



Sheep and Beef On-farm Inflation 2022-23



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SHEEP AND BEEF ON-FARM INFLATION 2022-23

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Summary.....	1
1. On-farm inflation.....	1
2. Annual changes in farm input prices.....	4
3. Underlying on-farm inflation.....	8
4. Methodology and sources.....	9
5. Appendices.....	10

Summary

- At 16.3 per cent in the year to March 2023, on-farm inflation was even higher than last year's 40-year high (10.2%), and higher than anticipated earlier in the year. This is the highest on-farm inflation since 1981.
- It was also more than double the consumer price inflation rate of 6.7 per cent.
- A key driver of on-farm inflation was interest expenditure because on average 80 per cent of farm term debt is on floating interest rates and these rates doubled over the period.
- A generation of farmers has not managed or operated farms under high inflation and while the impact of inflation on individual farm businesses varies, farmers will be less resilient to a decline in farm-gate prices and any further increase in costs that result from regulation.
- In March, B+LNZ forecast a 30 per cent decrease in average farm profit based on estimated on-farm inflation of 12-13%, which itself is high, but this latest result means that farm profit is likely to fall even further.
- With inflation eroding farm profitability, farmers will continue to tighten their belts. Debt servicing is a contractual obligation which cannot be avoided, which means farmers will cut back other areas of farm expenditure. This will have a flow on effect for rural communities as services and farm inputs are reduced.
- The significant erosion in profitability and on-going high input costs means that farmers are more sensitive about anything else that may increase their costs, such as new rules and regulations.

The sheep and beef on-farm inflation report indicates the annual changes in farm input prices and not the annual changes in total farm expenditure. On-farm inflation is different to total farm expenditure, which takes into account the volume of inputs used on farm. B+LNZ's latest forecasts for expenditure were published in its Mid-Season Update, which is available from B+LNZ's [Data and Tools page](#).

1. On-farm inflation

On-farm inflation +16.3% in 2023

Prices for sheep and beef farm inputs **increased 16.3 per cent** between March 2022 and March 2023 following a 10.2 per cent **increase** in the previous 12-month period (see Figure 1). This is the highest on-farm inflation rate for sheep and beef farmers in 40 years, since 1981-82 when on-farm inflation was 17.1 per cent (see Appendix 5: Sheep and Beef On-Farm Inflation 1972-2023).

Prices increased in all 16 categories of inputs. The largest increase was for *Interest* (+86.5%), which contributed substantially to the overall increase in on-farm inflation because it comprises 10.9 per cent of total farm expenditure. Floating interest rates doubled from March 2022 to March 2023 while fixed and overdraft interest rates increased by around 50 per cent.

Feed and Grazing (+14.8%) and *Fertiliser, Lime & Seeds* (+14.0%) were the next two largest increases for the year (see Figure 3).

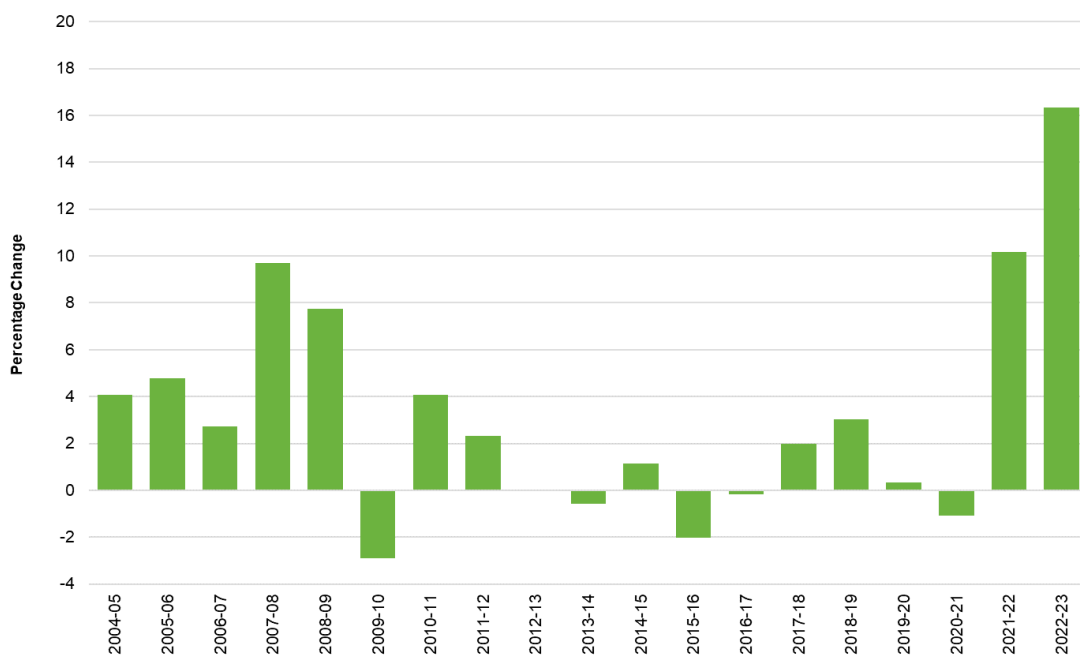
On-farm inflation +31.1% in 5 years +31.4% in 10 years

Prices for sheep and beef farm inputs were up 31.1 per cent over the last five years, and up 31.4 per cent over the last 10 years. See Table 2.

