SCALING UP CROP ENTERPRISES

PART 3:
PRODUCTION, ECONOMIES OF SCALE, LEASE COST AND CAPITAL GAIN – WHAT MATTERS MOST?

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Part 3: Production, economies of scale, lease cost and capital gain – what matters most?

In the last article (Part 2) we reported the financial outcome of a comparison between a farm land lease and operate model with a land purchase and operate model. Given the base assumptions there was little difference between options.

In this article (Part 3) we examine the impact of changes in production, economies of scale, lease cost and capital gainon the outcome. This is the type of analytical approach and presentation of data delivered in Agrista's recently released Farm Leasing for Growth Course. Further details on the course can be found here or go to https://www.agrista.com.au/leasing-business-growth

Sensitivities of the analysis

The outcome of the base case analysis shown in Part 2 is dependent on a number of key assumptions. These include production, costs, lease cost and capital gain. The aim of the following analysis is to demonstrate the extent to which the outcome is sensitive to each one of these factors. By understanding the extent to which changes in the inputs drive the outcomes a decision about leasing or purchasing will be better informed.

Figure 1 (below) shows that, given the base assumptions and comparative production levels leasing 1,800 hectares creates the same relative net wealth as purchasing a farm of 150 hectares.

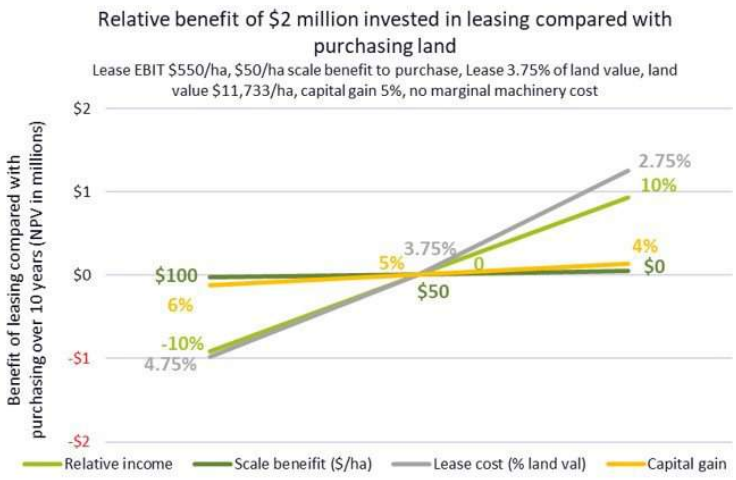


Figure 1. The benefits of land leasing returns are sensitive to income, efficiencies of scale, lease costs and capital gain

Figure 1 shows that the outcome of this analysis is sensitive to a range of factors including income, scale benefits, lease cost and capital gain. The numbers (figures) on the leftmost, middle and rightmost points on the lines represent adjustments to the assumptions in the analysis.

