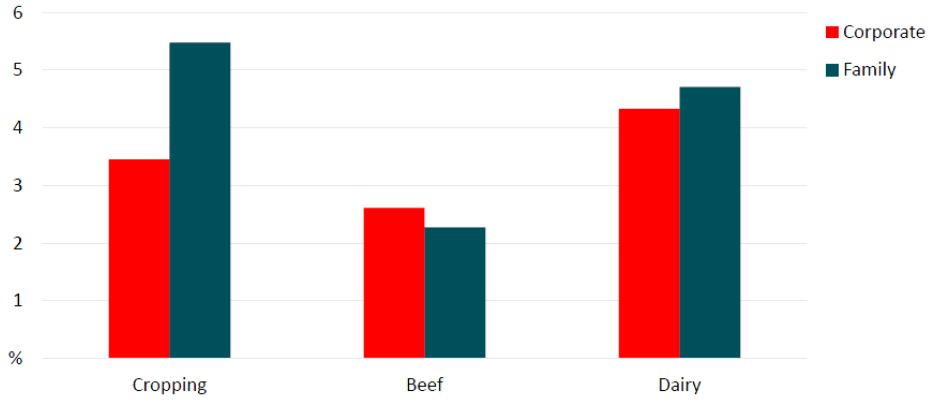
Source: ABARES (Farm Surveys and Analysis, various), Deloitte (2018, p.7)

Around 22 per cent of Australian dairy farms have less than 70 per cent equity - a critical level below which financial risk and risk of bankruptcy increases considerably - and the farms with higher debt and lower equity tended to be the larger farms. Farm debt can increase in good times and in bad. In Tasmania, average debt on dairy farms increased significantly over the past decade, largely because of farmers expanding and developing their farms. Dairy farms in South-west Victoria maintained relatively constant debt levels over the same period (ABARES, 2018).

There are limited data on the relative performance of the corporate farming sector. The ABARES recorded the performance of corporate and family farming businesses from 1998 to 2016 (ABARES, 2018). Over that run of years, family farms out-performed corporates in cropping and dairy, but not in the beef sector where corporates dominate in northern beef production (Figure 10). The ABARES attributes this performance to family businesses having agility, skill and flexibility within the farm operations to respond in a timely manner to the outcomes of underlying risky decisions required in

the businesses (ABARES, 2018). The costs of labour and management supplied by family members in medium-sized family farms are not the same as costs faced by large farms with hired labour and management, nor by non-family businesses. Family-farm labour and management costs can be regarded as fixed, and therefore sunk, giving them lower proportions of variable costs to fixed costs. Large family and corporate farms hire large amounts of labour. They have higher proportions of variable costs to fixed costs. This causes large-scale farms to respond more to adverse changes in costs and prices, and to have different optimum operating conditions to medium-sized family farms with less paid labour and management. Family-farm labour, management and capital accept low returns for an extended time.

Figure 10. Rate of return on assets by corporate and family farm businesses - 1998-2016



Source: ABARES (2016)

The level and volatility of annual returns to capital vary across agricultural industries. For instance, the ABARES (2016) reported that fewer than half Australia's dairy farm businesses earned less than 5 per cent return on capital including land appreciation, whereas around one third of dairy farmers achieved greater than 10 per cent total return to capital. The important aspect of the measure of return to capital is how much this varies over time (i.e. the variance around the average), which is a measure of risk (Table 2).

Table 2. Variation in rate of return including land value

Probability of earning	Less than 5 per cent	Greater than 10 per cent
Cropping	39	33
Beef	43	38
Dairy	49	28

Source: ABARES (2016)

Corporate investors in farming often aim to operate farms that are larger than most farms in the industry, in dairying, for example, running herds that are over twice the size of the industry-average herd size. Farms at that scale are relatively scarce. In 2016/17, of around 5,000 dairy farms in the industry, there were approximately 1,000 farms that milked more than 350 cows (ABARES, 2018). There are few examples of single-site, extremely large dairy farms with herds of 3,000 cows or more in Australia. Very large dairy operations have been proposed, and at times attempted, by corporate investors but the success of such have been constrained: by average costs of output rising as the size of the operation becomes very large and complex, leading to problems servicing debt; difficulties recruiting the highly-skilled managers and workforce required for very large and complex

operations; and, in some cases, highly-intensive operations running into regulatory and social licence-to-operate issues.

