

DAIRY INVESTMENT FUND LIMITED



FINANCIAL PERFORMANCE OF DAIRY FARMS BY REGION

NOVEMBER 2010

Dairy Investment Fund Limited (DIFL)
is a specialised long-term private equity
investor in the de-regulating
New Zealand dairy sector.



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Executive Summary

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NZ dairy farm values have fallen from peak values of up to \$40,000 per Ha down to current prices of just below \$30,000. In our research report of Oct 2010 we presented the case for farm values having a "fair value " of \$23,000 per ha. Of course that is an average value and farms will have different values by region depending on climate and soils (productivity). This report looks at financial performance by region and makes observations about regional values.

Canterbury exhibits the highest earnings before interest and tax (EBIT) per hectare (ha) and per total farm assets (TFA) with the lowest volatility when compared to Waikato/Bay of Plenty, Lower North Island and Southland. Higher stocking rates and higher production per cow are key drivers that offset higher cost per kilogram of milk solids (kg ms).

This is a surprise to us. We felt that Canterbury's intensive farming systems would be more profitable (lower gross margin but high volumes) but higher risk. We therefore expected Canterbury to have the highest volatility of profits whereas they have the least variance of profitability. The results imply that if we were to apply WACC's to farm valuations on a regional level, Canterbury would have the lowest WACC and Waikato/BOP the highest! What is not factored into these numbers is the event risk around costs of water. The Canterbury farms are reliant on water and the profitability and this profitability analysis shows just how significant the risk is of both access to and the future costs of water.

Conclusions and Recommendations

The analysis does indicate that irrigated Canterbury dairy farms are, on average, the most profitable and least risky.

However assigning any cost of capital to the cashflows on a specific investment in Canterbury should include a contingency for additional environmental and irrigation compliance costs.

The investor needs to be aware of the significant event risk of national and local policy developments associated with water.

Taking into account the regional analysis above it appears to us that:

- Canterbury is the least over valued region
- Waikato is the most overvalued region



Background to the Analysis

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There are limitations in the data used for the analysis from a statistician's viewpoint but the underlying trends are considered correct.

The data was sourced from MAF Farm monitoring reports. Sample size is small for each region and subsequent revisions of production data can be significant. The data used in this report is that presented by MAF for that year before revisions.

There also appears to be some inconsistency within and between regions. The models for each region have also been intermittently tweaked by MAF to reflect a general increase in average farm size. The per hectare figures are based on the area of the milking platform.

The EBIT calculation = Farm Revenue less (farm working expenses + depreciation + drawings). No adjustment is made for or changing land values; changes in stock numbers or stock values, or allowances for run-off's etc. Income tax is ignored.

One assumption is that the enterprise is owned by just one farmer and their wife/ partner. This becomes important because the scale of the model farms is quite different. One set of similar drawing spread over 90,000 kg is quite different to a similar set of drawings over 300,000 kg ms. Drawings for the large scale units appear light!

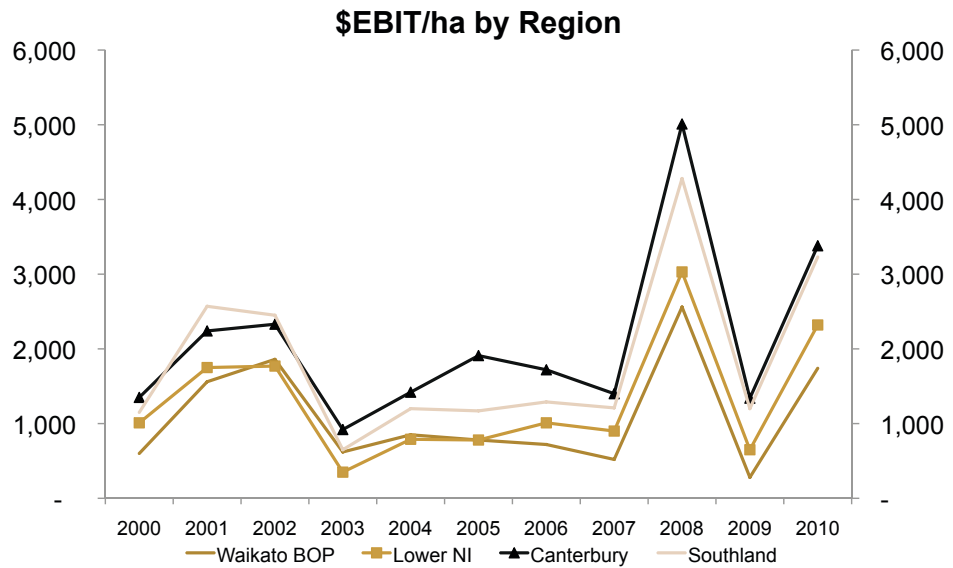
Background to the Analysis (cont)

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EBIT/ha

Canterbury exhibits the highest earnings before interest and tax (EBIT) per milking platform hectare (ha)

Graph 1



Volatility in EBIT/ha is lowest albeit still high in Canterbury.

