

Dairy farm profitability

Everyone knows that dairy farms are doing well, don't they? I have even just read in the February issue of the NZ Journal of Forestry John Roper saying "... *Underpinning all this change (from pine trees to dairy farms) is the fact that alternative land uses are offering ... higher returns than pine plantations (and that these) changes are the response of a market economy to economic drivers of the time ...*". In my comments below, I am not picking on John. I have merely referred to what he said in his article as an example. He is just one of probably over 4 million people in New Zealand who believe what they have read in the paper, seen on TV, heard in conversation, etc about how dairying is booming. And the evidence of ripped out trees and nice pasture being put in their place does seem to support this.

So I gathered together a bit of information from MAF and from Dexcel about the costs and returns relating to dairy farms. It was interesting – especially when you take inflation out of the picture – something that farmers and more importantly their advisers (including some people in MAF when rural statistics are involved) do not seem to do.

The returns were easy to get. I now have them from 1950 onwards – the earlier figures having been converted into cents per kg of milk solids from the units used at that time – they used to be paid in cents (and earlier pence) per kg of milk fat. And guess what! Expressed in 2005 dollars, the 2005 price was 49% of the unit price that was received in 1950! And only 83% of the price received as recently as 2001! To surprise you more, the price forecast by MAF for 2006 – which so far looks to be quite well predicted – is 84.5% of that low 2005 price. And the predicted price for 2007 is 79% of the 2005 price. The trend is not what you would expect if dairying is really doing well.

That is all very interesting and perhaps a wee bit scary but the enthusiasts will then say "*Yes but production is going up*". So it is and I regret that I have only been able to find physical production statistics from 1990 onwards. But I do have expenses per hectare from 1980.

For the production increases to give gross revenues that are just equal to the 2001 figure, would require an average increase of 4.79% per year from 2001 – 2005, 18.48% from 2005 – 2006 and another 6.68% from 2006 – 2007. The production data I have from MAF – the production figures from the MAF Waikato/BOP Dairy Farm Model - do not support this. Production per hectare was 818 kg/ha in 2001; was 817 kg/ha in 2005; was predicted by MAF to be 853 in 2006; and was predicted by me to be 876 kg/ha in 2007 (a 2.7% increase over the 2006 figure, which is higher than the apparent annual increase to MAF's 2006 figure from any year prior to 2005).

And do not forget that costs have risen as well.

What the figures ultimately say overall is this.

Net return per hectare in 1990 was \$1,464 (2005 dollars). Net return per hectare in 2005 was \$1,550. Yes it had gone up! But 2005 and the year before constituted a "peak" and you have to go back to 1991 to get a price that exceeds the 2004 & 05 figures.

2006 projected net return is \$1,050 per hectare, 2007 net return (with my assumption of an 8% cost increase with the

reducing dollar that MAF is assuming in its projection of returns) is \$820 per hectare. To be fair, I need to also point out that with MAF's prediction of price for milk solids in 2008 and my extrapolation of increasing production and the cost increase slowing, the net return per hectare for 2008 comes back up to \$1,017.

Firstly this does not look like an industry that is booming - and later I will give you a few extra figures relating to this, taken from a MAF outlook seminar in August of last year. But of more immediate interest is that if you put the figures into an NPV calculation and assume that the 2008 net figure will be maintained in real terms each year thereafter – you can make your own assessment as to whether or not this is realistic, optimistic or pessimistic – the land expectation value (LEV) calculated is interesting to say the least.

Please remember that the projected real "cash flow" is pre-tax. At a discount rate of 10%, the LEV is \$10,398 per ha. At a discount rate of 5%, it is \$16,257. But hang on! Haven't I been told that dairy farmers are paying upwards of \$20 - 30,000 per hectare? Well to justify a price of \$20,000 per ha, you need a discount rate of 3.15%. And to justify paying \$30,000 per ha, you have to accept a discount rate - pre-tax cash flow remember - of less than 0.077%. Try putting that into your forestry LEV calculation and see what you get as a price you can pay for the land!

I did so with one block of forest that is on my system and came up with an LEV per hectare of astronomical proportions. Suffice it to say that it was well into six figures and did not quite make seven. If I use 10 times the above rate (i.e. if I use 0.769%) I still get an LEV of \$72,150 per hectare. And with the same block's data, I could justify a land value of \$30,000 per hectare, if I used a discount rate of 1.55% (applied to the pre-tax cash flow to keep things on the same basis). It does not look much but it is more than 1.5% real return greater than the projected dairy return or expressed more dramatically, 20 times the dairy rate of return for land of the same cost!!

