

## **What is the current business case for leasing vs buying land assets for livestock grazing?**

**By John Francis, Director Agrista**

### **A seed discussion**

A few weeks ago, during a discussion with a highly experienced and reputable real estate agent we agreed that there did not presently appear to be a compelling case for leasing (as a tenant) agricultural farmland. After the discussion, I considered the issues more closely and wondered whether the evidence supported my speculative anecdotal position.

On reflection, I suspect that our joint position on land purchasing delivering superior financial returns relative to leasing was held due to the high rate of capital growth of agricultural farmland that we had observed over the last few years.

Having recently read the book “Thinking fast and slow” by Daniel Kahneman I was aware that my simple system 1 thinking may have been responsible for the forming of my view and that it was possible that my view was biased based on the capital growth over the last few years. Kahneman suggests that system 1 is the quick fire part of the brain that uses certain rules to allow us to respond quickly and efficiently. In most cases, the rules used by system 1 work well, but in some cases they don’t. When this happens, it is better to use system 2 – the slow thinking part of the brain. So here goes.

### **What to analyse**

The challenge in presenting an analysis that compares leasing with purchasing farmland is establishing the components of the investment analysis that constitute a reasonable comparative assessment. Should assets of similar scale be compared, or is it more appropriate to conduct the analysis based on the comparison of like-for-like capital requirements? Alternatively, should the wealth created from a pre-determined investment in purchased farm assets be engineered to establish what a lease opportunity creating equivalent wealth would look like?

This analysis investigated all three questions to establish the outcomes and the sensitivity of the analysis to different components:

- Scenario 1. Land purchase compared with same scale lease
- Scenario 2. Land purchase compared with same total liabilities invested in leased area

The next question was how to compare the business performance and assess success? This analysis compares the discounted cumulative cash position at the end of ten years inclusive of the value of capital gain with all liabilities repaid at the end of the ten year period. This assumes that all land and livestock is sold at the end of year 10.



### **Existing farm scale and performance**

The analysis is conducted assuming an existing livestock business with scale of 10,000 dry sheep equivalents (DSE). Prior to the purchase of the additional land, the business has total asset base of \$10.3 million with land representing 82.5 percent of the total existing asset base and liabilities of \$800,000. This represents an equity position of 92 percent equity relative to the total value of farm assets owned. The business is generating gross profit of \$70 per DSE with an enterprise cost structure of \$10 per DSE and an overhead cost structure of \$25 per DSE delivering \$35 per DSE in EBIT or operating profit.

The five year average operating performance of the business, prior to expansion, is 3.4 percent delivering \$350,000 in operating profit or earnings before interest and tax (EBIT).

### **Some starting assumptions**

To simplify the analysis several assumptions have been made. The first is that all expansion opportunities are adjoining, or close to, the existing area and consist of land type and infrastructure that is like the existing business. This ensures that additional purchased or leased assets have similar productive capacity to the existing business. It also ensures that inefficiencies in having multiple farm areas located some distance from each other do not convolute the analysis.

The second assumption is that the lease and the purchase are both totally funded using debt. The debt is leveraged using the security in the existing farm business.

### **A small scale purchase**

The additional productive scale of the farm assets to be purchased is assumed to be 2,500 dry sheep equivalents (DSE) which represents a 25 percent increase in productive scale when assessed as a proportion of the existing scale. This scale has been chosen as it represents a typical farm expansion scenario where a smaller scale farm business with reasonable equity is looking to achieve growth by expanding.

In reality, expansion opportunities as neat as this one, with the right scale at the right time, tend not to present themselves. They typically occur as an expansion with a greater or smaller increase in scale than desirable for existing comfort levels or at an inopportune time such as close to the previous expansion or drought when equity levels are still depleted.

The additional or marginal overhead costs associated with the purchased land is \$25,000, representing \$10 per additional DSE managed. This is required for additional fertiliser, rates, administration and some casual labour. Given the resource base is similar to that of the existing farm, gross profit and enterprise expenses are not expected to change relative to the existing farm business. This suggests that the existing business was not at optimal operating efficiency prior to the expansion. If it were at optimal operating efficiency labour costs would need to increase at a far greater rate.