Table 1

Volatility in EBIT/ha			
Region	Period Av (Years)		
	Five	Nine	Eleven
Canterbury	62	60	56
Southland	64	69	62
Lower NI	66	69	62
Waikato/BOP	82	69	65

Volatility is calculated by expressing the standard deviation of the region data series on EBIT/ha as a percentage of the region average.



Background to the Analysis (cont)

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The regions are dominated by the same processor i.e. the revenue per unit of milk is the same.

The reasons for the lower volatility for Canterbury are considered to include:

- A bigger increase in stocking rate and
- A bigger increase in production per cow.

Changes to the MAF models give some “noisy” numbers on percentage change to some indices e.g. the size of the milking platform and total production. Absolute numbers illustrate the differences between regions.

Table 2

Comparison of Selected Production Indicators by Region						
Region	Total Prodn 09/10 (000 kg ms)	Stocking Rate (Cows/ha)		Three Yr Av Prod/Cow (kg ms)	Prodn/ha	
		1999/00	2009/10		1999/00	2009/10
Canterbury	291	2.7	3.2	390	910	1,390
Southland	196	2.2	2.8	355	790	1,020
Lower NI	118	2.6	2.7	310	790	870
Waik/BOP	97	2.7	2.8	300	750	870

The above two profit drivers in turn are considered to be influenced in Canterbury by:

- The availability and high reliability of irrigation water for summer/ autumn pasture growth and
- improvements to the efficiency of applying irrigation water (pivots versus wild flooding via border dykes).

Water reduces (but does not eliminate) the influence of the weather on annual pasture production.

Cereal grain is also increasing as a proportion of the total feed used by cows.

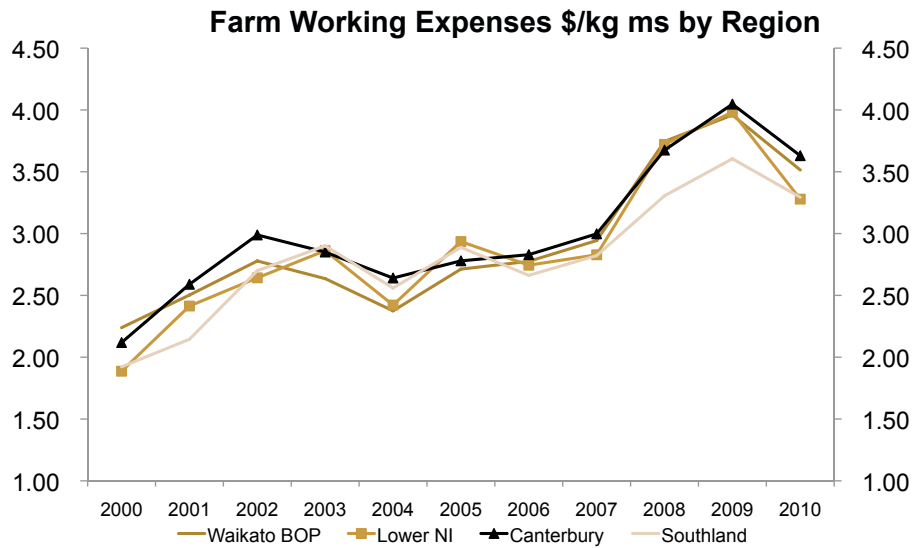
Cereal grains have been fed in Canterbury for several years on a small scale. The boom in the milk price made grain feeding more economic and even more so when the grain price collapsed and land values kept escalating. Grains provide consistent quality feed and the volume feed is easily controlled. The prices of local grains are influenced by the international price of milling wheat and the volume of local supply.

Costs and Gross Margin

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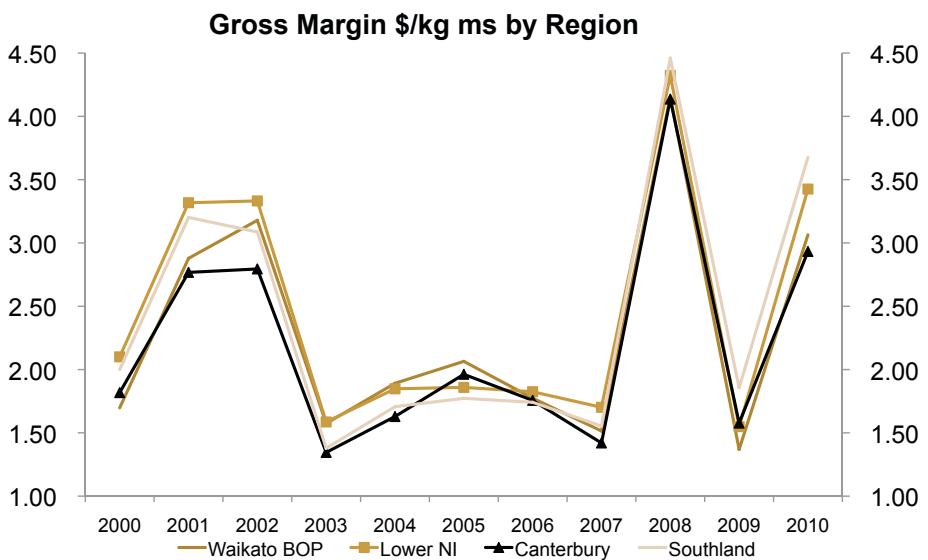
Farm working expenses (i.e. running costs before interest, depreciation and living expenses) are higher/kg ms in Canterbury.