The sobering truth though is that you can easily get 4% real (i.e. 7% minus 3% inflation) if you simply put your money in the bank, while the ten year bond yield is currently 2.77% real (5.77% minus 3% inflation). But I am slightly heartened so see, again with the same block, that the real IRR of the pre-tax cash flow at a more sensible forestry land price of \$2,000 per hectare comes to 5.39%. So although dairy farming - at the land prices that they are paying - is effectively down the tubes, forest growing at the sort of prices that we paid for the land that we are using is still better than money in the bank.

Getting back to last year's MAF outlook seminar I have to commend the MAF staff involved for a set of very informative presentations. And they did not stint on follow-up if you showed an interest in getting further data. The forest information in fact was the least interesting because it was mostly about trade and international product prices with none of the juicy information on production profitability, that was included in the farming presentations (sorry Gerard).

I probably tend to look at things in a rather simplistic fashion and my brain latches on to what it considers are key points of interest.

The following things caught, and retained, my interest.

- MAF assumed that the NZ dollar value would average 0.659 in 05/06 and would fall to 0.601 in 06/07 and 0.570 in 07/08.
- Over the period 2000 – 2006 inclusive, the latter being projected by MAF of course, Waikato / BOP dairy farms had a positive disposable surplus in only two of the seven years.
- These two years were 2001 and 2002 – not the last couple of years when everyone “knows” that dairy farming is “booming” and “doing really well”.
- Production per hectare 1990 – 2006 is increasing.
- However, costs per hectare over the same period are increasing faster
- Interestingly, they did not do a graph of unit prices, which would have completed the picture.
- But from the data they supplied to me later, the trend in unit prices over this period was all over the place but ended lower than it started. The straight line trend line that I got my computer to put through these data was virtually completely level. Notably only twice in this 17 year series were there years in which there was a lower unit price in real terms than the 2006 figure. And only once was there a year lower than the projected 2007 figure.
- Over the same period, 2000 – 2006 inclusive, Central NI Hill Country Sheep & beef farms had a positive disposable surplus in all but one of the seven years (2003).
- Average return on capital from 1990 – 2005 was 12.5% for dairy and 14.2% for sheep and beef. Some pushy forestry person in the outlook seminar audience in Rotorua asked the MAF presenter whether inflation had been taken out and was told “No”.
- When these figures were broken down, they showed that of the 12.5% dairy return, 9.5% was from land and only 3.0% from operations. The land component was obviously implied capital gain on the land based on farm sale prices. It was not something that the farmers realised in money terms unless they sold their farms. And 3.0% minus inflation over the 1990 – 2006 period (2.05%) does not leave a lot in terms of real return.
- With sheep and beef, the same breakdown was 11.4% land and 2.8% operations. (And remember that is before 1990 – 2006 average annual inflation of 2.05% has been taken out).
- And last of all, the *piece de resistance*. The graph of “Total Farm Capital as a Multiple of Net Trading Profit (P:E ratio)” for 2000 – 2006 really summed the whole thing up.

They had to use “Total Trading Profit” for this graph, which as I understand it has not had the farmers’ personal drawings taken out, because if they had used Disposal Surplus, they would have had negative figures for 5 of

the 7 years for dairying and that would have given an incomprehensible result. But what it showed was that, even if you ignore the farmers’ personal incomes, the dairy figures – I read these figures from the graph so they are not necessarily precise – were around 39 for 2005 (i.e. a rate of return of 2.56%) and 52 for 2006 (i.e. 1.92%). Before inflation has been removed of course. Forgive me for going on about inflation, but people regularly forget it.

Sheep and beef (hill country) figures were a slightly more modest 21 (4.76% return) and 29 (3.45% return) respectively in the two years.

So do you still think dairying is doing well? Not me! If I had a dairy farm, I would sell it quickly to some sucker before farmers in general begin to see the writing that has been on the wall for some time. Surely they will realise sooner or later that buying dairy land at the prices they are paying is not an investment. It is simply a very expensive way of purchasing a lifestyle.

And if, like CHH and Kiwi Forests, I owned forest land that was considered suitable for dairying, I too would remove the trees – I think I would try to get some return from posts or pulp though – and would sell the land quickly to the nearest gullible non-commercially driven farmer. CHH & Kiwi are clearly taking the right commercial action for the current climate.

But in addition, I would write into the sale agreement a first right of refusal to purchase the land back when the farmer decided to sell, so that when dairy land prices drop back to more realistic levels and the poor purchaser goes broke and loses all his equity, I could buy back the land at say no more than half the price I sold it for.

To all intents and purposes, I would then have land that owed me not a cent. In addition, it would be weed free, fertilised, would probably have been contoured to some extent, would be nicely set up for post tree-establishment grazing and would have had a good fallow period to get the Armillaria root rot levels back down to near zero. Even planting and releasing would be straightforward and therefore cheaper than establishing cutover.

What more could you ask for?

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