Over the past decade, the dairy industry in Australia has been characterised by volatility and pessimism. As ever, such downturns create opportunities for investors to buy well-chosen dairy farming businesses. South-west Victoria and Northern Tasmania may offer opportunities for investment in dairy farming systems, based primarily on pasture as the feed source, with strategic use of concentrates, that can be profitable over runs of prices and seasons.

Prospects for Corporate-size Dairy Farming in South-west Victoria and Tasmania

A desk-top study was conducted of dairy farm businesses of a size that may be attractive to a corporate investor, i.e, farms of 400-600 cows in South-west Victoria or Tasmania. Two representative case study dairy farms were developed, budgets constructed, and potential performance analysed over a ten-year life of investment. Farm data were obtained from the Dairy Farm Monitor Project and ABARES. The two representative farms and outputs from the model are summarised in Table 3.

Table 3. Two representative farms for modelling purposes

	Farm A (Northern Tasmania)	**Farm B (South-west Victoria)**
Lactating cow number	600	554
Total area (ha)	240	328
Irrigated pasture (ha)	130	0
Rain-fed pasture (ha)	80	295
Dairy type	50-unit rotary dairy	50-unit rotary dairy
Annual production in steady state (kg milk solids (kgMS))	292,627	273,550
Total investment including purchase of farm and cows, stamp duty, transaction costs and acquisition repairs and capex	$6,404,200	$5,017,600
Ten-year Internal Rate of Return (%)	9.72	10.76
Annual growth in nominal land value (%)	3	3
Inflation p.a. (%)	2.5	2.5

Source: Dairy Australia (*Dairy Farm Monitor Project* Data, various)

Return on assets is calculated as earnings before interest and tax (EBIT) divided by the total assets under management, expressed as a percentage. All results are in 2018 values. In the analysis, inflation is assumed to be 2.5 per cent p.a., and a real increase in land values of 0.5 per cent is assumed. Breakeven milk price is defined as the milk price in a year that would give zero annual EBIT and zero annual return on the investment.

The breakeven milk price for years two and three was identified, and the volatility of returns investigated, under two discrete scenarios. Scenario one is a drought (10th percentile for pasture

production in the model) and scenario two is a drought coupled with a 10 per cent drop in milk price (Tables 4 and 5). Breakeven milk prices for both farms for both years were around $5/kgMS. The scenario analysis confirmed that Tasmania offers a robust production system, providing irrigation water is not limiting in a drought year.

Table 4. Scenario analysis for Farm A (Tasmanian irrigated dairy)

Farm A (Northern Tasmania)	**Year 2**	**Year 3**
Base milk price ($/kgMS)	$6.46	$6.14
Return on Assets at base milk price (%)	7.97	6.18
Breakeven milk price ($/kgMS) (to earn zero annual EBIT and annual Return on Assets)	$4.83	$4.86
Drought scenario (Annual Return on Assets) (%)	6.23	4.43
Drought scenario coupled with 10% decrease in milk price (Annual Return on Assets) (%)	$5.86/kgMS 3.83	$5.53/kgMS 2.01

Table 5. Scenario analysis for Farm B (South-west Victorian rain-fed dairy)