On-farm inflation higher than consumer price inflation in 2023

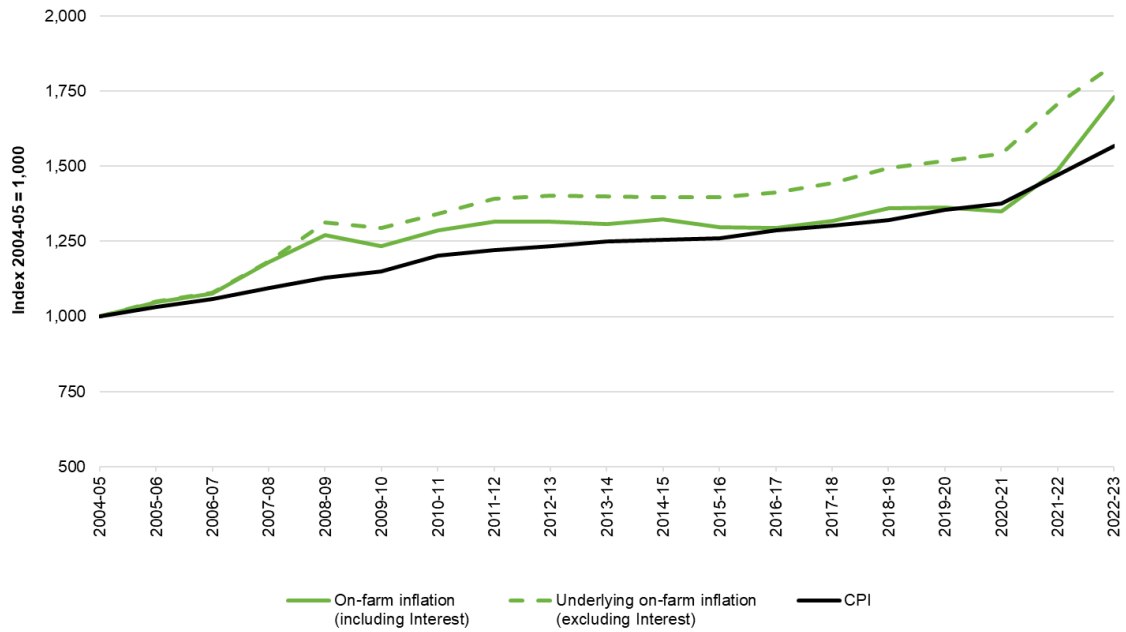
On-farm inflation was significantly higher than consumer price inflation in 2023, which was 6.7 per cent between March 2022 and March 2023. Over the last five years, consumer price inflation was 20.5 per cent, and over the last 10 years it was 27.2 per cent (see Figure 2).

Figure 1: Sheep and Beef On-Farm Inflation



Source: Beef + Lamb New Zealand Economic Service | Statistics New Zealand

Figure 2: Sheep and Beef On-Farm Inflation and CPI



Source: Beef + Lamb New Zealand Economic Service | Statistics New Zealand

2. Annual changes in farm input prices

The areas of expenditure that increased the most over the March year were *Interest, Feed and Grazing* and *Fertiliser, Lime & Seeds*.

Interest +86.5%

Between March 2022 and March 2023, the overall price for *Interest* increased by 86.5 per cent following a 5.9 per cent increase for the previous 12-month period. This has been driven by floating interest rates which doubled from March 2022 to March 2023 while fixed and overdraft interest rates increased by around 50 per cent. Higher levels of debt or leveraging are often, but not always, associated with farmers in early stages of their career due to purchasing land, this results in greater debt-servicing requirements and greater exposure to higher interest rates.

Broadly, sheep and beef farm term liabilities are approximately 80 per cent floating and 20 per cent fixed, which exacerbates the impact of floating rates having doubled. The 80/20 floating versus fixed is not a long-standing pattern of term debt, in the early 2000s the situation was reversed with around 20 per cent of term debt on floating interest rates (see Figure 5).

