Over the Fence

5 July 2019

Transforming food production

- In this month's issue of *Over the Fence*, we take a look at New Zealand's downstream food manufacturing sector and consider some of the opportunities and challenges this sector faces in coming years.
- New Zealand's food production system has enjoyed a strong run in recent years, and we expect this to continue in the short- to medium-term, although long-term there are some challenges.
- The big opportunities are in producing enough food for the rapidly expanding middle class in emerging markets, growing market share in developed countries, and using technology to address consumer demands for greater transparency.
- The main challenges to be addressed include how to counter the threat of substitute foods and how to respond to a likely reconfiguration of the food supply chain.

The numbers

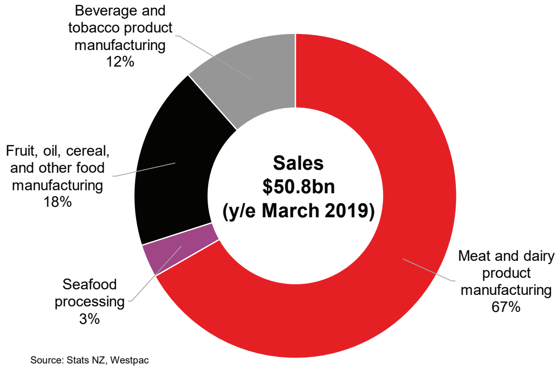
The relationship between food manufacturing and agriculture is symbiotic. Food manufacturers rely heavily on the agricultural sector to provide the right quantity and quality of raw produce needed for food production, while farmers depend heavily on downstream food manufacturers to process and distribute their products in a form that is fit for human consumption.

Producing food in New Zealand is a big deal.

The food production system, which incorporates both agriculture and food manufacturing, contributed about 8% to this country's GDP in 2018 and provided employment for about 173,000 people. This excludes casual seasonal workers, which will have boosted employment during harvesting season.

Agriculture and food manufacturing each make up about half of the GDP associated with food production.

Food manufacturing sales



Source: Stats NZ, Westpac

In 2018, local food manufacturers made just over $44bn in sales. Add to this $6bn in sales recorded by beverage producers and you have a sector that is more than four times bigger than the transport equipment, machinery and other equipment manufacturing industry.

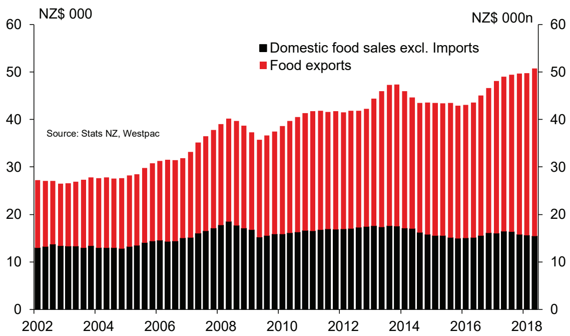
About three-quarters or $34bn of these sales were generated from agri-food exports. In value terms, this amounts to a whopping 60% of exports, making New Zealand unique amongst the world's developed economies. Food exports of comparable countries account for at most 20% of total exports.

Not just that, but this proportion has been steadily rising. Back in 2002, food accounted for "just" 46% of total exports. By contrast, manufacturing exports excluding food fell from 36% in 2002 to just 20% in 2018.

In part, the outperformance of food exports reflects the nature of New Zealand's pasture based agricultural system, which for many years has been able to produce high quality food at a relatively low cost. Indeed, a temperate maritime climate, high rainfall, a plentiful supply of fertile land, freedom from animal and plant diseases, skilled and innovative farmers, combined with investment in farm management research has helped this country to compete effectively in virtually every market it has had access to.

Because of these competitive advantages, New Zealand has traditionally exported foods requiring a limited degree of processing. Dairy products, such as milk powder, cheese and butter, dominate in this regard, while meat products, mostly lamb and beef, have also made their mark. Similarly, exports of horticultural products, such as apples, kiwifruit and avocados, have also seen significant growth.