As the marginal overhead costs on every additional DSE managed are lower than they are in the existing business, the marginal profit per DSE increases from \$35 per DSE for each existing DSE to \$50 per DSE on each additional DSE managed. This results in profitability, measured as return on assets managed, of 5.1% over the proposed purchase area. This represents a lift of 1.7% in profitability relative to the existing business and represents one of the critical drivers of success in farm expansion.



The purchase cost of the additional area inclusive of land, livestock, operating expenses, stamp duty and other on costs is \$2.48 million all of which is assumed to be funded as a liability with additional bank debt incurred at a weighted average cost of capital of 4 percent. A lease of the same scale requires \$444,000 in liabilities, 80 percent of which is funding livestock purchases with the remainder funding operating and lease costs.

This purchase opportunity will remain constant between all scenarios compared.

### **Scenario 1. The same scale lease**

The first analysis and scenario consist of a comparison between the purchase and a lease of the same scale. The production assumptions surrounding the lease are consistent with the purchased land resulting in equivalent marginal gross profit, enterprise expenses and overhead expenses as the purchase business. The key difference between the purchase and the lease is that the lease opportunity incurs the annual cost of the lease and the purchase opportunity incurs a significantly higher liability as bank debt to fund the purchase of the land.

The lease cost, which is assumed to be \$18 per DSE, represents 2.1% of the assumed \$850 per DSE land value. The liabilities incurred to lease the same scale as purchased equate to \$445,000 which is approximately six times less capital required relative to purchasing the same area. Cashflows start with total liabilities in year zero. They then include a stream of cash investment yields net of the costs of financing, lease and tax, which is assumed to be incurred at a rate of 30 percent on earnings. Finally, cashflows close with capital gains on land, livestock or both at the end of the period. Cash investment returns are assumed to be invested in offsetting the cost of liabilities (4 percent) rather than a more aggressive investment strategy.

### **The outcome**

Table 1 shows that while the rate of return on leasing is higher, at 9.9 percent, compared to the return from purchasing which returns 6.6 percent, the gross value of the net discounted investment is lower. The rate of return is higher than with purchasing because the net return of the investment in leasing is greater as a proportion of the up-front cost of the investment, shown in this scenario as marginal liabilities.

The net discounted cash return from the leasing investment however is lower with a total return of \$327,075 compared with \$730,543 from land purchasing. This occurs because the capital gain on land generates higher returns than operating returns after costs.

It is reasonable to expect that the magnitude of the difference between the purchase and lease would be greater with an expectation of a greater weighting of return towards purchasing. The reason this is not the case is that each year the return has been discounted. Most of the return in the purchase scenario comes from the capital gain which is generated in the final year of the cashflow. As the capital gain is received at the end of the cashflow it is worth less when measured in present value terms. This contrasts with leasing where larger annual operating returns are generated relative to purchasing.

Table 1 The same scale lease generates higher rates of return but lower absolute net returns.

Analysis component	Purchase	Lease	Difference
Marginal scale (DSE)	2,500	2,500	0%
Marginal liabilities (\$)	\$2,632,365	\$445,000	-83%
Marginal EBIT	\$125,000	\$125,000	0%
Marginal interest and lease costs	\$105,295	\$62,800	-40%
Marginal operating cash	\$14,794	\$43,540	194%
<b>Discounted NPV of wealth created</b>	<b>\$730,543</b>	<b>\$327,075</b>	<b>-55%</b>
<b>Internal rate of return</b>	<b>6.6%</b>	<b>9.9%</b>	
Capital gain to generate equivalent returns	5.4%		

Figure 1 shows that, assuming the same comparative scale, land purchasing returns are highly sensitive to capital growth while land leasing returns are highly sensitive to lease rate, represented here as a percentage of land value. At lease rates of 2 percent of land value capital gains of 5.4 percent are required to generate equivalent returns.

If capital growth of land exceeds 6 percent then leasing the same scale business can't compete, on a net return basis, as lease rates must be below improbable levels (less than one percent of land value).

This suggests, if investing in land for wealth creation through capital gain, then a view of capital that a view of, provided lease costs represent approximately 2 percent of the land value then leasing can deliver superior discounted returns to land purchasing but this outcome is dependent on capital growth being lower than 5.4 percent.



