Reserve Bank of New Zealand
Te Pūtea Matua

Developments in the agricultural sector.

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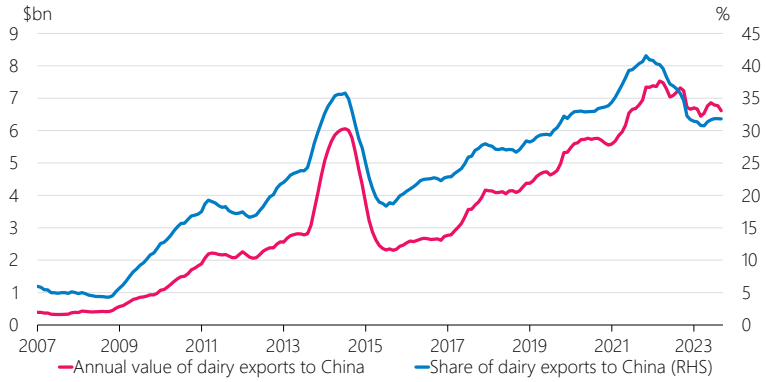
3 Developments in the agricultural sector

The agricultural sector is facing difficult economic conditions, owing to falls in dairy and meat prices, elevated operating expenses, and increased debt servicing costs. The agricultural sector represents 11 percent of aggregate bank lending. Within agricultural lending, dairy takes the predominant share (around 60 percent), with beef and sheep as the second-largest category (25 percent). In the dairy sector, loan defaults remain low but are expected to increase. This could accelerate if there is a prolonged period of low prices. In the longer term, the agricultural sector faces climate-related challenges. We are working with banks to improve their capability in assessing climate risks, through stress testing their agricultural portfolio against shocks including droughts and emissions pricing.

Figure 2.14

New Zealand dairy exports to China

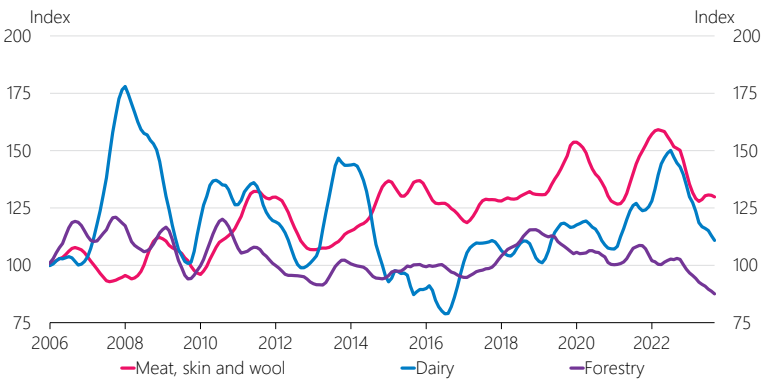


Source: Stats NZ.

Figure 2.15

ANZ commodity price index

(inflation-adjusted NZ dollars, 6-month average)



Source: Haver Analytics, Stats NZ, RBNZ calculations.

Note: Series are deflated by the Consumer Price Index, with December 2005=100.

External demand for soft commodities is subdued amid robust global supply

The agricultural sector is facing the challenge of softening demand from China, which has purchased on average one-third of dairy exports by value in the past five years (figure 2.14). China is also a key buyer of meat and forestry exports, at around 40 percent and 60 percent of values for these exports respectively. The recovery in the Chinese economy after the lifting of the pandemic restrictions has slowed. Chinese consumers have remained cautious, weighing on demand for agricultural products including dairy. Demand for dairy from other trading partners, for example emerging Asian economies, has been generally muted as well. Dairy inventories in key markets have declined from high levels in early 2023, and therefore dairy prices are beginning to stabilise in recent months.

Over the past year, dairy production has increased from a high level in most major dairy-producing economies, including China. This was aided by factors such as previously high dairy prices and favourable weather conditions. More recently, global production is expected to moderate in response to lower prices, but this will take some time.

Prices for dairy and other agricultural exports have declined

The combination of subdued demand and strong supply has led to price declines in soft commodities. Prices of dairy, meat, and forestry products have fallen by 8 to 20 percent compared to a year ago (figure 2.15). Fonterra has adjusted its milk price forecast to a midpoint of $7.25 per kilogram of milk solids (kgMS) for the 2023/24 season, down from $8.22 for the 2022/23 season. While inflation-adjusted dairy prices remain higher than their trough in 2015, farmers now face greater challenges around costs, including higher interest rates.