Sales of New Zealand food, annual



However, growth in the local market has been less impressive. Manufacturing food sales domestically have grown by an average 1.7% since the turn of the century, just slightly more than average population growth, but slower than the economy overall.

Opportunities

One reason why food exports have done so well is because global demand has increased hand over fist. In part, this reflects the fact that there are more people in the world than there used to be and they need to be fed.

More relevant perhaps are the big structural changes that are happening in emerging markets. Traditionally agricultural based, these economies have experienced industrialisation and urbanisation on a massive scale, which has led to unprecedented growth in the middle classes. China is a case in point.

As the middle classes in these countries have expanded, so their dietary habits have changed, resulting in huge increases in demand for foods like meat and dairy, which are rich in animal proteins. This in turn has helped to drive prices higher, benefitting both local manufacturers and farmers alike.

And there is likely to be no let up. Economic growth in China might have slowed to about 6% over the past year, but rural-urban migration in that country continues unabated. Add to this a fast growing India, and all signs point to more exports in the foreseeable future.

This, of course, is good news for New Zealand's farmers and downstream food manufacturers, who are probably better placed than most to exploit increased demand for high protein products. This is especially so in a world where climate change impacts are becoming ever more evident and land use increasingly constrained.

But it's not just in emerging markets where opportunities exist. There are still growth possibilities in developed countries, particularly in areas like functional foods, which have direct health benefits and are good for the environment. Food manufacturers worldwide, in conjunction with farmers and the scientific community, are spending big on researching, designing and producing these types of foods.

New Zealand food producers are well placed to take advantage of the growth in functional foods, especially given their expertise in dairy, meat, seafood and arable foods. However, to do so, they will have to move up the value chain, focusing on foods that offer a point of difference, perhaps with a difficult to copy New Zealand twist.

Other opportunities are technology driven. More automation, robotics, sensors, and artificial intelligence (AI), as well as block chain offer the promise of greater operating efficiencies, not just for manufacturers seeking to minimise costs of production, but also farmers looking to maximise agricultural yields.

These same technologies are also enabling farmers and manufacturers to better monitor each stage of the food production process, from the farm to when it leaves the factory.

Working more collaboratively, farmers, manufacturers and downstream retailers are adopting digital multi-party network management tools to monitor demand and supply in real time at each point in the value chain. They are also using inventory management tools to more effectively manage stock levels (including automatic reordering), and are implementing traceability systems, which leverage off block chain technologies and AI sensors to track individual food products. For farmers and manufacturers, this kind of control helps to improve food safety, reduce wastage and limit opportunities for food fraud and other criminal activities.

End-user apps that tap into these systems are also helping to make food production much more transparent to consumers, who are now able to track where their food has come from and how it has been processed. For food producers, these apps are about regaining the trust of consumers, who have become increasingly wary of manufacturers.

And with good reason. The World Health Organisation (WHO) estimates that 600m people worldwide fall ill after eating contaminated food each year, while about 420,000 die from foodborne diseases. Corresponding estimates are far lower for developed markets, but they are large enough to cast doubt in the mind of consumers. In New Zealand, for example, there are about 200,000 cases of foodborne illnesses each year, roughly half of which are production related.

Some manufacturers have gone further, reducing the complexity of food labels by adopting clean labelling, which seeks out foods with easy-to-recognise ingredients and no artificial ingredients or synthetic chemicals. The rise of clean labels is expected to continue.

Challenges

In addition to the opportunities outlined above, agriculture and food manufacturing in New Zealand face a number of challenges.

New foods are slowly moving into the mainstream, broadening our definition of what food is. Indeed, bio-tech researchers are designing an array of foods with unusual ingredients.

Some of these substitute foods are already here and have gone mainstream. Cellular milk is well into production. Meatless products, which have the taste, texture and smell of real meat, can already be found in our supermarkets, while some fast food chains are actively marketing meatless options.