Feed and Grazing +14.8%

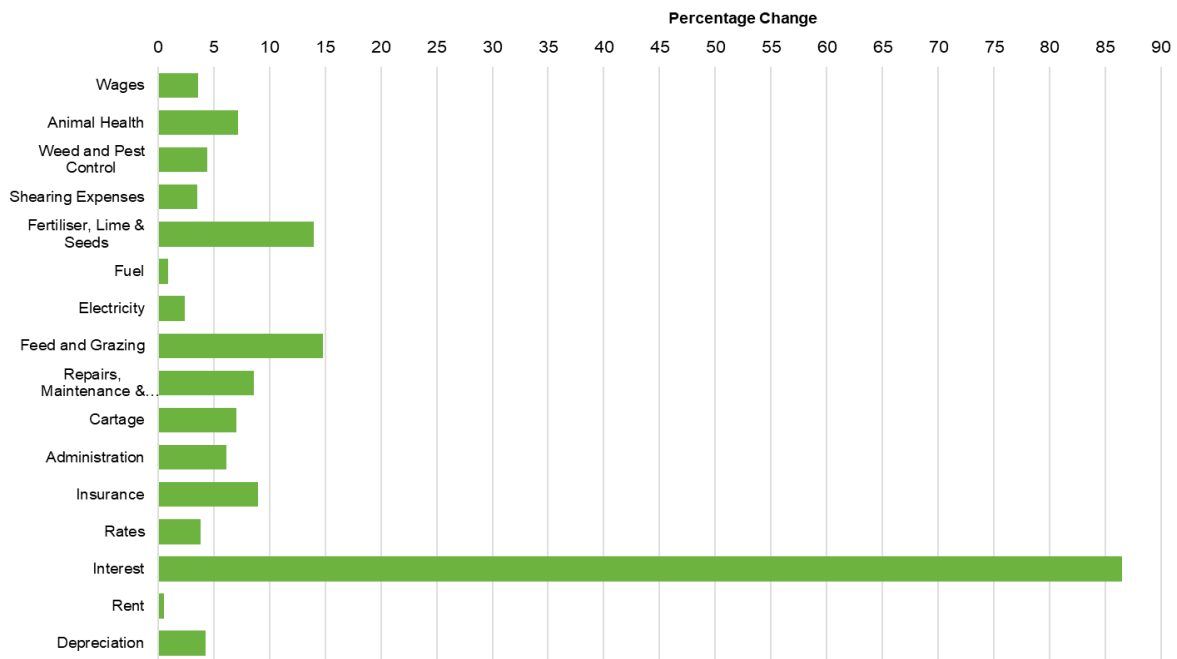
The overall price for *Feed and Grazing* increased 14.8 per cent in the year to March 2023 compared to a 5.5 per cent increase for the previous 12-month period. *Feed and Grazing* includes costs for making hay and silage, sheep and beef farmers typically conserve more feed than they purchase, and conservation is heavily dependant on seasonal conditions. Contractor expenses relating to feed conservation increased during the season.

Fertiliser, Lime & Seeds +14.0%

The price of *Fertiliser, Lime & Seeds* increased by 14.0 per cent in the year to March 2023, following a large increase of 23.0 per cent in the previous year. *Fertiliser, Lime & Seeds* input prices increased steadily throughout each quarter of 2022 then decreased in the first quarter of 2023.

Fertiliser is often the largest expense category for many sheep and beef farms, for the period 2019-20 to 2022-23 it is estimated at around 18.1 per cent of expenditure. The recent decrease in fertiliser prices may have provided some relief to farms buying fertiliser in autumn but for others the decrease was too late in the timing for their operation and prices were still at relatively high levels.

Figure 3: Sheep and Beef Farm Input Prices Changes – March 2022 to March 2023



Source: Beef + Lamb New Zealand Economic Service | Statistics New Zealand

The major items of expenditure are *Fertiliser, Lime & Seeds, Repairs, Maintenance & Vehicles, Interest* and *Wages*. Together they account for approximately half of total farm expenditure and combined prices increased 13.4 per cent.

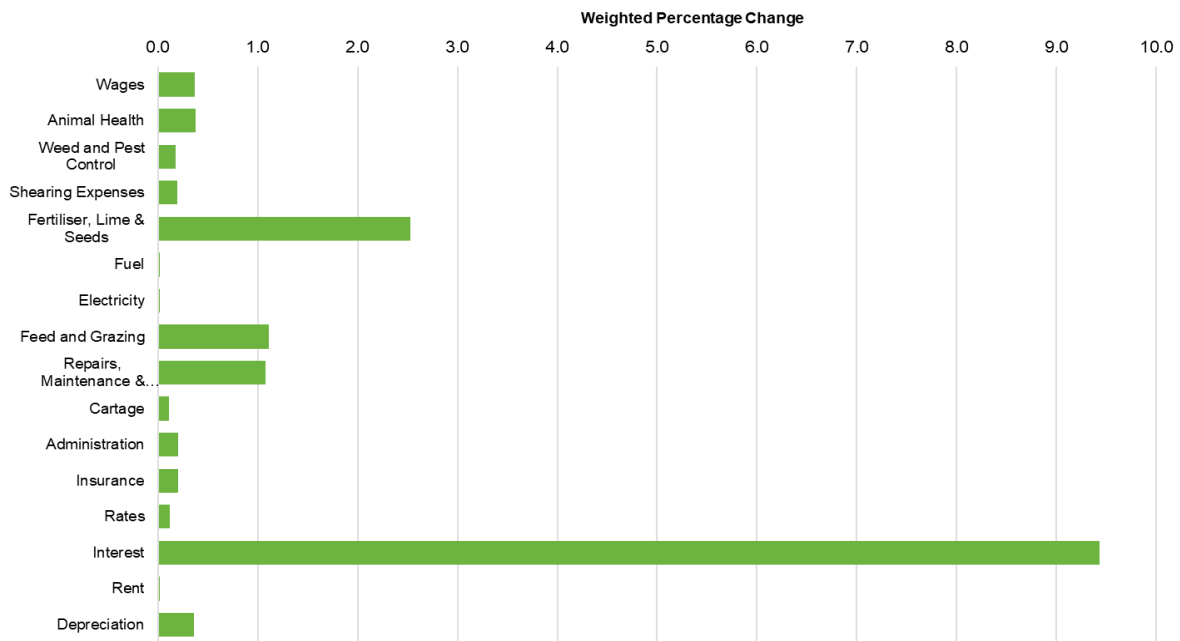
Repairs, Maintenance & Vehicles increased 8.6 per cent between March 2022 and March 2023. This area of expenditure is one where farmers often defer spending when profitability is relatively low or changeable.