Figure 1. Where capital gains are lower than 5.4 percent land leasing of the same scale generates higher net returns

## Scenario 2. Land purchase compared with same total liabilities invested in leased area.

### A larger scale lease

Where liabilities between scenarios remain consistent, far greater scale can be leased relative to scale that is purchased. This occurs because most of the liabilities incurred in the land purchase expansion go towards funding the land. Most of the liabilities in the lease expansion are invested in livestock which represent around 15 percent of the combined land and livestock value when purchasing. Other requirements for capital when leasing include leasing and operating costs.

Scale of an additional 13,800 DSE can be leased bringing the total business scale to 23,800 DSE which is near double that of the land purchase scenario which sits at total scale of 12,500 DSE after the expansion.

The extent of the increase in scale in the lease scenario results in the near replication of the existing overhead cost structure which means that there is little reduction in overhead cost structure between the existing business and the proposed lease. The only reductions in overhead costs occur as the result of no requirement to pay rates or rents and slightly lower depreciation per productive unit (per DSE). Labour costs are assumed to be the same as in the pre-expansion business. These factors result in an overhead cost of \$23 per DSE which is \$2 per DSE lower than in the pre-expansion business but \$13 per DSE higher than in the land purchase scenario.

Lease costs are assumed to be \$18 per DSE equating to 2.1 percent of land value while gross profit and enterprise expenses are assumed to be the same as they were in the business prior to expansion. This financial performance results in EBIT before lease of \$37 per DSE and EBIT after lease of \$19 per DSE.

Accumulated wealth has been calculated after 10 years as the discounted (4 percent) sum of capital gain and annual returns net of interest and the assumed tax marginal tax rate of 30 percent over the ten year period.

### The outcome

Table 2 shows that the rate of return on leasing is marginally lower at 6.4 percent compared to the return from purchasing which returns 6.6 percent. The net discounted return from the leasing investment equates to \$687,042 compared with an only marginally higher return of \$730,543 from land purchasing.

This relationship holds true until capital gain reaches 6.83 percent or lease costs fall to \$17.60 per DSE. These are the points where net discounted returns are equivalent between comparisons.

*Table 2 Even with the same capital invested total net returns from leasing are lower than purchasing*

Analysis component	Purchase	Lease	Difference
Marginal scale (DSE)	2,500	13,782	451%
Marginal liabilities (\$)	\$2,632,365	\$2,632,365	0%
Marginal EBIT	\$125,000	\$509,935	308%
Marginal interest and lease costs	\$105,295	\$353,371	236%
Marginal operating cash	\$14,794	\$109,595	641%
<b>Discounted NPV of wealth created</b>	<b>\$730,543</b>	<b>\$687,043</b>	<b>-6%</b>
<b>Internal rate of return</b>	<b>6.6%</b>	<b>6.4%</b>	
Capital gain to generate equivalent returns	6.8%		

Figure 2 shows that land leasing returns are sensitive to the marginal lease scale managed. For the leasing opportunity to deliver equivalent discounted cash returns as the land purchase, scale of 14,655 DSE must be managed. This not only results in a significantly larger scale business, but it also increases liabilities to \$2.8 million which drives the loan to value ratio to 38%, representing a level unlikely to provide adequate security assuming a conventional funding source. Increasing by this scale also introduces other risks such as operational risk as there is no track record of delivery at such scale.

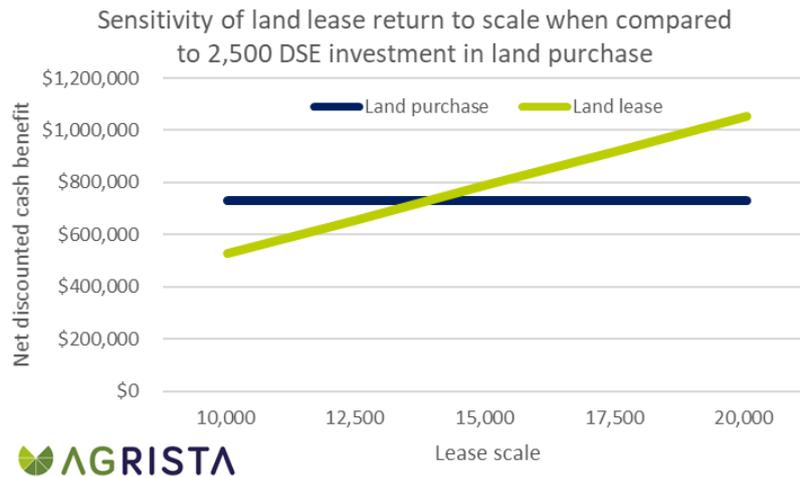


Figure 2. The benefits of land leasing returns are sensitive to scale

Figure 3 shows that, at comparative production between purchasing and leasing (the green line), leasing generates benefits over leasing if the lease rate falls below \$17.60. A seven percent discount in production of leased land relative to purchased land results in a \$400,000 change in outcome. This analysis has been presented as this situation can occur when businesses move from small scale to large scale without adequate investment in labour or consideration to the tactical issues and the timing of operational management to resolve them.

