

## Lessons from the dairy downturn – Part II

- In contrast to the widely-held belief, NZ *can* do something about farmgate milk price volatility.
- Indeed, how the NZ dairy sector adapts to price shocks is largely within its control.
- With that in mind, we believe a shorter duration milk price system can make NZ supply more adaptive to market shocks, and in turn reduce price volatility.

### Summary

In this report, we build on *Lessons from the dairy downturn – Part I* (click [here](#)). In particular, we pair the earlier observation that NZ has an over-sized impact on the dairy cycle with the inconvenient fact that over recent times global dairy prices have been very volatile.

In many circles, this price volatility is largely seen as out of NZ's control. But what if NZ industry dynamics were actually part of the cause? It would follow, then, that with change, NZ could contribute to lower price volatility.

That is precisely what we argue in this report. While many catalysts of volatility – such as weather and global politics – are out of NZ hands, mechanisms that influence how NZ responds or adapts to those shocks are almost entirely within its hands.

Critical in this regard, are the price signals that farmers face; we suggest that the current season-based milk price system gives farmers price signals that are at times out of whack with market prices. As a result, during the last cycle NZ supply over- and under-shot relative to demand (as indicated by market prices).

But, we can do something about this home-grown source of volatility. In particular, we anticipate that a milk price based on a shorter duration, say quarterly, will help align NZ supply sooner with global market prices. Importantly, NZ could then contribute less to milk price volatility.

### Focus on the controllables

World dairy prices are very volatile. In particular, since around 2007, volatility has more than doubled (as measured by standard deviations) compared to the period 1990 to 2006. Moreover, dairy prices are volatile compared to other food prices such as meat, for example.

In reference to price volatility, one often hears statements like “volatility is the new norm” or that volatility is due to a variety of “overseas” factors. One gets the impression that NZ dairy is a hostage to this volatility and its mostly offshore origins.

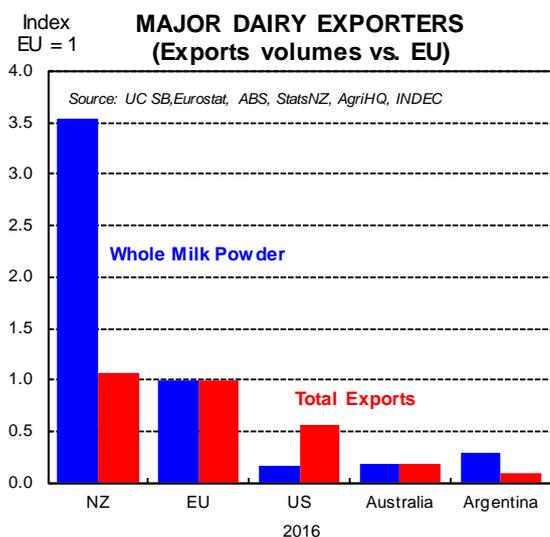
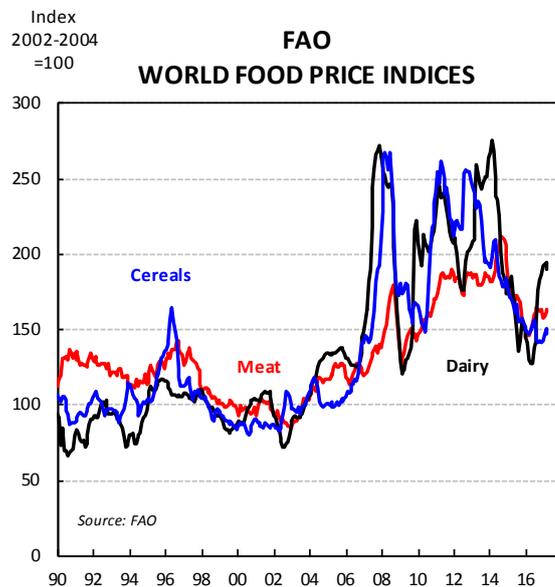
We partly agree. For example, droughts, floods, Presidential elections, food scandals, free trade agreements, quotas coming and going, subsidies, amongst other things are largely, if not completely, out of NZ farmers' hands.

On the other hand, we disagree. For while the above events are out of our control, how we adapt to these shocks to global dairy markets is not. Moreover, if you recall NZ has an oversized effect on the dairy cycle; so if NZ supply responds efficiently to these shocks, then it follows that milk price volatility should fall.

So let's take a look at how well NZ supply adapts to global dairy market shocks. In particular, we need to check that the price signals NZ farmers face align with global dairy prices.