Graph 2



The gross margin (Gross Revenue less farm working expenses and depreciation) is also lower for Canterbury.

Graph 3

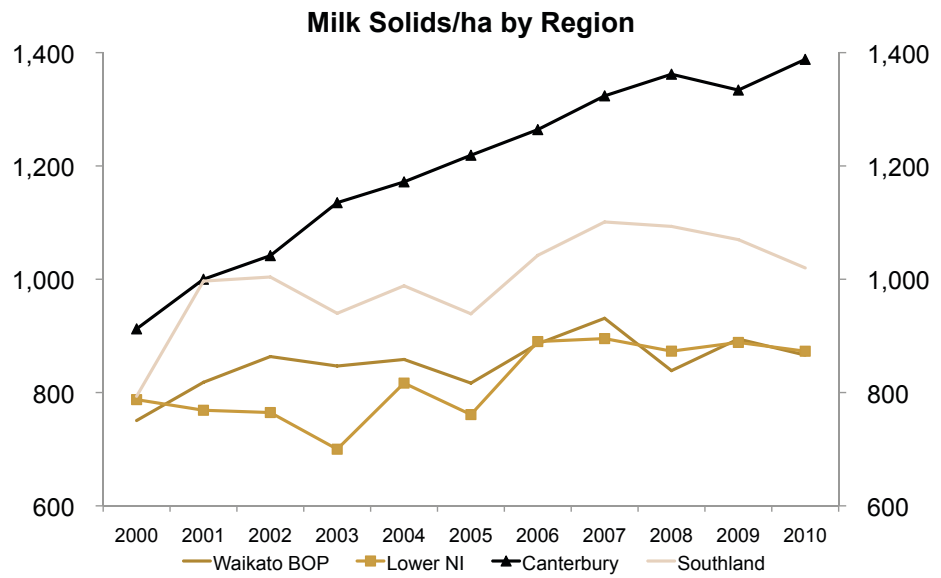


Production

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The previously noted high stocking rate and production per cow in Canterbury results in the highest average production per hectare.

Graph 4



The end result is Canterbury has the highest EBIT/ha as shown in Graph 1.



Farm Capital

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Large scale does mean more capital (land, buildings, stock, plant and dairy company shares).

Table 3

Farm Capital by Region					
Region	Total Farm Capital			Land and Buildings	
	\$m	\$/ha	\$/kg ms	\$/ha	\$/kg ms
Canterbury	12.0	57,400	40.70	44,700	32.40
Southland	8.9	46,200	41.960	36,000	35.70
Lower NI	6.5	48,300	49.90	35,600	44.50
Waikato/BOP	5.1	45,700	45.30	31,200	41.60

