



RFM DISCUSSION PAPER #3:

Capital growth of agricultural assets and the impact this will have for unitholders in the Rural Funds Group (RFF).

Vineyard, Barossa Valley, August 2010

UNDERSTANDING CAPITAL GROWTH

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Figure 1 is a diagram that has been included in the numerous presentations that RFM has lodged with the ASX on behalf of RFF.

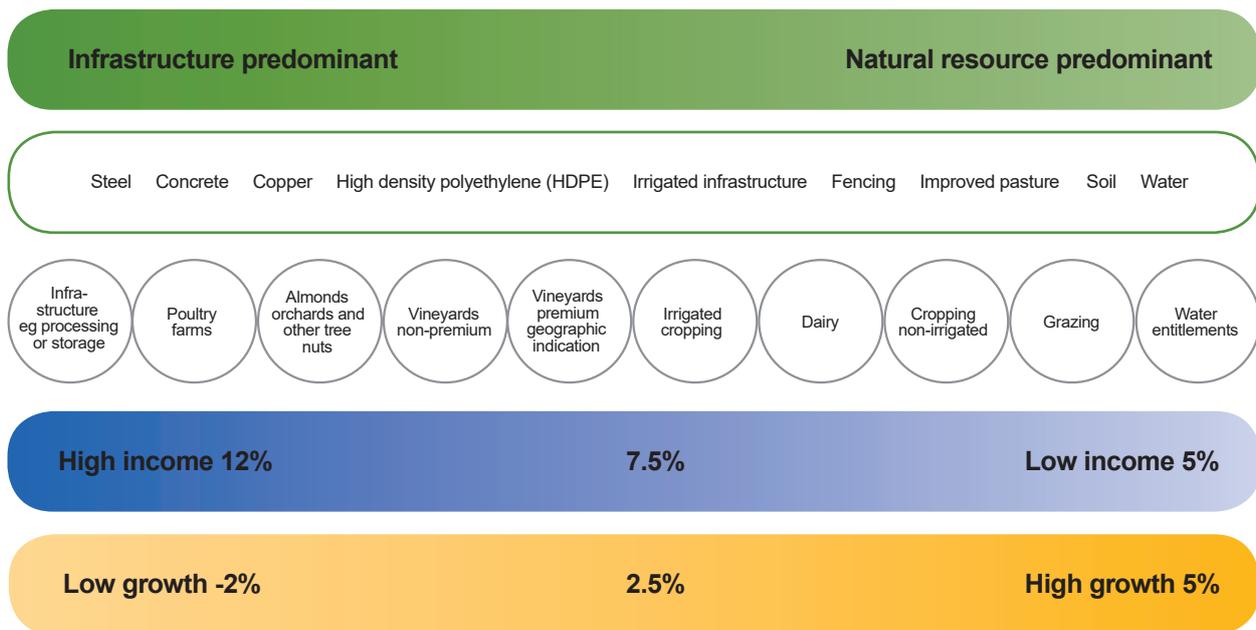
It is designed to illustrate the range and characteristics of agricultural assets that are common in Australia. RFF's assets are concentrated on the left hand side of this diagram – assets that have a large infrastructure component, generating relatively high rates of income but lower rates of capital growth. This is because they include substantial infrastructure, such as irrigation equipment and trees. This element of their asset base depreciates over time for which higher rents are paid as compensation.

The natural resource component of these assets, such as water entitlements and fertile soils, generally have

appreciated over time. It is this element of the RFF portfolio that may generate capital growth.

Since 1978, when systematic measurement commenced in Australia, farm values have achieved compound growth of 4.4% per annum. A longer data set is available from the United States, where over the past 115 years farm values have increased by 4.5% per annum. **Figure 2** illustrates a major cause of increasing farm values, by demonstrating the correlation between changing agricultural commodity prices and changing farm values. As expected, the capital value of farms rise at a faster rate when agricultural commodities are rising.

Figure 1: Range of agricultural investments¹



¹ The income and growth figures presented in Figure 1 have been provided to differentiate the profile of income and growth that can be derived from different assets. They are based on RFM's experience and observations of agricultural lease transactions and historical rates of growth. They are neither forecasts nor projections of future returns. Past performance is not a guide to future performance.

During the 115 years displayed in the chart, agricultural commodity prices in US dollars increased by an average of 2.3% per annum, while inflation averaged 3% per annum. As a result, the real price being paid to farmers for the commodities they produce has been declining by 0.7% per annum. Given this gradual erosion of value, there must be an additional driver of capital growth.

Australian data, though more recent, tells the same story. **Figure 3** presents the price paid to Australian beef producers over the past 45 years. During that period the nominal price paid for a kilo of beef has risen from \$0.66 per kg to \$5.52 per kg, an increase of 4.5% per annum against an inflation rate of 5.4% per annum.

The second line on **Figure 3**, plots the available data for the increase in value of cattle farms over a similar timeframe. During that period, cattle farms increased in value by 4.7% per annum, a remarkable rate of capital growth given the real price paid for cattle had declined by 0.9% per annum.