### The current milk price system is out of whack with market-based price signals...

In this respect, it's definitely a case of we can do better! The current season-based farmgate milk price is giving a price



signal to farmers that is, at some parts of the dairy cycle, completely out of whack with prevailing market-based prices. This point has been well illustrated during the previous cycle. When market-based prices spiked by around \$3.50/kg from the December 2012 quarter to the June 2013 quarter to an estimated \$8.70/kg in milk price terms, the prevailing milk price forecast lifted just 50 cents. This modest lift in the prevailing milk price forecast opened a circa \$2.90/kg wedge between the forecast and market-based prices. Then when market-based prices fell, a wedge of \$1.90/kg opened up in the opposite direction (see chart).

The reasons for these wedges are understandable to a degree. For example, at the season opening forecast in June, Fonterra incorporates its dairy market outlook for the next 12 months. However, Fonterra also tends to err on the conservative side to avoid overpaying farmers, given the amount of uncertainty inherent in a 12-month ahead forecast.

At the end of the season, a different dynamic emerges. The farmgate milk price forecast then includes the milk sold over the prior months (for example in March, the forecast includes prices from up to 9 months earlier) which may be higher or lower than market prices at the time. In both cases, Fonterra’s farmgate milk price guidance dulls current market price signals to farmers.

**...contributing to large milk price forecast errors**

These dynamics water down the milk price forecast’s effectiveness. One way that this is evident is that over the past 10 seasons, the opening farmgate milk price forecast and closing farmgate milk price have diverged by an average of around \$1.40/kg. And in three of those seasons the divergence has been \$2.00/kg or more (see chart).

That’s not to say we think Fonterra is doing a bad forecasting job; we think they are doing as well (or poorly) as most other forecasters. While this writer has done better than most over the past season, we don’t believe the answer lies in better forecasting. Instead, we advocate shifting the forecasting goal posts from 12 months out to something closer.

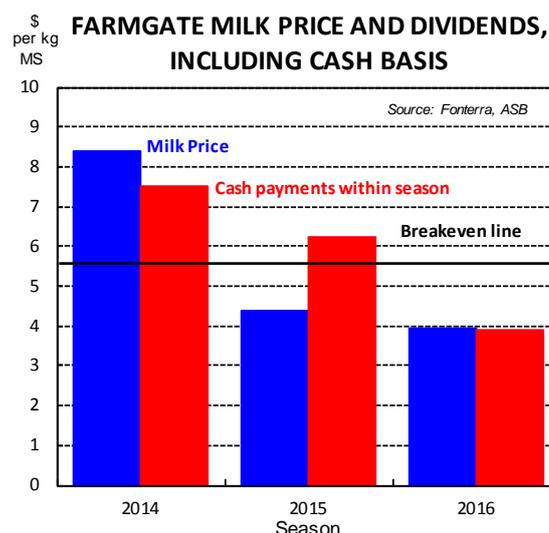
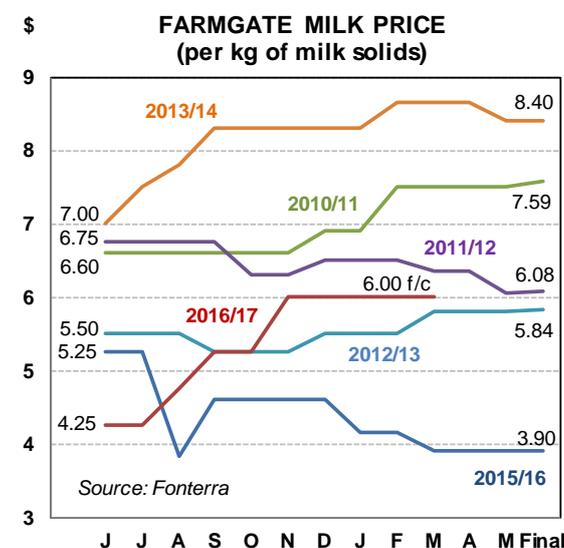
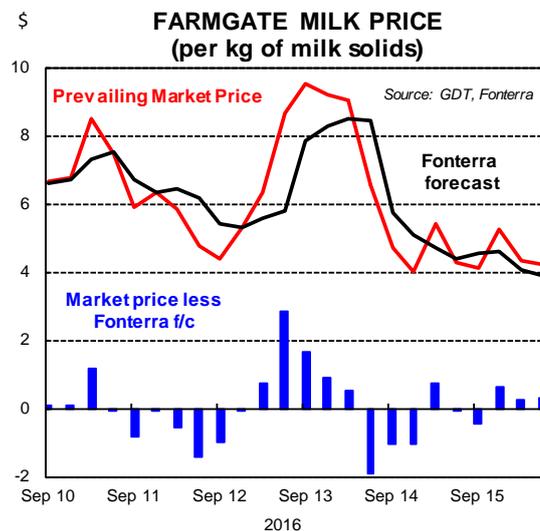
**The payment system is compounding the issue**

The advance payment system compounds the issues around the farmgate milk price forecasts. First up, farmers’ advance payments start low and progressively increase over the season as Fonterra gains more certainty around the likely final milk price. As a result, the low early-season payments dull the farmgate price signal, so that farmers may under-produce relative to market price signals.