Over time, growth in demand for these types of product will pose a threat to New Zealand's export orientated meat and dairy industries. Health conscious consumers in developed markets already eat less meat on a per capita basis and are increasingly looking to substitute real meat with healthier and less environmentally damaging options, especially if they are price competitive.

At the moment, the threat of substitutes is small and any loss of market share is likely to be more than offset by growth in demand for real meat in key export markets like China, which is yet to make the shift towards meatless food.

However, consumers in emerging markets are likely to follow developed countries down the meatless route. When they do, New Zealand meat processors could find themselves being forced up the value chain into more differentiated processed products. Under such circumstances, meat farmers could find themselves facing structurally lower prices for their products.

Other challenges are technology driven. Digital technologies are facilitating a structural shift away from complex distributed supply chains towards vertically integrated business platforms that put farming and food manufacturing much closer to the world's large population centres. Consumer demand for more local ingredients is adding to this, leading to more urban farming. So too vertical farming, which despite being its infancy, has now moved from being science fiction into science fact.

For farmers and manufacturers, being in close proximity makes a lot of sense. It offers better access to markets, facilitates greater responsiveness to changing consumer demands and drives operational efficiency gains. In short, it improves competitiveness.

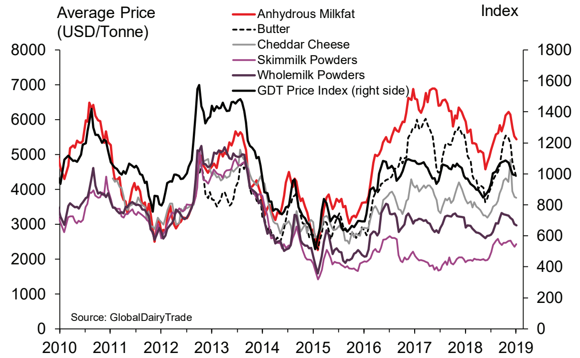
However, not all food manufacturers can take advantage. Indeed, the shift towards vertically integrated business platforms poses a growing threat to the competitiveness of most geographically distant manufacturers in New Zealand, who simply lack the size, scale and complexity to actively participate in them.

Paul Clark
Industry Economist

Beyond the farm gate

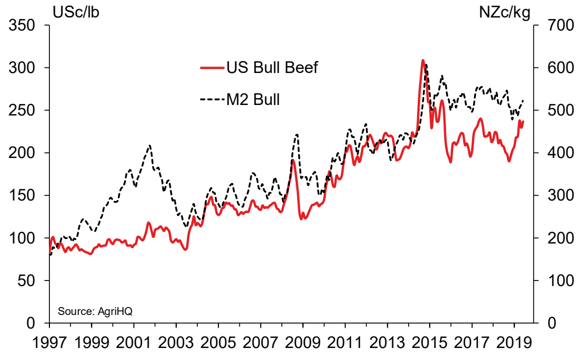
Dairy

Dairy prices nudged down 0.4% in the latest GlobalDairyTrade auction. That was the fourth consecutive fall in prices and leaves the overall GDT price index at levels we last saw in January. While we were always expecting auction prices to fall over the course of this year, this has come through faster than we anticipated. Consequently, we have lowered our farmgate milk price forecast for the 2019/2020 season to $6.90/kg (down from $7.20). Fonterra's forecast range is $6.25 to $7.25. Looking ahead, growth in overseas dairy supply is likely to be limited over the remainder of this year. In contrast, New Zealand production is looking firmer: milk production was up 2.4% last year, and NZX is forecasting milk solid levels to be up 0.4% over the 2019 / 2020 season.