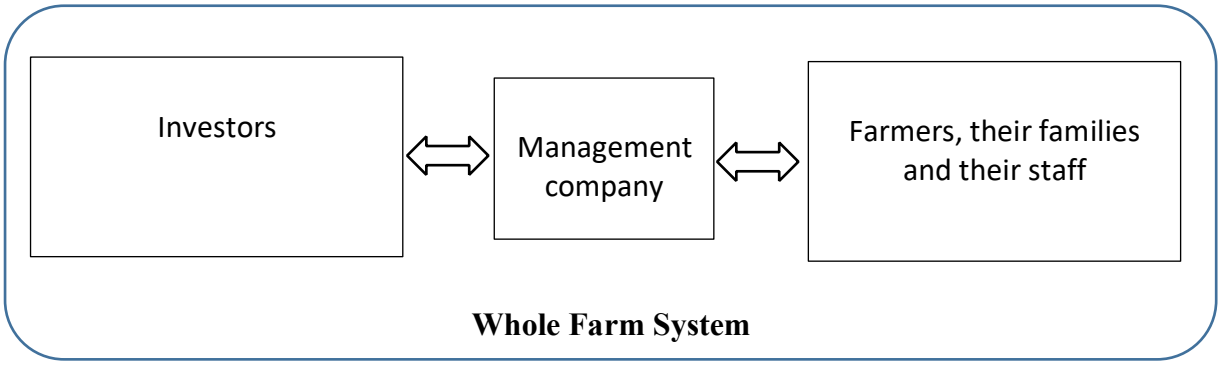
Farm B (South-west Victoria)	**Year 1**	**Year 2**
Base milk price ($/kgMS)	$6.46	$6.14
Annual Return on Assets at base milk price	8.30%	6.53%
Breakeven milk price ($/kgMS) (to earn zero annual EBIT and annual Return on Assets)	$4.99	$5.06
Drought scenario (Annual Return on Assets) (%)	2.13	0.36
Drought scenario coupled with 10% decrease in milk price (Annual Return on Assets) (%)	$5.81/kgMS (1.58)	$5.53/kgMS (3.33)

Corporate Models: Challenges to Success

As noted above, risk in dairy farm businesses can be classified into three categories: business risk, financial risk and institutional risk. In a corporate model, the risks in corporate-owned dairy businesses operating a share-farmer model are spread across three stakeholders: the investor, the share-farmer and the management company. Managing risk effectively in this model requires ensuring there is strong alignment between the objectives of the investor and the share-farmer. The management company is the nexus between the farmer and the investor (Figure 11). Good management is required to ensure that there is a marriage of family farming fundamentals for success and incentives allied with good corporate governance to meet with the needs of investors.

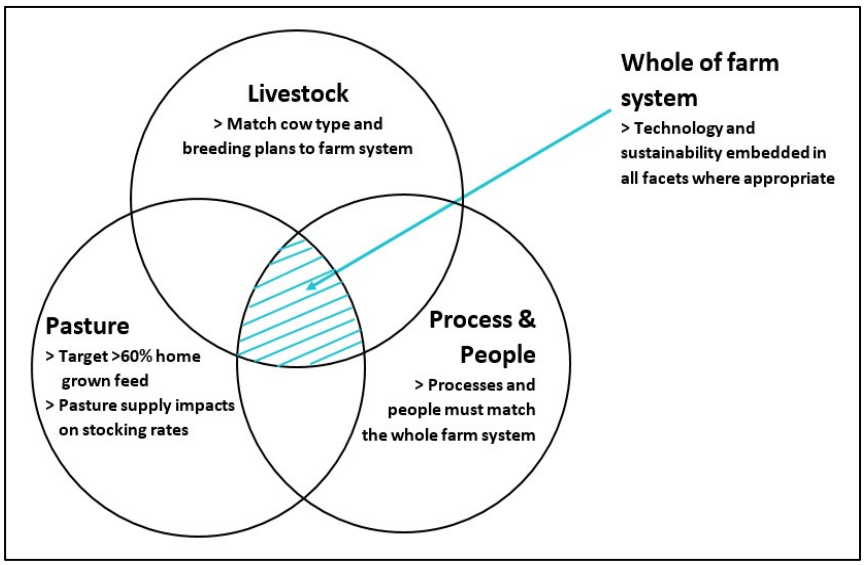
The investors need to consider an investment horizon that aligns with the "whole farm system" and is compatible with investors, farm managers and the management company.