For many, some *Repairs, Maintenance & Vehicles* expenditure will be deferred this season as spending on essentials is a focus - such as maintaining tractors and key machinery while fencing and riparian planting may be de-prioritised. A further reason for a slowing down on riparian planting, which has seen a flurry of activity, cost and time from farmers in recent years, is uncertainty on regulations. Farmers want to be sure they are spending money well and uncertainty creates confusion.

Figure 3 shows the change in price of each input while Figure 4 shows the change in price of each input **weighted** by its proportion of total farm expenditure.

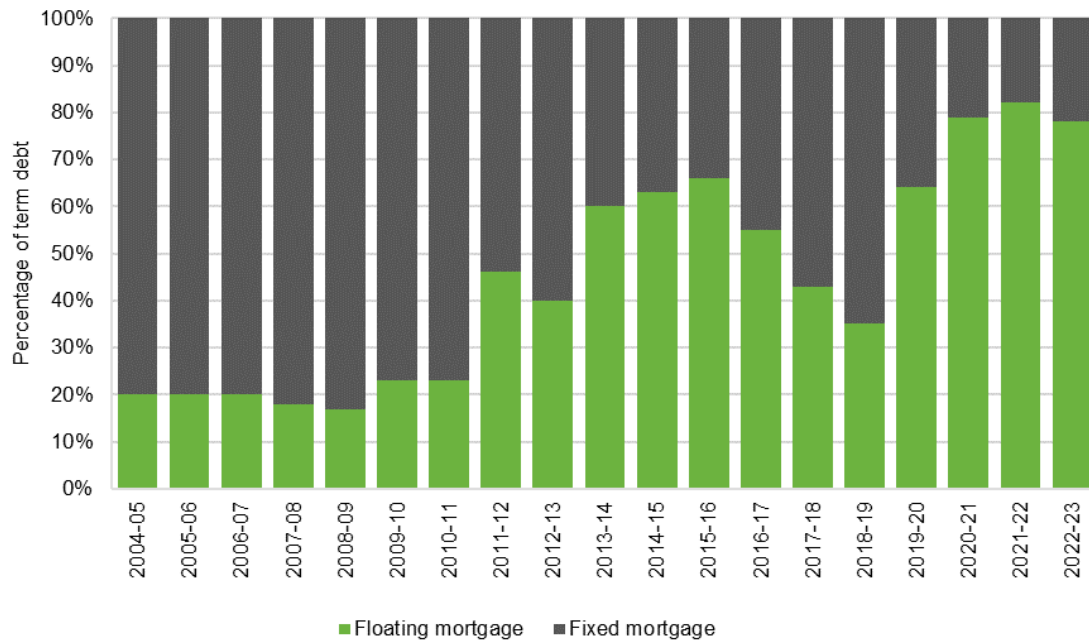
The price of *Interest* showed the greatest annual change (+86.5%) and with a weighting of 10.9 per cent of farm expenditure *Interest* is the biggest driver of on-farm inflation (Figure 4). A time-series of the percentage weights of expenditure items is shown in Appendix 4.

Figure 4: Sheep and Beef Farm Weighted Input Price Changes – March 2022 to March 2023



Source: Beef + Lamb New Zealand Economic Service | Statistics New Zealand

Figure 5: Sheep and Beef Farm Term debt fixed and floating mortgage trend



Source: Beef + Lamb New Zealand Economic Service | Statistics New Zealand

Table 1: Sheep and Beef Farm Input Price Changes

Sheep and Beef Farm Input Price Changes March 2022 to March 2023			
Categories of Expenditure	Percentage Change	Percentage Weight¹	Weighted Percentage Change²
	Col. 1	Col. 2	Col. 3
Wages	+3.6	10.2	+0.37
Animal Health	+7.2	5.3	+0.38
Weed and Pest Control	+4.4	4.2	+0.18
Shearing Expenses	+3.5	5.4	+0.19
Fertiliser, Lime & Seeds	+14.0	18.1	+2.53
Fuel	+0.9	2.7	+0.02
Electricity	+2.4	0.9	+0.02
Feed and Grazing	+14.8	7.5	+1.11
Repairs, Maintenance & Vehicles	+8.6	12.5	+1.08
Cartage	+7.0	1.6	+0.11
Administration	+6.1	3.3	+0.20
Insurance	+9.0	2.2	+0.20
Rates	+3.8	3.1	+0.12
Interest	+86.5	10.9	+9.43
Rent	+0.5	3.7	+0.02
Depreciation	+4.3	8.4	+0.36
TOTAL		100.0	+16.32