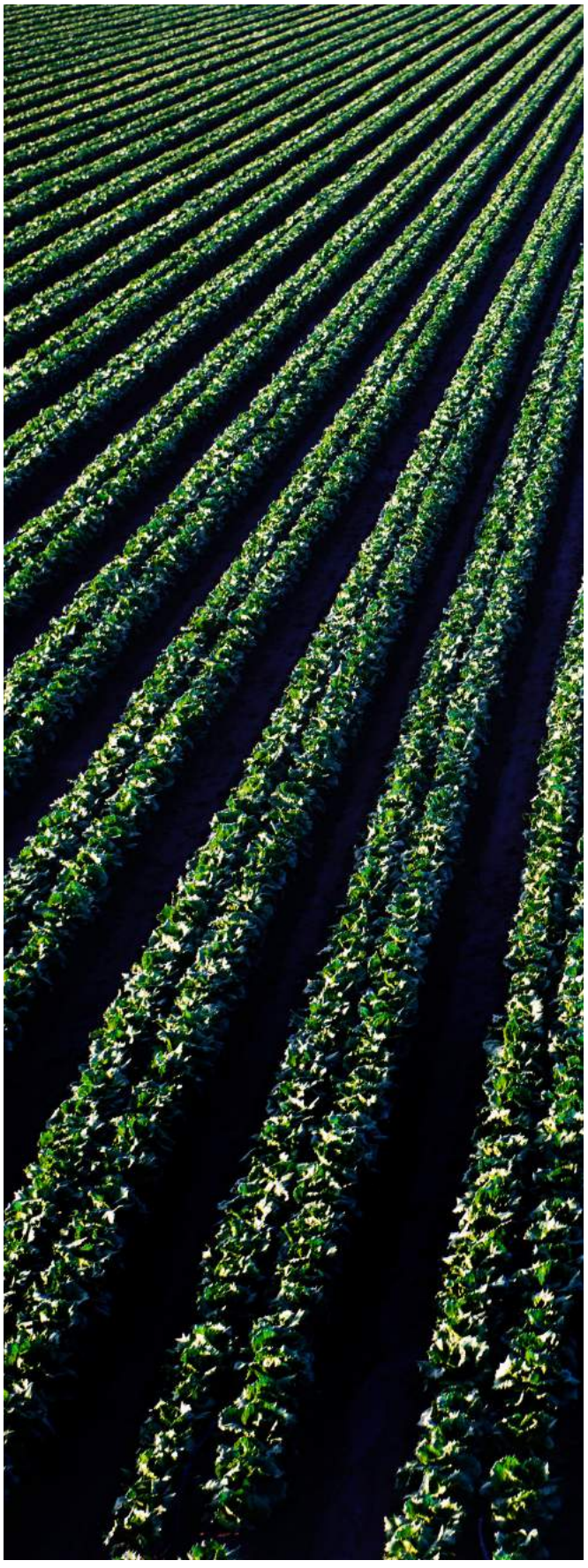
The base case is the middle point of the graph where income has not been adjusted from the base case, the scale benefit is $50 per hectare accrued only to the land purchase, the lease cost is 3.75% of land value and capital gain is 5%. The numbers at either end of the lines represent changes to these base assumptions.

The two lines that are relatively flat are capital growth and the value of economies of scale. This suggests that changes to the land purchase investment have a far smaller impact than do changes to factors influencing the land leasing investment.

Economies of scale

Economies of scale or, in other words, cost efficiencies driven by a lower marginal overhead cost structure on every additional hectare managed only applied to the land purchase. The reason for this was that, in this analysis, the leased area was similar to the existing farm area while the purchase area was far smaller. The overhead cost structure of the existing business was assumed to be replicated in the lease but a small benefit of operating scale ($50 per hectare) applied to the purchase.

As the operating scale of the purchased area was only small (151 hectares) relative to the leased area (1,800 hectares) any change in operating cost resulted in very little difference in the outcome. A further reason economies of scale had little relative impact on the outcome was that the operating earnings from the farm land purchase accounted for approximately 20 percent of the total wealth created while capital returns delivered the remainder.



Capital growth of land

Figure 1 shows that the capital growth of land has also resulted in a relatively minor impact on the analysis outcome. As with economies of scale, capital growth only applies to the land purchase scenario. As the landowner rather than the tenant operating the land is the beneficiary of capital growth in the lease scenario no value is applied to the lease.

There are two key reasons that capital growth has driven only small changes in analysis outcome. The first is that the discount rate of 8 percent applied to the cashflows results in future earnings being worth less in present day terms relative to their non discounted value.

The second reason for the low impact is that the timing of the majority of the weight in wealth creation from a land purchase comes in the last year of the cashflow. The cashflow allocates marginal operating benefit by year in the cashflow and then adds the liquidated value of assets in the last year of the cashflow. As the last year is further from the start of the cashflow than all other years the discounted value of a dollar in the last year of the cashflow is lower than all other years in the cashflow.

Lease rate

At the other extreme are the highly sensitive factors including production and lease rate. A change in lease rate of only 1 percent of land value from the base case of 3.75 percent of land value drives a relative difference of between $1 million and $1.25 million (discounted to today's value). In this case the cost of the increasing lease rate is disproportionate with the cost of decreasing lease rate.

The reason for this is that the starting capital of $2 million is assumed to fund the operating costs inclusive of the first year of the lease. As the lease price increases to 4.75 percent, the area available for leasing decreases because more capital is directed to the lease cost. As the lease cost per hectare increases the amount of land that can be leased with the same amount of capital decreases. This is shown in Figure 2. A change in lease cost from 3.75 to 4.75 percent decreases scale by 10 percent but a decrease in lease cost from 3.75 to 2.75 percent increases scale by 12 percent relative to the base case.