Later in the season, the reverse happens. Low early-season payments give way to higher payments later in the season, with retrospective payments also paid in July through October.

In particular, the retrospective payments may overstate market price signals at the time, and lead farmers to overproduce. In our view, the retrospective payments in particular have been a leading cause of the deeper and longer recent price cycle. As shown in the chart, retrospective payments following the 2013/14 season meant that farm cashflows remained healthy (i.e. above break-even), despite a very low farmgate milk price.

As a result, farmers delayed their supply response and the NZ supply overshoot remained for longer than would otherwise have been the case. For example, compare the large supply correction of the other major exporters in the 2015 June year to NZ’s more modest supply pullback (see chart at top of next page). In turn, this supply overshoot contributed to a second-successive season with a below break-even farmgate milk price (of \$3.90/kg in 2015/16).



### We propose a shorter farmgate milk price payment system

When market price signals are delayed or masked, farmers are incentivised to over- or under-produce relative to the market pricing. This misalignment can push prices further out of sync. In other words, the NZ farmgate milk price forecast and associated payment system adds another level of volatility to that already inherent in the global dairy export market.

With that in mind, we believe that a quarterly-based farmgate milk price, for example, will help moderate farmgate milk price volatility compared to the current basis. Open Country Dairy is already using such a milk price system (although for their suppliers the season is divided into three parts). Similarly, some overseas jurisdictions are using higher-frequency milk prices and payments. Note under a proposal such as this, monthly advances would continue as normal, though payments could be at a higher percentage of the milk price forecast than under the current system (particularly in the quarters that correspond to the early part of the season).

Moreover, a quarterly farmgate milk price system will help counter other weaknesses of the 12-month system. For example, forecasting out one quarter ahead will be easier, and forecasts upon which farmers based their decisions will be closer to the mark. Moreover, Fonterra will have less concern about over-paying farmers (as any over-payment will be short-lived), enabling higher advance payments to farmers.

Similarly, quarterly forecasts will be more transparent and contain less judgement. While forecasters will still retain a view on the price outlook, forecasts are more likely to reflect current market prices as a starting point. Also by definition, forecast accuracy will improve, making forecasts more useful for decision-making.

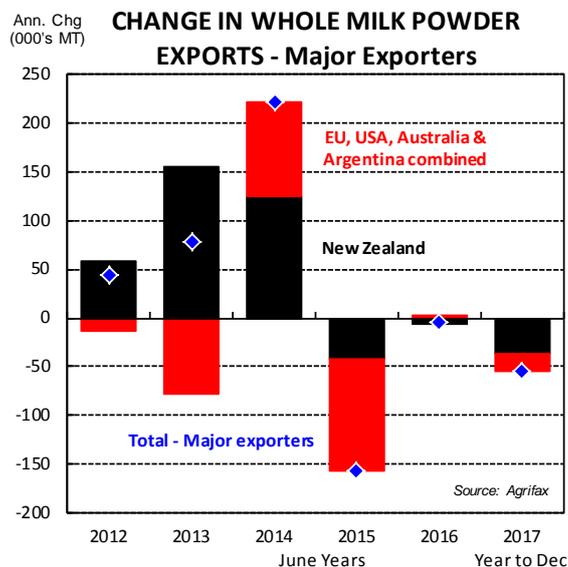
Lastly, a quarterly milk price system is likely to allow more participation by farmers in the milk price futures market. At the current juncture, the large swings in the milk price during the course of a season can translate into high costs for those using futures products (via frequent margin calls). In some cases, these costs may prevent farmers from participating in the futures market. However, shorter futures contracts and, consequently, less variation in the reference milk price should reduce the cost.

### Summary

All up, a shorter farmgate milk price system should give clearer and swifter price signals so that NZ farmers can adapt their behaviour to align NZ supply with global demand sooner. And while it won't eliminate farmgate milk price volatility, it should reduce it. Moreover, we believe quarterly payments will reduce the complexity of the payment system as well as farmgate milk price forecasting and the associated reporting. And in the end, simple is usually best.

If changes to the milk price are obvious, why not change now? The resistance to change partly lies with history i.e. that's the way things have always been done. But more importantly, a move will also require legislative changes. The milk price calculation is enshrined in the Dairy Industry Restructuring Act (DIRA) and thus changes are not made lightly.

However, we maintain the cost of volatility is high. Indeed, while the majority of farmers have stayed in business following this latest price cycle, that may not hold true in the next cycle. Moreover, a move to a higher frequency milk price is unlikely to undo or change the protections for other stakeholders included in the legislation. In the end, our view is built around a more adaptive dairy sector, so why shouldn't that include more adaptive sector regulation too?



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