If commodity prices are declining in real terms, while the costs of running farm businesses are rising at the same rate as inflation, then every farmer in the world should be bankrupt. Instead, we find that over time they are prepared to pay more and more for farms. In fact enthusiasm for farming is such that the rate of increase in farm values has been significantly greater than inflation. How can this be?

To simplify the discussion, let us assume that every farm in the world is exactly the same. If this were the case, the only driver of farm values would be the profit that can be derived from them, which can be calculated as revenue minus expenses. If expenses are rising roughly with inflation, and given we know that commodity prices are falling behind in real terms, then the only way that farm profits can be rising is through increased productivity.

Throughout the past 115 years, farm productivity improved as a consequence of several major new innovations and countless minor ones. The first major innovation of last century was the tractor. While steam driven traction engines had been deployed in agriculture since the 1870s, these enormous machines, weighing as much as 14 tonnes, were very expensive and prone to bogging. The other source of power were draft horses, which ate up to one third of a farm's output.

During World War One, Henry Ford introduced the Fordson tractor and sales exploded as a consequence of labour shortages and high commodity prices.

In 1922 Ford discounted the Fordson from \$625 to \$395, in response to the crash in farm values and commodity prices. This triggered a price war, with Ford's market share reaching 44%, and a swift recovery in sales during the balance of the 1920s.

The next major productivity breakthrough to occur in farming was the Green Revolution of the 1950s and 1960s. Manufactured fertilisers and improved cereal grain varieties were combined to dramatically increase crop yields. During the period 1951 to 1968, wheat yields in the US increased 72%, corn yields increased 117% and soybeans 28%.

A third technological leap to drive farm productivity began in the 1990s with the introduction of genetically modified plants combined with continued improvements in plant breeding. Since that time, yields for crops such as corn, soybeans and cotton have increased by 40%, while the use of pesticides to control insects has declined massively.⁴

In addition to these three major breakthroughs specific to agriculture, there have been numerous technologies available to industry and households that have also

**Figure 2 - US Commodity Prices and Farmland Values²
1900 to 2015, 10 year moving average of percentage price change**

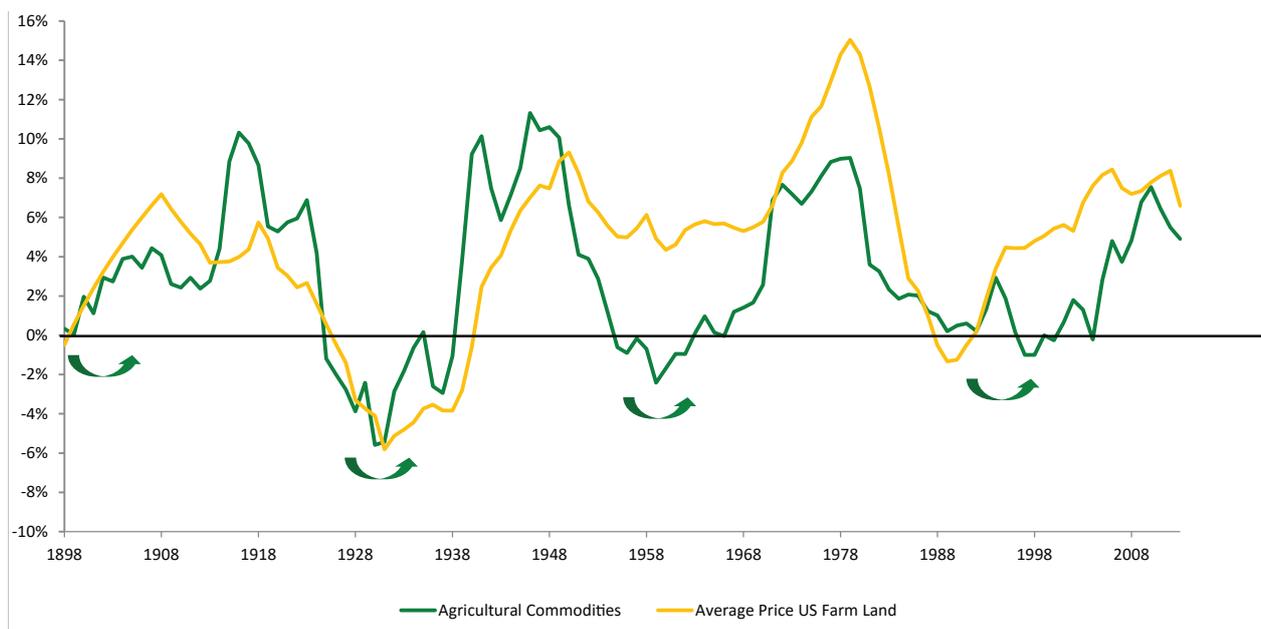
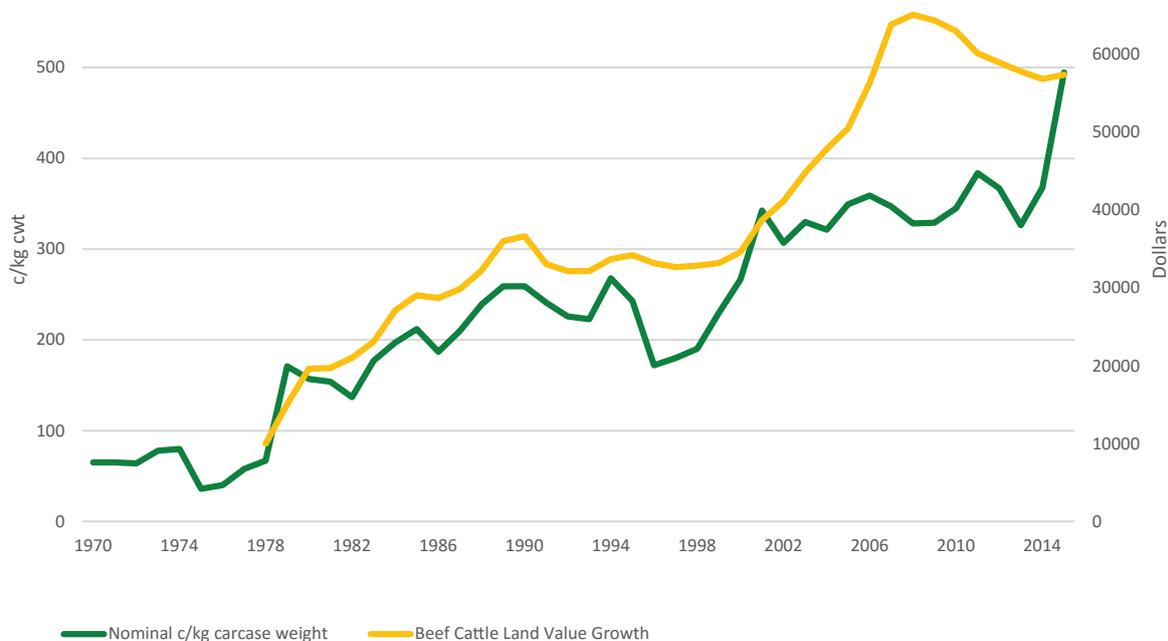