Figure 11. Management is the nexus between the farmers and the investors



The whole farm approach to understanding the operation of farm businesses recognises that the success of an individual dairy farm is a combination of people, pasture, livestock and process (Figure 12).

Figure 12. Whole farm approach to dairy farm management



An essential risk management technique in farming is to farm well, achieving high technical standards of performance of all the critical elements of the business. People are a key to profit and should be matched to the farm system. The cows must be matched to the farm system. Livestock feed demand must be matched to the pasture growth pattern. Pasture production off the fixed asset, land, and utilisation must be maximised. Cow reproduction performance and life-in-herd are also key determinants of profit. The main types of risk for corporate-owned dairy businesses in Northern Tasmania and South-west Victoria, and what can be done to manage them, are identified in Tables 6, 7 and 8 below. Note that these risks are not independent; they are inter-related.

Table 6. Business Risk

Business risk	Risk management
On farm people	On farm personnel mentoring and support. Robust recruitment and Workplace, Health and Safety (WH&S) policies and procedures. Very good on-farm living conditions where applicable.
Management company leadership	A leadership approach that leads others to lead themselves is critical. The culture must be based on the mantra of "control is good, but trust is better".
Milk price and feed markets	Milk price is a key determinant of returns. It is essential to adjust inputs and the production system to changes in milk prices and feed costs.
Animal welfare, health and disease	Good farm management practices with closed herds and adequate animal welfare policies.
Climate change/volatility	Match the farm system to the local climate and realistic sustainable pasture production.
Milk yield	Adequate fodder reserves and forward contracts for purchased feed to offset variable pasture production considering economic viability.
Wrong farming system	Ensure the farming system is matched to the operating environment. Match the people and the livestock to the farming system.
Environmental impact of farming operation	Buffers along waterways, monitor nutrient run off, smarter fertilizer use, reduce energy use, alternate renewable energy sources, and evidence-based reporting.
Management company overheads reduce returns from fund/asset management relative to other opportunities	Effective asset/farm management companies will have deep expertise of management at the farm level. Complete and effective communication throughout all levels of operation is fundamental. it is imperative to be cost-efficient at head office level by utilising technology and having effective data collection processes and detailed timely reporting systems. Cost control is paramount at all levels of the business.
Management company skill set	Recruiting for good fit with the organisation is paramount, i.e. only take the right people into the business. If staff are willing to learn and management is willing to train them, then skills can be built.

Table 7. Financial Risk

Financial risk	Risk management
Investment terms	Clearly articulated investment terms that create alignment with on-farm management and investors.
Asset value decline eroding investor yields (unit value over time)	Asset selection process with adequate due diligence and governance to ensure asset location and purchase price is open to opportunities, if they exist, for future capital growth.
Debt/equity	Operating with sustainable debt mitigates interest rate risk.

Table 8. Institutional Risk

Institutional risk	Risk management
Social licence to operate	A potential risk in dairy farming is that maintaining the social licence to operate will increase costs of dairying over time as communities become increasingly concerned about the natural environment and animal welfare.
Government policy	The dairy industry has exportable surplus and operates in a deregulated environment meaning that, largely, government policy change will have negligible effect. Future free trade agreements could positively effect milk price.
Community perception	Corporate dairy farmers are wise to embed themselves within local communities, contributing to and supporting their local communities.
Alternative plant-based foods	Alternative plant-based foods will become a choice for some current and potential consumers of dairy products. Sound nutritional information about dairy, food safety and sustainable production systems is a necessity.

The most critical risks from the above listing of business, financial and institutional risks are discussed below.

People

In managing people, trust is imperative. Ensuring on-farm personnel are mentored, supported, trusted and remunerated adequately for their efforts is fundamental for all dairy businesses, and particularly so for corporate farms. Farm health and safety (WH&S) policies and procedures need to ensure that work environments are healthy and safe whilst ensuring adequate adherence to corporate governance. Work environments include mobile equipment, clean and well-maintained dairies and surrounds. Farm housing has to be of a suitable standard, offering good living conditions for all on-farm.