Dairy prices have improved in recent auctions, owing to a stabilisation in demand and easing supply. In addition, two recent steps taken by Fonterra should support farm cash flows and cushion some of the impact of lower dairy prices. Fonterra's forecast earnings per share range for the 2023/24 season, at 45–60 cents, could imply a possibly higher dividend payment than the 30 cents per share typically realised. Furthermore, Fonterra introduced its Flexible Shareholding changes in March, decreasing dairy farmers' shareholding requirement, which allows them to sell excess shares as a temporary one-off support to cash flow.

Costs of production remain high and debt servicing costs have increased

The costs of inputs such as feed and fuel remain elevated following strong inflation in 2022, despite some easing recently. Cost inflation in other inputs such as labour, electricity and insurance has picked up pace, putting pressure on dairy farmers' cash flow. In addition, the rapid increase in interest rates over the past two years has led to a substantial increase in debt servicing cost for farmers. Estimated average debt servicing cost per kgMS has increased to $1.43 in August, from 59 cents two years earlier (figure 2.16). Dairy farmers have generally deleveraged over the past five years, which has limited the impact of rising interest rates on their debt servicing burden to an extent. However, the level of indebtedness varies across dairy farms, and increased interest rates will have a particularly significant impact on more indebted farms.

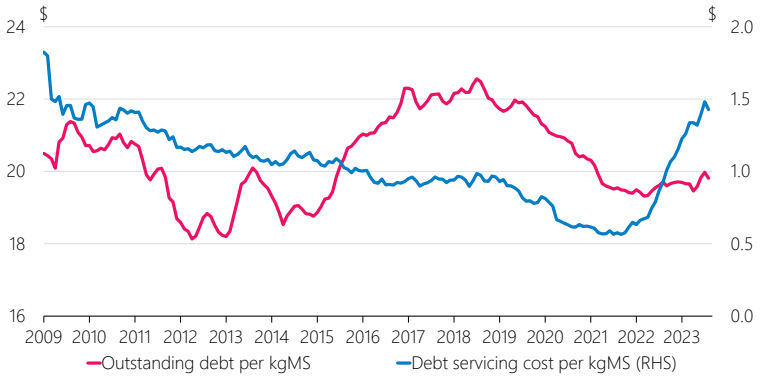
Higher costs are weighing on the dairy sector's profitability, with some farms making a loss

The decline in expected payouts and increased debt servicing cost are expected to reduce profitability. The average breakeven dairy revenue per kgMS for the 2023/24 season is estimated to be around $8 (figure 2.17), higher than the expected payout.[1] Recent farm-level analysis provided by Figured (who operate a financial management platform for farmers) suggests approximately half of dairy farms would make a loss if the final milk price were to settle at $6.75, and over 60 percent could make a loss if the price falls further to $6.25. How long farmers can operate under these conditions depends on factors such as indebtedness, access to working capital, cost structures and scale.

Figure 2.16

Dairy sector debt levels and debt servicing cost

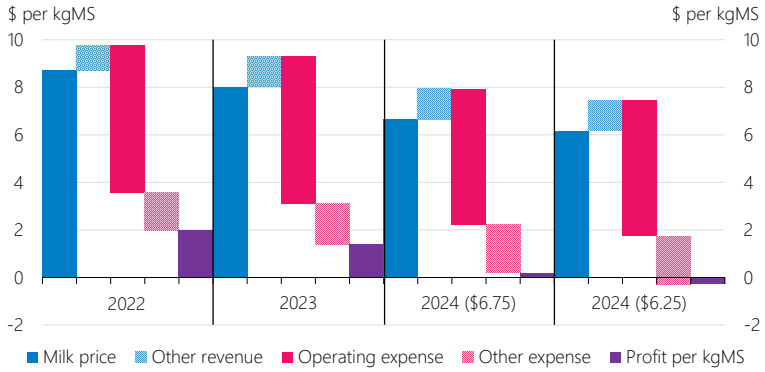
(3-month average)



Source: Dairy Companies Association of New Zealand, RBNZ *Bank Balance Sheet survey*, RBNZ *Income Statement survey*, registered banks' *Disclosure Statements*.

Figure 2.17

Average revenue, expense and profits of dairy farmers



Source: Figured.