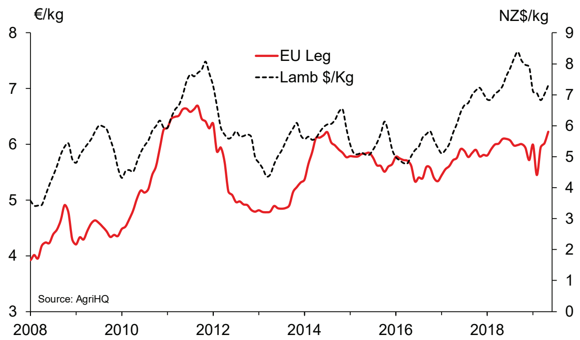
Beef

Strong demand from China remains a key feature of international markets, with the ongoing African Swine Fever (ASF) outbreak seen as boosting demand for other sources of proteins such as beef. That said, there are concerns that Chinese buyers may have gotten too far ahead of themselves, given an ample global supply of beef. Brazilian exporters are now back in the Chinese market following a two-week suspension after the discovery of an atypical case of mad cow disease. US demand for grinding beef has also picked up again in recent weeks, though there is limited supply from New Zealand at this time of year to meet that demand.



Lamb

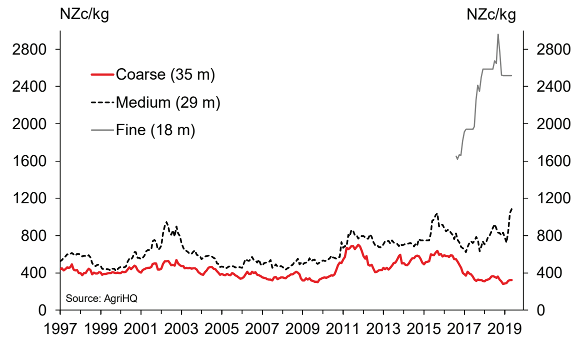
The impact of the ASF outbreak in China has been much more noticeable for sheepmeat, with a strong lift in prices for lamb and especially mutton in recent weeks. In contrast to beef, the lift in Chinese demand is running up against a lack of supply, with declining stocks in New Zealand and a relatively slow kill in Australia. Locally, lamb prices in June were in line with year-ago levels, and there is a strong expectation that winter lamb prices will match or better last year's peak of around $8.50/kg.



Beyond the farm gate

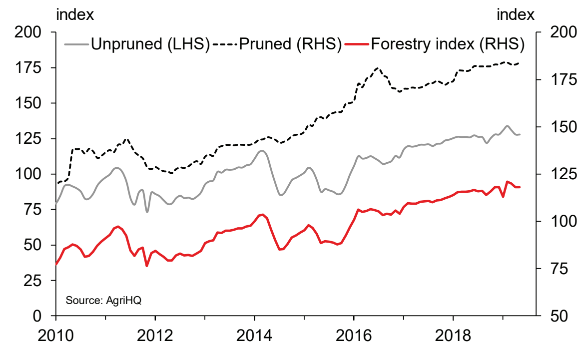
Wool

The lift in wool prices seen earlier in the year appears to have run out of steam. One factor at play may have been China reopening the door to South African wool exports, which have been cleared after an outbreak of foot and mouth disease. More generally, there have also been anecdotes of soft Chinese demand at recent wool auctions. Concerns about the impact of the US-China trade dispute and subdued retail conditions in both mainland China and Europe are likely to have contributed to this weaker demand. The apparent truce in the trade war at the latest G-20 meeting may help to revitalise demand in the coming weeks.



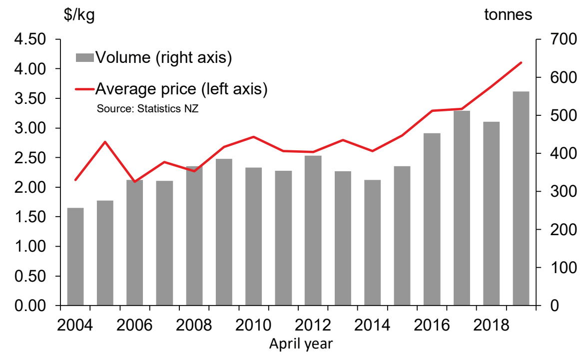
Forestry

Wharfgate log prices have fallen by about 10% from their peak in February. The flow of logs offshore remains strong – the overseas trade data for May showed log and timber volumes up 9% on a year ago. But these will be arriving at a time when inventories at Chinese ports are already at higher than normal levels. There has been ongoing nervousness about the impact of the US-China trade war on Chinese demand, particularly with the risk of an escalation in tariffs. In contrast, local log demand and prices have been steady, with housing construction in New Zealand remaining strong.