Management and company leadership

The ability of the corporate firm decision-makers to judge the ability of prospective farm managers is a “make or break” skill. The key risk of failure of corporate farms comes from the risk of not managing the farm well. The separation of capital and management expertise can create risks to managerial capacity.

Good leadership is understanding one's own limitations and enabling subordinates to do what they do best. Sharing responsibility, empowering staff, showing trust, removing barriers to learning, acting as mentors, offering encouragement and supporting whilst always providing constructive feedback – these are the attributes of leadership of well-managed businesses. Equally important is having effective followers in the workforce (staff and farm workers) eschewing excessive conflict and risk, initiating change whilst acting in the best interests of the organisation (Daft and Pirola Merlo, 2008, p.215). The keys to managing management risks are:

- Employ the manager with the right skills and experience and local knowledge about risks. As happens, highly skilled farm managers are relatively few, and often drawn to self-ownership;
- Enable prompt decision making - timely decision making is key to the success of farming businesses; outcomes are usually determined within narrow windows of action during the year;
- There can be inevitable lags between managerial decisions and investment outcomes that mean the investor cannot act to mitigate promptly the risks of bad decisions. A common failure is corporate owners being too remote to be able to find the right managers and be sufficiently informed about the individual farm to identify poor management decisions until after they have occurred.

Management company overheads

The structure of the corporate farm business with multiple owners separate from operations means there are greater overhead costs, from a range of sources, including management layers, reporting requirements and operating costs. These include:

- Commissions and fees for private equity fund management;
- More systematic and regular financial and management reporting;
- Human resource and safety management and reporting systems; and
- Skilled labour premiums - farm manager costs are generally higher where managers do not have a share in the equity or a capacity to build private equity within the farm production system. This is especially the case in livestock systems where the management model excludes share-farming: management fees are higher to account for the inability to build a herd over the course of tenure. The corporate farm also pays for all labour at all hours. Under the family farm model, this is not necessarily the case with family labour units commonly foregoing wages and penalty rates in support of overall enterprise profits

Animal welfare, health and disease risks

These risks can be managed by running closed, self-replacing herds. Well-defined breeding plans will assist with breeding profitable fertile cows that produce more milk, live longer (longevity is the result of better fertility, less disease and fewer animal health issues) and consequently depreciate more slowly. Animal health and welfare is paramount. All farm staff and managers have to be fully aware of their responsibilities. The management company needs in-house animal health and welfare policies. Animal welfare is increasingly scrutinised by the public and by dairy consumers, and penalties for breaches are increasing while the potential wider sector costs of poor treatment of animals are large.

Milk price and markets

Milk price is the key contributor to profit, subject to the economic principles of cost control, the law of diminishing marginal returns to variable inputs, and marginal thinking in decision analysis. Despite the volume of exported milk in Australia declining over the past decade, the movement in

exported dairy commodity price explains 93 per cent of the year-to-year variability in the Southern Australian farm gate milk price (Fresh Agenda, 2018).

Near future milk prices have the potential to be disrupted positively by: New Zealand limits on production growth; Russia re-entering the market; EU producers coping with volatility; China's obsession with infant milk powder and fast food rollout; developing Asia; and new free trade agreements. Negative influences on forecast milk prices include: increasing output by the US; plant-based alternatives; ageing Japan; China's shifting milk needs; and the potential for Brazil to become a future dairy production powerhouse.

A small degree of control over milk price exists at the farm level via milk quality, components (butterfat and protein percentages) and volumes produced. Some milk processors have productivity bonuses built into their milk payment systems and allow suppliers with multiple farms to pool their total production to meet payment hurdles.

Investment terms and fund structure

Investment terms and fund structure are critically important to corporate agricultural systems. Establishment of successful investment opportunities are preceded by a clear and concise "terms sheet" (Table 9).