As the weighting of lease costs relative to operating costs and other costs funded by the starting capital changes with changes in lease costs the area of leased land changes by a different weighting. Thus the relative financial value from a fall in lease costs is greater than the relative financial value of an increase in lease costs.

Income/production

In this analysis, $2 million in funding a lease results in a near doubling of scale. This analysis is driven by the assumption that there is no loss in production with the change in business scale from leasing or purchasing.

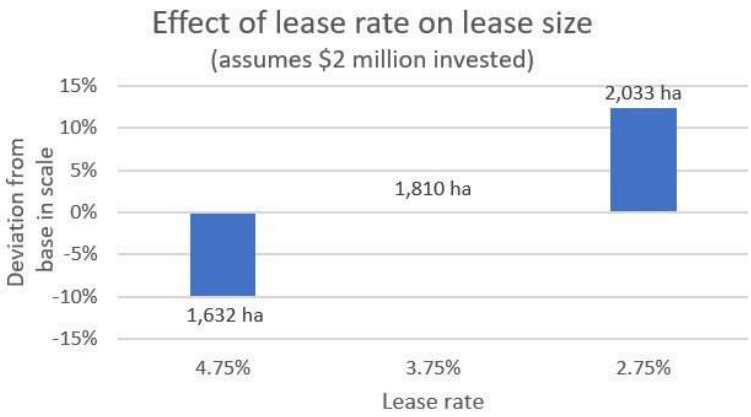


Figure 2. As lease rate increases or decreases the scale of the lease changes.

It does not always follow that production is maintained when scale is doubled. Operational risk can increase with an increase in scale and that exposes not only the expansion but the existing business as well. The slope of the relative income line with a change of positive and negative ten percent indicates that relatively small changes in production drive large changes in wealth creation with a discounted value of approximately $900,000. Given the sensitivity, this needs careful consideration before expanding.

What happens if more plant and equipment is required?

If the existing plant and equipment doesn't have the capacity for the additional leased area, then the options are to contract a proportion of the operations or to purchase more plant. Either way there is an impact on the outcome due to more capital being deployed in operations or plant.

Table 1. As machinery costs increase due to scale in crop leases the outcomes of the analysis change

Machinery option -->	Use existing	Buy more plant	Contract % ops
Case	Base	$500K Plant	$100/ha
Lease rate = purchase	3.75%	3.50%	2.90%
Lease area (ha)	1,810	1,394	1,802

Table 1 shows the impact of the requirement for increased capital outlay on plant or contract costs. The row titled "Lease rate = purchase" refers to the maximum lease rate, expressed as a percentage of land value, that can be paid to create wealth equivalent to purchasing and operating a 150 hectare land area.

The requirement to purchase more machinery erodes the capacity to pay the same lease rate for an equivalent return in land purchasing. This means that if the lease rate was maintained at 3.75 percent of land value the business case to purchase remains more compelling.

The analysis also shows that as more investment is made in additional plant ($500,000 in this case) the area available for lease decreases which drives the need to pay a lower lease rate to compete with purchasing. This occurs as it is assumed that $2 million is the capital deployment limit.

If the option to contract results in marginal operating costs of $100 per hectare across the leased area then operating profit is assumed to decline by this amount. This means that the lease rate that can be offered to create the same level of wealth from purchasing 150 hectares decreases to 2.9 percent of land value.

Or, in other words, if the lease rate was maintained at 3.75 percent of land value the business case to purchase becomes far more compelling.

What this means to you.

The wealth created from leasing is highly sensitive to lease rate and any factor that drives differences in production levels. This is influenced by the magnitude of the operating scale for the lease relative to the land purchase.

Where lease rates in cropping exceed 3.75 percent of land value and the expectation is for capital growth of land to exceed compounding rates of 5 percent per annum, then the business case is weighted in favour of land purchasing. This doesn't mean that there is no opportunity in leasing land, it simply means that options for wealth creation need careful analysis with a firm view on assumptions that influence the outcome.

Even with competitive lease rates, the scale required to generate returns competitive with land purchasing, from leasing is significant. This can not only result in the loss of any significant economies of scale which at smaller scale offer a major incentive to expand but also induce production risk over the whole business.

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.

In next weeks final article we look at sensitivity of the outputs of this analysis to disparity in land value based on scale. For more information on Agrista's Farm leasing for growth course head to https://www.agrista.com.au/leasing-business-growth

Earlybird Discount

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