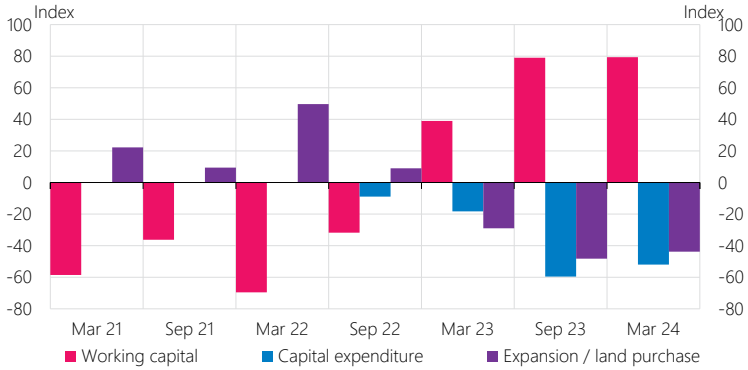
Note: Other revenue is livestock sales and earnings per shares. Other expenses include interest and rents.

1 The dairy revenue per kgMS includes the milk price, Fonterra earnings per share, livestock income and other income.

Credit demand in the dairy sector is expected to continue falling in coming months, owing to subdued investment intentions by farmers (figure 2.18), and in line with lower profitability in recent quarters. Meanwhile, demand for working capital has surged as some farmers used credit facilities to support their cash flow amid rising stress.

Figure 2.18

Drivers of demand for dairy credit, expected change over next 6 months



Source: RBNZ *Credit Conditions survey.*

Defaults could increase materially if there is a prolonged downturn in export prices

Defaults in banks' agricultural lending portfolio are currently low. Banks perceive most of their dairy customers to be reasonably well-placed to weather a short period of low payout. Significant deleveraging in the sector in recent years has contained debt servicing costs and has supported the option for many farmers to go interest-only to alleviate cash flow stress. However, banks expect defaults among dairy borrowers to rise over the coming year, because there tends to be a time lag between cash flow stress and default (figure 1.7). A prolonged period of low dairy prices or a further reduction in prices are more likely to exhaust the cash buffer of farmers with weaker balance sheets, leading to materially higher default rates.

Other agricultural sectors such as beef and sheep are facing similar challenges related to soft export prices and elevated expenses. The forestry sector is also affected by a fall in the price of emission units, from the sale of which the sector derives revenue, in addition to lower forestry export prices. However, the risks posed by the beef and sheep and forestry sectors to the financial system are smaller than dairy, because they tend to be more equity-financed and represent a smaller share of bank lending.

Climate-related regulatory changes and weather conditions continue to create uncertainty

More details around the plan to reduce agricultural emissions were announced in August. Mandatory farm-level reporting on emissions has been delayed to the December quarter 2024, and emissions pricing is planned to start in the December quarter 2025. The plan confirmed a farm level split-gas levy approach,[2] which is the option generally preferred by the dairy sector and the beef and lamb sector over other proposals to price agricultural emissions. However, the industry continuesto see significant regulatory uncertainty, including around the measurement of emissions and approved methods to offset emissions.

In addition to regulatory uncertainty, New Zealand has entered the El Niño or warming phase of the Southern Oscillation climate cycle, which is expected to lead to a change in weather conditions. Some farmers face increased risk of drought conditions, particularly in eastern and northern regions, which could lead to a decline in production and increased expenses. Confidence in the agricultural sector has fallen to a record low according to a recent survey, with lower output prices, high costs, and uncertainty over government policy identified as the main concerns.[3]

2 This approach will set separate levy prices for long-lived gases such as nitrous oxide from livestock and synthetic fertilisers, and short-lived gases such as methane arising from biological processes, to reflect their different warming impacts and emissions reduction targets.

3 Rabobank *Rural Confidence* survey for September quarter 2023.

As part of our stress-testing programme, the largest banks completed an assessment of climate-related risks for their agricultural lending

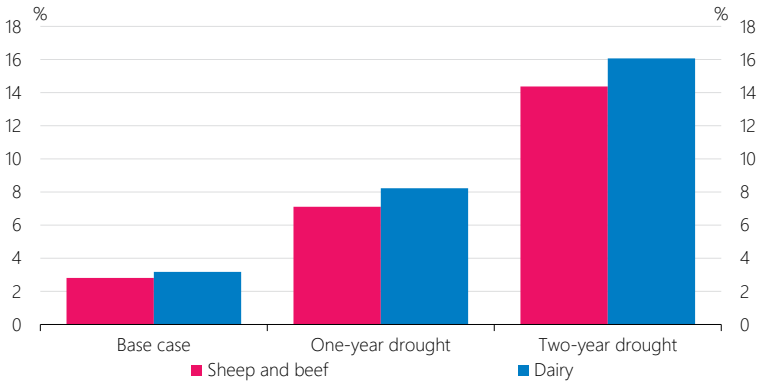
Climate-related risks and regulatory changes are an increasing concern for the agricultural sector. Over the past year, we have worked with New Zealand's largest banks to assess climate-related risks to their agricultural exposures, including from drought conditions and various levels of emissions pricing.[4] The main purpose is to support banks to build capability to measure climate-related risks and find solutions to the significant data and modelling challenges. As part of the exercise, banks developed new modelling and data tools for conducting detailed customer-level analysis and simulations of their agricultural loan portfolios, which they indicated will be useful on an ongoing basis. An overview of the design and results of this risk assessment was published as a Reserve Bank *Bulletin* article in October 2023.[5]