Table 9. Investor terms sheet example

Key term	**Example**
Investment sector	Pasture based dairy in South-west Victoria or Northern Tasmania
Size of investment	Initial A$50m scalable to A$200m
Target return	Targeted total returns (income and capital) of 10% net of fees pre-tax
Structure	Unit trust
Deployment	First close date
Target investors	Off-shore high net worth investors
Management	Independent management company with no investment in the fund
Term	Initial ten-year term
Liquidity	Option for liquidation after initial term as per the trust deed
Minimum investment	A$10m
Fees	>Base management fees of 80bps on gross assets under management >Performance fee of; 30% of annual income return out-performance of benchmark 20% of capital return out-performance of benchmark
Benchmark	75th percentile of Dairy Australia Dairy Farm Monitor Program applicable to operational region

To reduce risk with investors and to protect their asset value it is prudent to:

- Conduct annual independent property valuations;

- Provide quarterly written reports detailing the farming activities, current risks plus seasonal conditions, and
- Provide quarterly and annual financial reports.

Asset value

The asset (farm) selection process requires procedures that are measurable and replicable to identify assets that will be profitable and grow in value. This process needs to be disciplined to ensure that the assets selected have a good chance of performing at the expected above-average level. A typical asset selection process should involve several steps and should be approved by the appropriate governance structure of the management firm. The logical steps include:

- Register of farms listed for sale and/or sold which will build market intelligence.
- Single-year annual model that calculates the total investment required including repairs and/or capex expenditure required at acquisition to ensure the farm is operating at near capacity. Model outputs should include total investment in dollars per unit of output ($/kg milk solids) and expected returns on total assets managed. This model becomes a stop/go check point in the asset selection process.
- Ten-year financial model to calculate ten-year internal rate of return (IRR); the model must also allow for scenario testing of key variables.
- Portfolio model which combines multiple assets to analyse the contribution by individual farms, the effect of herd size, region, milk price and impacts on cash flow. The portfolio model should also generate expected returns to both investors and the management company.

Climate change and weather volatility

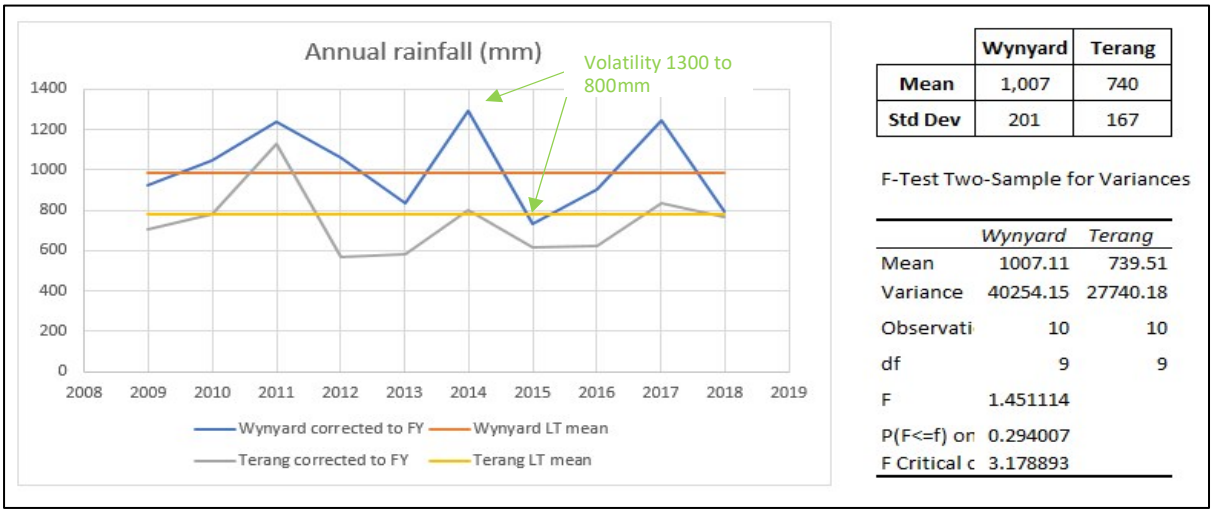
Climate change and increasing volatility of seasons and increasing extreme weather events will have an impact on future pasture production. The effects of season-to-season, year-to-year weather variability (essentially, rainfall, sunlight and temperature) can be measured in terms of annual pasture growth. Rainfall volatility (Figure 13) affects pasture production.