Notes:

1. Average three-year pattern of expenditure for Sheep and Beef Farms, i.e. (2019-20 to 2021-22p)
2. Col.(3) equals Col.(1) multiplied by Col.(2) divided by 100.
The result is rounded to two decimal places, e.g.
Wages $+3.6 \times 10.2 / 100 = 36.72 / 100 = +0.37$

Source: Beef + Lamb New Zealand Economic Service | Statistics New Zealand

3. Underlying on-farm inflation

Underlying on-farm inflation +7.8%

When excluding *Interest* from the calculation of the change in sheep and beef farm input prices, underlying on-farm inflation was 7.8 per cent in the year to March 2023.

Table 2 compares on-farm inflation with underlying on-farm inflation for the past 20 years. Underlying on-farm inflation over the past decade was 31.0 per cent, moderately higher than consumer price inflation over the same period at 27.2 per cent.

Table 2: Sheep and Beef On-Farm Inflation

Year	On-farm inflation (including Interest)		Underlying on-farm inflation (excluding Interest)	
	Percentage Change	Index ¹	Percentage Change	Index ¹
2000-01	+5.2	914	+6.0	907
2001-02	+1.7	930	+2.8	933
2002-03	+3.6	963	+3.4	964
2003-04	-0.2	961	+0.0	965
2004-05	+4.1	1,000	+3.7	1,000
2005-06	+4.8	1,048	+5.2	1,052
2006-07	+2.7	1,076	+2.7	1,080
2007-08	+9.7	1,181	+9.8	1,185
2008-09	+7.7	1,272	+10.9	1,314
2009-10	-2.9	1,235	-1.5	1,294
2010-11	+4.1	1,286	+3.8	1,343
2011-12	+2.3	1,315	+3.8	1,393
2012-13	+0.0	1,316	+0.7	1,403
2013-14	-0.6	1,308	-0.2	1,401
2014-15	+1.1	1,323	-0.3	1,397
2015-16	-2.0	1,296	0.0	1,397
2016-17	-0.2	1,294	+1.1	1,412
2017-18	+2.0	1,320	+2.2	1,443
2018-19	+3.0	1,359	+3.5	1,494
2019-20	+0.4	1,364	+1.5	1,517
2020-21	-1.1	1,350	+1.6	1,541
2021-22	+10.2	1,487	+10.7	1,706
2022-23	+16.3	1,729	+7.8	1,838
10 years to 2022-23	+31.4		+31.0	
5 years to 2022-23	+31.1		+27.3	
3 years to 2022-23	+26.8		+21.2	
2 years to 2022-23	+28.1		+19.3	

Note:

1. Index 2004-05 =1000

Source: Beef + Lamb New Zealand Economic Service

4. Methodology and sources

The objective in this analysis is to isolate the price changes for the various input categories. An inflation rate (or overall price change) is then derived by weighting the price change for each individual category by its proportion of total farm expenditure. These proportions are based on a three-year moving average.

GST is excluded from the calculation of farm input price changes because this tax is recovered from farm expenditure.

This publication relies heavily on Statistics New Zealand (SNZ) Sheep and Beef Farm Expenses Price Index (FEPI) data. The March quarter data, which is published by SNZ in May, is released online at www.stats.govt.nz under the category “Business Price Indexes” (BPI) as downloadable tables.

Beef + Lamb New Zealand’s Sheep and Beef Farm input prices differ from the SNZ data in three areas:

1. Interest charges are calculated independently to take account of both overdraft and mortgage interest rates, including fixed term interest, and are weighted using data from B+LNZ’s Sheep and Beef Farm Survey.
2. Depreciation is included to measure the price changes for capital replacement. This item correctly lines up the input prices paid index with the on-farm expenditure reported by the B+LNZ Sheep and Beef Farm Survey.
3. A three-year moving average of actual on-farm expenditure from the Sheep and Beef Farm Survey is used to weight individual categories to the single overall percentage price change for the year.