Figure 3 - Nominal Beef Prices and Cattle Property Growth³



assisted farm productivity. Returning to the Australian cattle industry charted in **Figure 3**, during that period this industry benefited from the construction of roads and the utilisation of road trains to reduce the cost of freight. It has deployed solar powered bores to replace windmills, and rolled out poly pipes and water troughs to open up pastures previously unusable for lack of water. Bovine brucellosis and tuberculosis were eradicated, while cattle genetics continue to improve each year through breeding. And perhaps most significantly, farmers have invested in new pasture species that have lifted productivity across millions of hectares by improving animal nutrition and therefore daily weight gain and fertility.

Inside the farm office, farmers switched from mail, to fax, to email. In the stock yard, farmers acquired electronic scales and electronic ear tags so they could monitor weight gain of individual animals using digitised record keeping. And in their pockets they put a smart phone to communicate conveniently and monitor the weather in forward months, instead of looking at what the sky might hold for tomorrow.

All of these innovations have enabled farmers to not only compensate for the declining real price paid for their produce, but also to increase their profits. It is these growing profits that give farmers the confidence, appetite and financial capacity to continue to expand their business by buying new farms. And this is why farm values have gone up faster than inflation.

Sometimes capital growth is negative. Looking once more at **Figure 2**, there are two periods where the change in farm values declined. From 1921 to 1933, US farm values collapsed as commodity prices dropped due to the recovery of European food production after World War One and the onset of the Great Depression. Farm values dropped again from 1983 to 1987 in response to falling

commodity prices and high interest rates. **Figure 3** on the Australian cattle industry also shows a recent fall in property values.

While declining commodity prices catalysed these declines, they were exacerbated by excessive debt. In the two US examples, secondary mortgage financiers poured additional liquidity into the sector thereby inflating farm values. At the beginning of this century, the Australian cattle industry saw land values appreciate quickly as banks supplied additional liquidity based on higher and sometimes unsustainable loan to value ratios. Understanding the risks to capital values can assist an astute investor to avoid speculative bubbles and prepare for opportunity.

RFF's assets are leased for long periods with indexation clauses that are not generally tied to changes in the capital value of the assets. For this reason the benefits of any capital growth will not be realised until a lease comes up for renewal or renegotiation. Nevertheless, in the interim, unitholders benefit from the indexation of lease rentals, underwritten by the profit increases that flow to lessees from increasing nominal commodity prices combined with improving productivity.

Since listing, the market price of RFF units has increased and the distribution yield has compressed. A consequence of this movement is that it is now possible to consider acquiring assets to the right hand side of **Figure 1** – assets with lower rental yields but higher rates of capital growth. Leases for assets like this, such as cattle properties, will have market review clauses that enable rent increases, providing there has been capital growth. For this reason, understanding what drives capital growth is an important investment consideration for RFF unitholders.

2 Source: Bureau of Labor Statistics & US Census Bureau
 3 Source: MLA & ABARES
 4 Source: USDA Crop Production Historical Track Records