The rainfall in Figure 13 has been corrected to align with financial year outputs quoted in the annual DFMP data. Annual rainfall at Wynyard, Northern Tasmania, in 2014 exceeded 1200mm and decreased to below 800mm in the following year. The average pasture consumption (tonnes of dry matter/ha (tDM/ha)) for farms in the DFMP data for those years increased by 5 per cent from 2013 to 2014. Excessive rainfall negatively affected pasture production in 2013. Annual rainfall at Terang, South-west Victoria, in 2012 decreased by approximately 45 per cent from 2011 with the corresponding pasture consumption in the DFMP data decreasing by 22 per cent in 2012. Under rain-fed conditions, higher rainfall can lead to increased pasture consumption.

Producing Pasture

Pasture production is at the heart of the rationale for investing in pasture-based dairy farms in renowned dairying regions of southeast Australia. Observation of the performance of dairy farm systems in southern Australia shows the obvious truth: most dairy farms have high proportions of pasture in their herd's diet. This is consistent with the economic notion that, for any given investment in fixed resources of land and cows, the key to profit is to produce high levels of milk solids from the fixed resources, i.e., from the land and cows. The key to doing this is to maximise the pasture produced from the land and consumed by the cows.

Figure 13. Financial year annual rainfall for Wynyard (Tasmania) and Terang (South-west Victoria)



	Wynyard	Terang
Mean	1,007	740
Std Dev	201	167

F-Test Two-Sample for Variances

	Wynyard	*Terang*
Mean	1007.11	739.51
Variance	40254.15	27740.18
Observati	10	10
df	9	9
F	1.451114	
P(F<=f) on	0.294007	
F Critical c	3.178893	

Source: Bureau of Meteorology, Annual Rainfall, various

Social licence to operate

All participants in the dairy supply chain are obligated to ensure that the social licence of dairy farmers to operate is maintained without undue additional cost. At a farm level, carefully documented, evidence-based reporting systems covering livestock and pastures will be needed to support continuation of the social licence to operate.

Conclusion

Corporate investment has long been part of Australian agriculture. Successful corporate-owned dairy farm businesses are characterised by above-average performance in the key areas and adroit management of risks in the context of the whole farm system. Milk price volatility, processor disruption, climate volatility and farmer sentiment have collectively created a counter-cyclical potential opportunity in South-west Victoria and Tasmania dairying for corporate investors. The dairy industry in these regions has created wealth for participants in the past. It has potential to do so in the future. Northern Tasmanian dairying, with reliable irrigation, offers a stable production environment. South-west Victoria offers opportunities for repeatable performance and competitive returns to capital by using a dairy farm system based on pastures, moderate stocking rates and with feed demand closely matched to the patterns of annual pasture growth.

Astute investors will assess the investment in the context of risk associated with liquidity, volatility of returns, people, livestock, pastures and processes. Investing with a spatially diversified portfolio of assets across regions provides opportunities for mitigating risks. Corporate investors could aim at pasture-based dairy farm businesses milking 400 to 600 milking cows, with the capacity, with good management and staff, to perform in the top quartile of farms in the region for returns to capital over a run of years. Farm businesses of this size gain the benefits that exist from economies of size in dairying and have sufficient choice to deal effectively with volatile milk prices, feed supplies and feed costs. A tight focus of management of businesses of this size on containing costs and cash flow makes consistent and reasonable returns to capital from farming achievable. Key business risks can be effectively managed by ensuring that there is close alignment between goals and understandings of the investor and the farmer. Financial risk is best handled by getting the gearing right. Good management ensures that there are family farming fundamentals superimposed with good

corporate governance to create alignment with investors. As ever, appropriately geared and well-run dairy farm businesses can generate rewards for risk that are comparable with investments elsewhere in the economy.

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