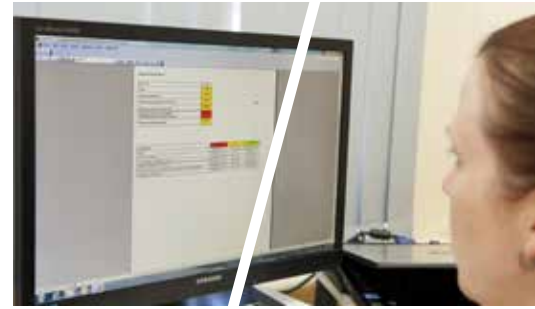


## Machinery Investment Ratio



What is the optimal machinery investment for my business?

### KEY MESSAGES

- Businesses should aim for a machinery investment ratio of 0.8 : 1.
- A high ratio may mean your business is overcapitalised and can lead to financial stress.
- Ratios that are too low can also impact your businesses efficiency and risk.
- Business policies for how machinery investments are made should be created to guide your decision making.

### WHAT ARE OTHER BUSINESSES ACHIEVING?

#### Machinery Investment Ratio

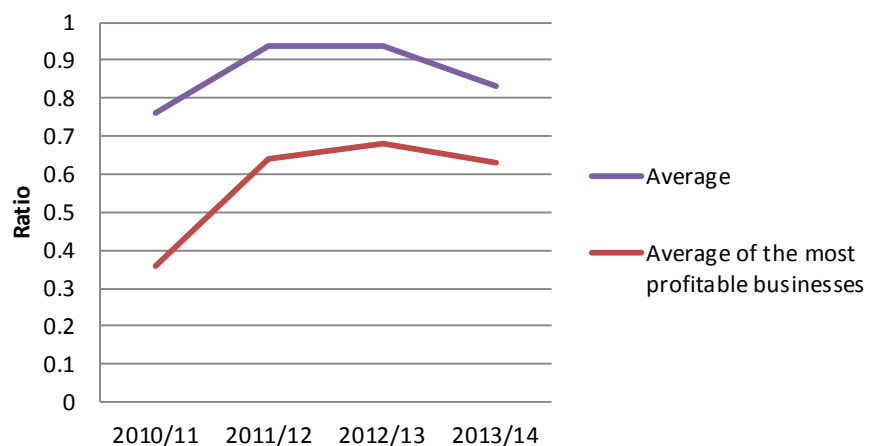


Figure 1 Trend in combined SnapShot data for the Machinery Investment Ratio

### WHAT IS A MACHINERY INVESTMENT RATIO?

Machinery investment ratio is the measure of machinery capitalisation in your business. It indicates what your business has invested into plant and equipment, in comparison with the level of total income generated by the business. Ideally, businesses should be operating at a machinery investment ratio below 0.8 : 1.

The industry standard for this benchmark is to have less than \$0.80 invested in machinery per \$1.00 of gross farm income ie. 0.8 : 1.

This benchmark is linked to income, so in a low income year this will reflect a high ratio and vice versa. Due to this, looking at the business average and trend over a few years is more robust and beneficial.

### WHAT DOES THIS MEAN FOR MY BUSINESS?

Generally, appropriate capitalisation means that the business is operating machinery that is adequate for the business needs, and maximising the income that is generated from this investment.

If your business has a machinery investment ratio of 0.8 : 1.2, it is an indication that the business has adequate investment into plant and equipment.

In the instance that the ratio is very low, it should be reviewed. This may not always be ideal for your business as it can reflect undercapitalisation. This can impact your operational efficiency, increase fuel consumption and labour cost, and potentially lead to high maintenance costs or risk of breakdown at a key time.

It is important to understand if the low ratio is linked to undercapitalisation as it may be impacting your businesses income and productivity.

A high figure demonstrates a high investment into machinery, which means the business is most likely overcapitalised in relation to plant and equipment.

Investment into machinery can require large amounts of capital, often a scarce resource. When your business is overcapitalised with a high machinery investment ratio it can lead to financial stress or sub-optimal levels of profitability.

# FACT SHEET

## WHAT ACTIONS OR CONSIDERATIONS DO I NEED TO MAKE?

Decisions regarding machinery are complex and often require significant capital. Sometimes these decisions are driven by emotion, and ideally a business case should be developed for why the investment is necessary, exploring different options.

Businesses are encouraged to develop a machinery decision making policy. It should consider machinery type, brand, purpose, upgrade frequency, support, budget, level of technology, shedding, repairs and maintenance, depreciation, additional income or costs and any other relevant factors. This helps to support an informed decision and remove the associated emotion or favouritism that might creep in.

Regular reviews of efficiency can help to identify opportunities to improve. By calculating work rates of different operations you can tell how efficient an operation being undertaken is.

The formula for calculating a machinery work rate is:

$$\text{Work rate in ha/hr} = \frac{(\text{Speed (km/hr)} \times \text{width (m)}) \times \text{field efficiency \%}}{10}$$

If you are sowing a crop at 8km/hr, using an 18.33m air seeder and operating at 80% field efficiency, you should be able to sow the crop at 11.73ha/hr.

$$\text{Work rate in ha/hr} = \frac{(8\text{km/hr} \times 18.33\text{m}) \times 0.8}{10} = 11.73\text{ha/hr}$$

The formula for calculating field efficiency is:

$$\text{Field efficiency \%} = \frac{\text{Time spent operating the machine}}{\text{Total time spent in the paddock}} \times 100$$

In addition to time spent operating the machine, total time spent in a paddock generally includes filling time, travel, fixing breakdowns, turning, overlapping and undertaking maintenance.

If you spend a total of 3 hours (180mins) for a paddock, and of this, 130 minutes is spent operating the machine and 50 minutes is spent filling, travelling, etc. the field efficiency is 72%.

$$\text{Field efficiency \%} = \frac{130}{180} \times 100 = 72\%$$

Field efficiency can be a highly variable factor between farms. The table below demonstrates the impact of field efficiency on work rate.

Speed	Width	Efficiency	Work Rate ha/hr
8	18.33	80%	11.73
8	18.33	70%	10.26
8	18.33	60%	8.7

## HOW RURAL DIRECTIONS CAN HELP

Rural Directions SnapShot™ tool calculates your machinery investment ratio, and by doing this year on year you can reveal trends or determine if further investigations into machinery utilisation is required.

Our team can consult with you on your machinery decision making, help you create a policy, assess the feasibility of purchasing particular machinery, and work with you to ensure the chosen investment is the right one for your business.

We can give you tools, frameworks and processes for machinery decision making and coach you on how to use these. This will make your decision making in the future more strategic and less stressful.

For more information about SnapShot™ or profit drivers, contact us on 08 8841 4500 or visit [www.ruraldirections.com](http://www.ruraldirections.com)