Horticulture - Kiwifruit

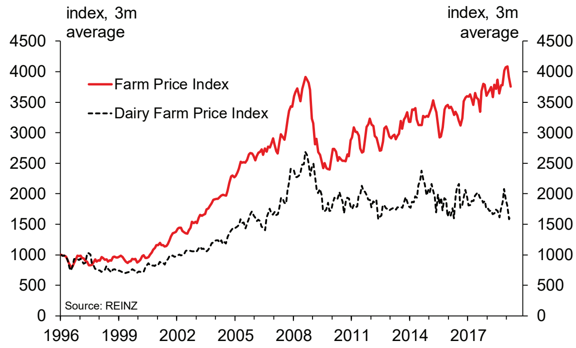
Kiwifruit export prices appear to be holding up well in spite of stronger volumes. Overseas trade figures for May indicate that export prices are running about 10% ahead of last year. In part this reflects a lower New Zealand dollar, with the NZD/USD exchange rate down about 6% compared to a year ago. Average export prices for apples are tracking about 6% ahead of last year, largely reflecting a shift in volumes towards higher-value varieties.



Beyond the farm gate

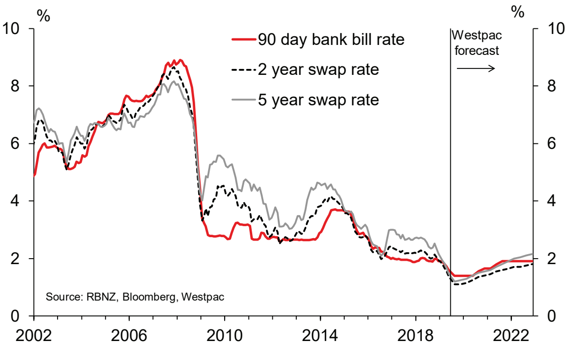
Farm prices

Rural real estate markets have remained soft. In the three months to May, sales were down 14% compared to the same period last year. We've also seen softness in prices, with the REINZ All Farm price Index down 4%. Underlying this softness in the overall market, dairy farm sales are down 34% over the past year and prices are down 4%. Demand for forestry land (or land that can be converted to forestry) has been firmer. Going forward, we expect farm prices will get a shot in the arm from the recent drop in interest rates, the cancellation of the proposed capital gains tax, and a higher dairy payout. However, ongoing concerns about the regulatory environment will continue to be a drag on demand for rural property for some time.



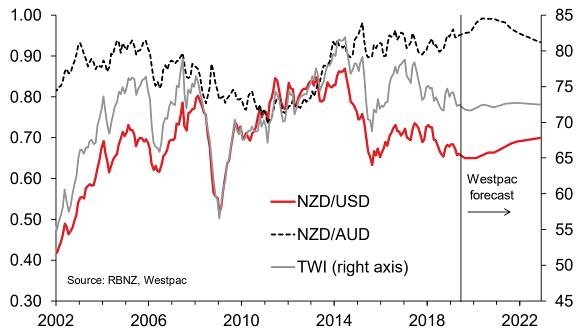
Interest rates

As expected, the Reserve Bank kept the Official Cash Rate on hold at 1.5% at its June meeting. However, the RBNZ also provided a very clear signal that the cash rate is likely to be cut again in the future, noting *"that more support from monetary policy was likely to be necessary."* The RBNZ is particularly concerned about softness in the global economy and is continuing to wrestle with stubbornly low inflation. We expect that they will cut the cash rate to 1.25% in August.



Exchange rate

Around the world, economic confidence is faltering and interest rates are falling. New Zealand is not among the worst performing economies, so our exchange rate has lifted a little in recent weeks. Looking to the back half of the year and into 2020, we expect the NZ dollar to remain in the mid-60s against the USD, but to climb significantly against the AUD.



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