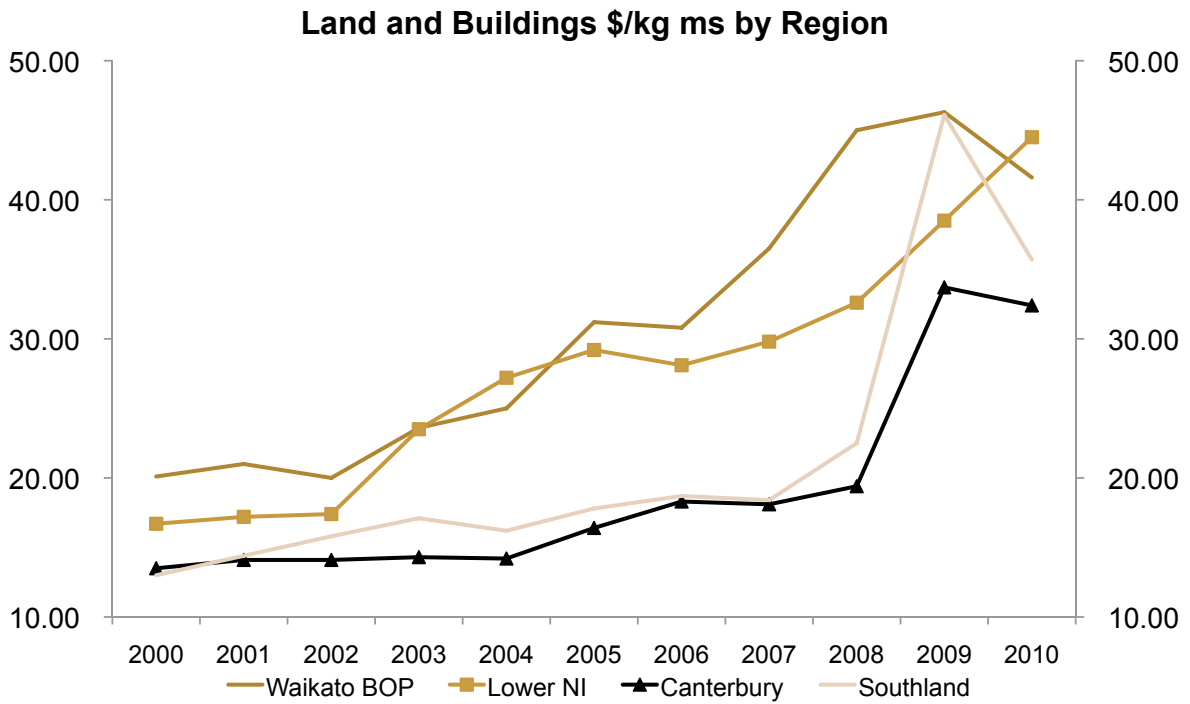
Capital is based on values in mid-2009. Some adjustments had been made to the value of land but the adjustments appear inconsistent and may now not sufficiently reflect the poor tone of the rural real estate market. Canterbury is a stand out in this regard (or do the values used reflect the conclusions of this research?)



Farm Capital

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Graph 5



Adjusting Canterbury values downward obviously enhances the return on total farm capital.

Table 4

EBIT as a Percentage Total Farm Capital by Region				
Region	Period Average (years)			
	Three	Five	Nine	Eleven
Canterbury	6.5	5.6	5.9	6.8
Southland	6.5	5.5	5.5	6.5
Lower NI	4.5	3.8	3.8	4.6
Waikato/BOP	3.1	2.5	3.0	3.5



Comments

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A charge for water and ground water contamination are growing issues for irrigated dairy farms in Canterbury.

The results for Canterbury dairy farms have to be tempered with the following observations. The costs do not include any allow any charge for water. The costs of extraction and delivery are included but to date, farmers do not pay for the water itself. Political pressure from lobby groups is mounting to change that. Water permits are required to extract ground water and are now limited to a fixed amount/annum based on soil type. The volume taken is metered. Larger takes will be remotely monitored by Environment Canterbury. Compliance costs associated with irrigation are increasing.

Lobby groups are also concerned about the impact on the quality of ground water from high stocking rate and the accompanying effluent loadings being applied to porous soils. High rates of fertiliser per hectare are a concern of lobby groups for the same reason. Nutrient budgeting is helping in this regard but not eliminated the issue.

It has to be said that similar pressures are being applied to irrigated dairy farms in other regions. The industry in general is also being subject to constant and increasing political pressure on its real or perceived impact on the environment. It may well be that a similar nutrient discharge rate /annum is applied to irrigated dairy farms in the region, similar to that applied to nitrogen in the Taupo catchment.

A water permit is issued for a period of (usually 35r years) but is reviewable at any time. The potential impact on irrigated dairy farms from regional water resource plans under preparation for Canterbury region can only be speculated on at this point in time.

It also has to be said that figures used are averages. There are farms in Canterbury producing considerably more milk solids/ha than the MAF model indicates. This observation applies equally to other regions and they may well be generating a similar return on assets as the average MAF Canterbury model farm.

Comment

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Our valuation analysis of NZ dairy farms suggest they are fair value on a dcf basis as below:

Where do we value NZ dairy farms?

Methodology

- DCF...of free cashflows (EBIT per Ha)

WACC...6.9%

- Risk free = 6.0%

- MRP = 7.0%

- Debt (US)=4.25%

- D/D+E=50%

- Asset beta=0.35

EBIT per Ha = \$1750 NZD

EBIT per Ha (NZD)	1,750.00
Farmer WACC	6.9%
growth rate	2.5%
tax rate	30.0%
Total Ha's	1,519,120
EV	\$ 41,936,270,423
Less Cow value	\$ 6,485,535,250
EV NZD	\$ 35,450,735,173
NZ EV per Ha	\$ 23,336

Taking into account the regional analysis above it appears to us that:

Canterbury is the least over valued region

Waikato is the most overvalued region

The next stage of this research is to apply a regional WACC to NZ dairy farms and calculate a dcf fair value by region.



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