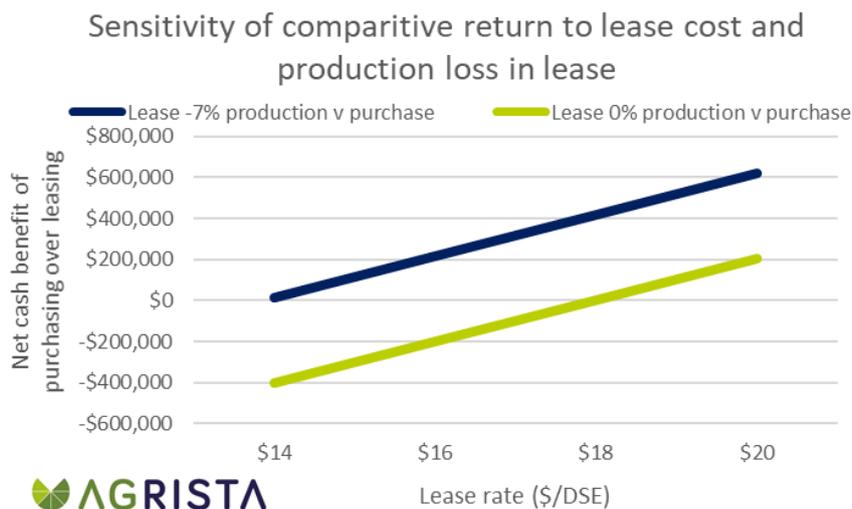


Figure 3. Production loss and lease rate affect the relative returns of purchasing against leasing

Table 3. Nearly five times the scale is required to generate equivalent net returns from leasing compared to purchasing.

Analysis component	Purchase	Lease	Difference
Marginal scale (DSE)	2,500	14,655	486%
Marginal liabilities (\$)	\$2,632,365	\$2,799,034	6%
Marginal EBIT	\$125,000	\$542,221	334%
Marginal interest and lease costs	\$105,295	\$375,745	257%
Marginal operating cash	\$14,794	\$116,534	688%
<b>Discounted NPV of wealth created</b>	<b>\$730,543</b>	<b>\$730,543</b>	<b>0%</b>
Capital gain to generate equivalent returns	7.0%		

### What this means to you

To conduct a comparison of leasing (as a tenant) versus purchasing there needs to be clarity surrounding whether it is scale or value of capital invested. The outcome of any comparison will be sensitive to lease rate, capital gain, extent of scale benefits achieved, interest rate and relative production differences.

At the same relative scale, there is a large difference in the amount of capital required for leasing relative to purchasing. Scale for expansion via land purchase will be constrained by the level of existing equity or security. At the same level of capital invested expansion via lease will provide greater scale relative to purchasing but relative returns are not necessarily greater. The sensitivities of the relative returns have been demonstrated throughout this article.

When comparing the same scale of expansion, the business case currently is stronger for land purchasing than leasing (as a tenant) assuming capital gains of 7 percent can be maintained.

The business case may sway towards leasing if current rates of capital growth decline and lease rates remain competitive and below the cost of debt.

There is no compelling business case to lease land as a tenant where land lease rates are similar to interest rates. Lease rates have to be at a discount to interest rates to warrant investment in leasing.

Even with competitive lease rates, the scale required to generate returns competitive with land purchasing, from leasing is significant. This results in the loss of any economies of scale and pushes loan to value ratios to levels unlikely to be readily accepted by financiers.

The comparative analysis of leasing with purchasing is highly sensitive to a range of assumptions. For more specific circumstances it is recommended to run the comparative analysis with assumptions specific to business circumstances.

John Francis

Agrista Director and Consultant

Mobile: 0427 259 005 | Email: [john@agrsta.com.au](mailto:john@agrsta.com.au) | Web: <https://www.agrsta.com.au>