To assess risk from drought, banks estimated defaulted exposures and loss provisions given a prescribed set of assumptions for two different severities of drought: a one-year drought and a two-year drought. In the one-year drought, loan defaults were 8 percent ($2.3 billion) of dairy exposures and 7 percent ($0.8 billion) of beef and sheep exposures, compared with a no-drought base case with only 3 percent of each type of exposures defaulting. In the two-year drought, defaults were approximately double that of the one-year drought (figure 2.19).

Figure 2.19

Default rates in drought risk assessment

(aggregate across banks)



Source: RBNZ calculations.

Separately, we asked banks to estimate the impacts of a range of prices for farm emissions. This analysis was exploratory given New Zealand does not currently have a price on agricultural emissions and future policy settings are uncertain. We used a range of pricing assumptions, including up to $150 per tonne of CO^2 equivalent, which we estimate could align to a severe scenario for around 2040.[6] In this exercise, banks estimated the proportion of their agricultural borrowers that would be unprofitable (ie making a loss) given the prescribed assumptions.

4 This followed an assessment of flooding risk for banks' residential mortgage exposures: https://www.rbnz.govt.nz/hub/publications/bulletin/2023/rbb-2023-86-02.

5 https://www.rbnz.govt.nz/hub/publications/bulletin/2023/rbb-2023-86-07

6 The emissions prices assumed in the exercise apply to all farm emissions, ie with no free allocation. The *Bulletin* article has information on benchmarking the price levels to scenarios.

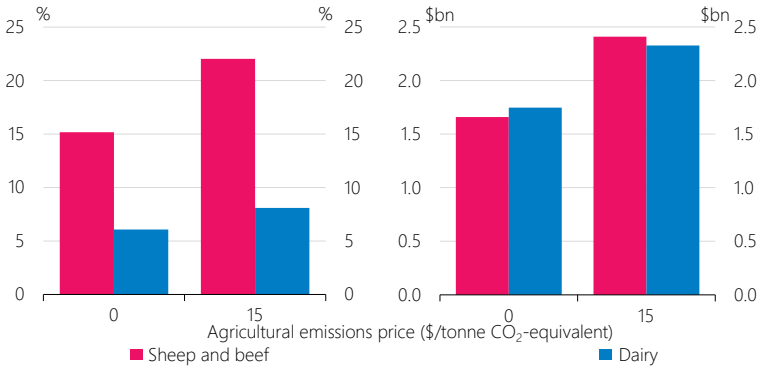
Focusing on the results for an emissions price of $15, which is more relevant for a shorter time horizon, banks estimated that around 8 percent of dairy exposures and 22 percent of sheep and beef exposures would be to unprofitable farms, compared with 6 percent and 15 percent in a baseline scenario without emissions pricing (figure 2.20).[7] As shown in the *Bulletin* article, substantially more farms become unprofitable at the higher emissions prices considered in the exercise.

A key assumption that influenced the results and made them more severe than otherwise was that international milk prices were kept fixed (at a hypothetical level of $7.50/kgMS). It is plausible that global dairy and meat prices could increase with rising agricultural emissions prices.

The agricultural risk assessment fed directly into the work banks currently have under way to complete the Reserve Bank's 2023 Climate Stress Test.[8] This brings together multiple types of climate-related risks in a multi-decade, severe but plausible scenario. In this scenario the milk price can change over time in response to international cost pressures, including agricultural emissions pricing.

Figure 2.20

Bank exposures to unprofitable farms by emissions price



Source: RBNZ calculations.

7 The $15 hypothetical emissions price is benchmarked to an estimate by He Waka Eke Noa (2022) that a 2030 price for methane emissions of $0.35/kg, equivalent to $14/tonne CO^2-e, could be sufficient to meet the 2030 emissions target under a 'medium technology' scenario. https://hewakaekenoa.nz/wp-content/uploads/2022/06/FINAL-He-Waka-Eke-Noa-Recommendations-Report.pdf

8 https://www.rbnz.govt.nz/financial-stability/stress-testing-regulated-entities/climate-stress-test.