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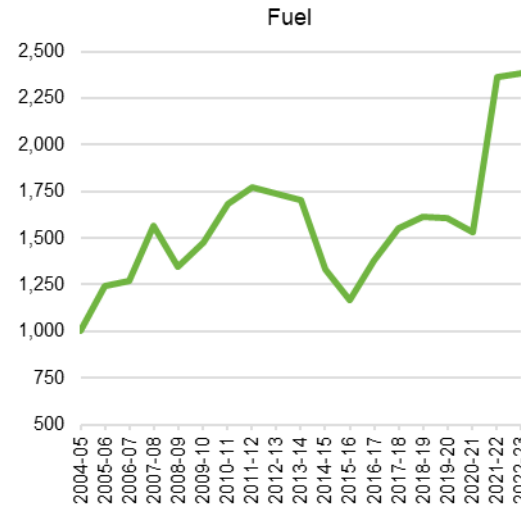
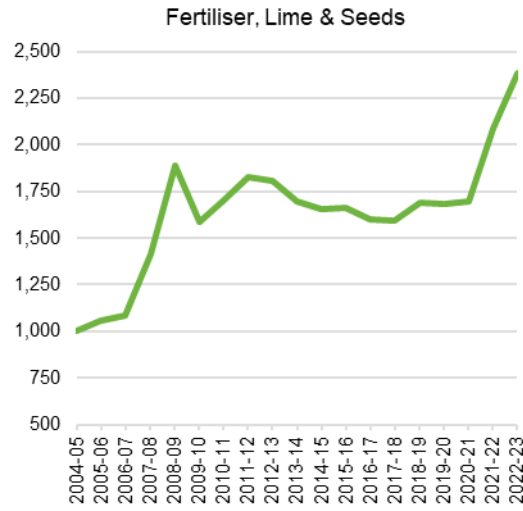
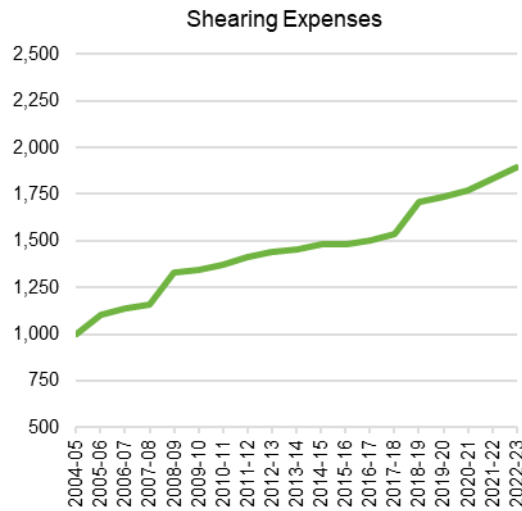
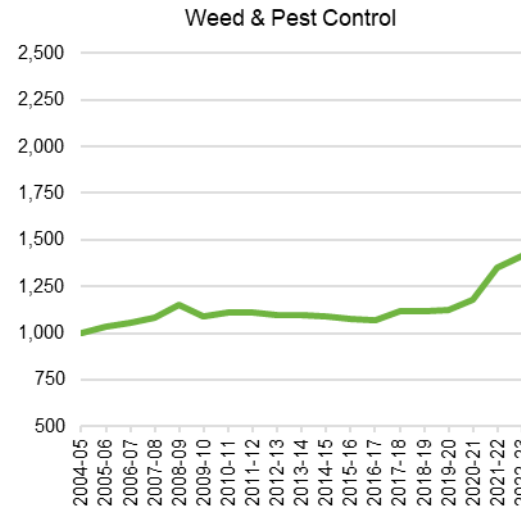
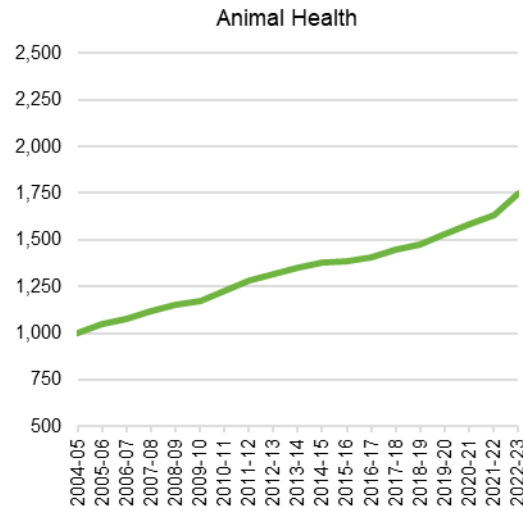
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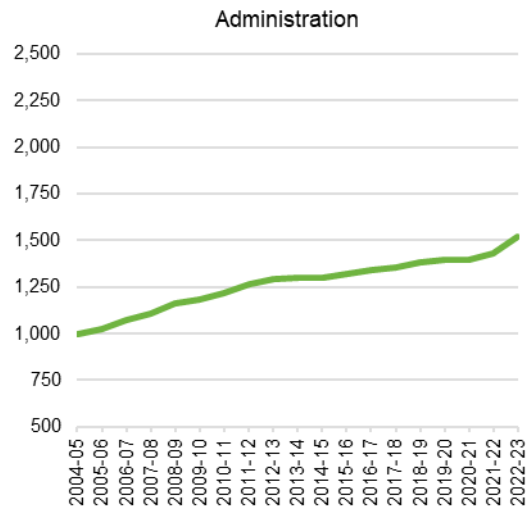
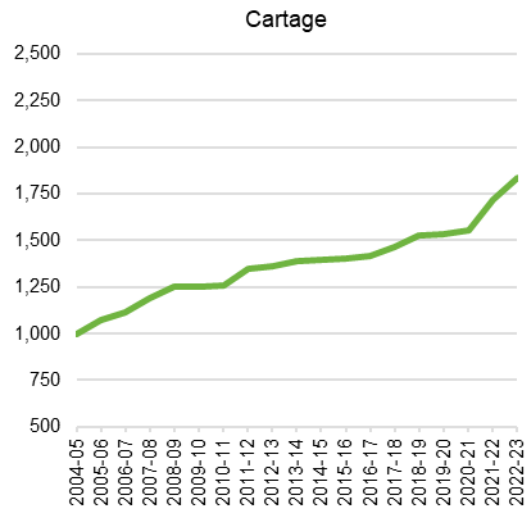
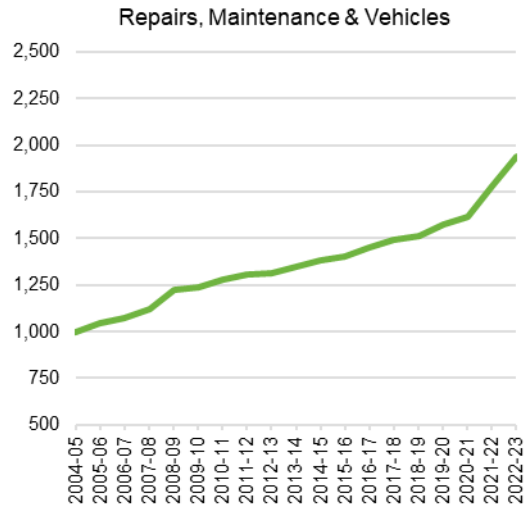
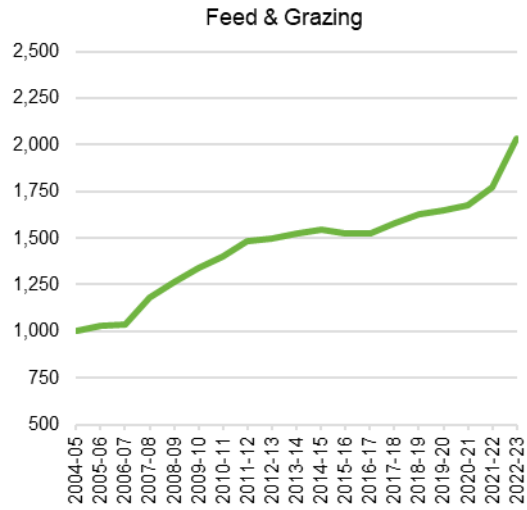
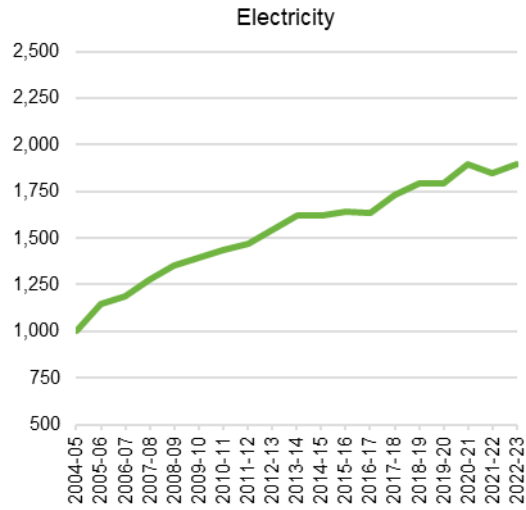
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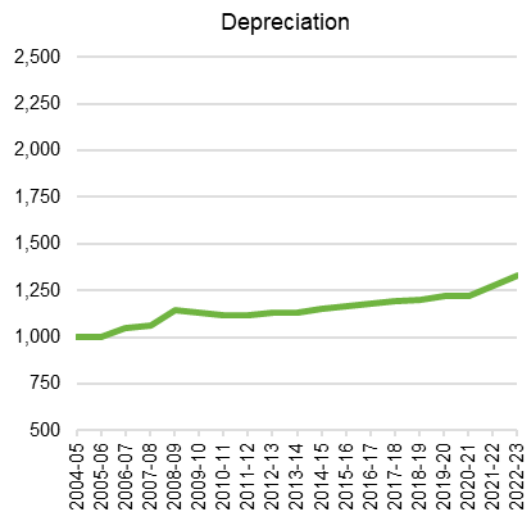
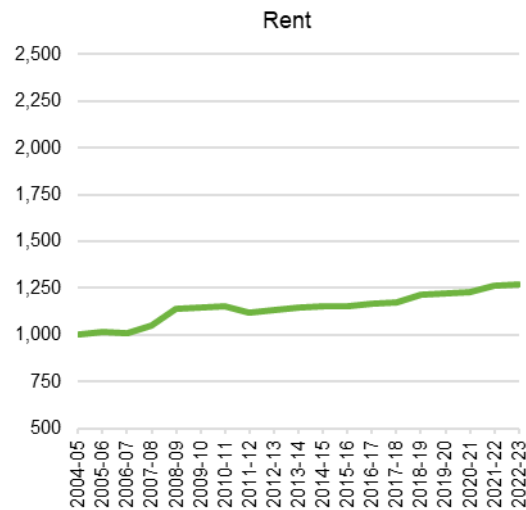
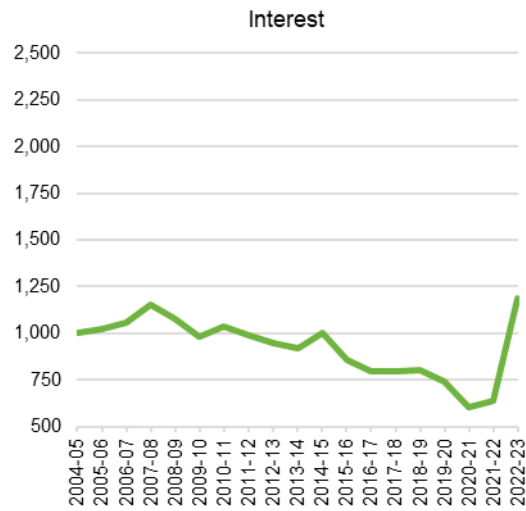
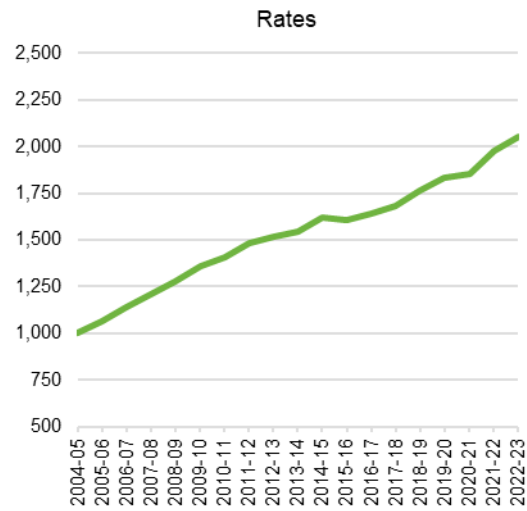
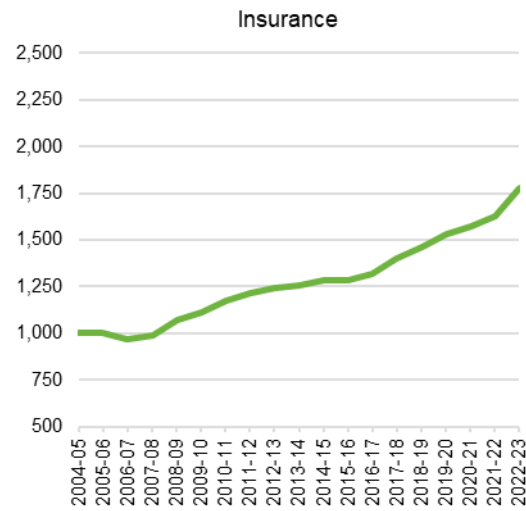
5. Appendices

Appendix 1: Cumulative On-Farm Inflation Indexes – Farm Working Expenses (2004-05 = 1000)





Appendix 2: Cumulative On-Farm Inflation Indexes – Standing Charges and Depreciation (2004-05 = 1000)



Appendix 3: Annual Percentage changes in Sheep and Beef Farm Input Prices

ANNUAL PERCENTAGE CHANGES IN SHEEP AND BEEF FARM INPUT PRICES

	March Quarter Prices										
FARM EXPENDITURE	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Wages	+1.6	+1.8	+2.0	+1.2	+1.3	+1.8	+1.7	+1.3	+2.1	+2.8	+3.6
Animal Health	+3.0	+2.4	+2.0	+0.3	+1.9	+2.6	+2.0	+3.7	+3.8	+3.0	+7.2
Weed & Pest Control	-1.1	-0.1	-0.6	-0.9	-1.1	+4.6	-0.2	+0.6	+5.0	+14.9	+4.4
Shearing Expenses	+1.7	+1.1	+1.8	+0.3	+1.3	+2.3	+11.2	+1.4	+2.2	+3.2	+3.5
Fertiliser, Lime & Seeds	-1.1	-6.1	-2.3	+0.6	-3.8	-0.6	+6.2	-0.3	+0.8	+23.0	+14.0
Fuel	-2.0	-2.0	-21.7	-12.7	+18.8	+12.1	+4.0	-0.4	-4.7	+54.3	+0.9
Electricity	+5.0	+4.9	+0.2	+1.1	-0.3	+5.8	+3.7	-0.1	+5.8	-2.6	+2.4
Feed & Grazing	+1.0	+2.1	+1.1	-1.1	-0.3	+3.6	+3.3	+1.0	+1.9	+5.5	+14.8
Repairs, Maintenance & Vehicles	+0.5	+2.6	+2.2	+1.7	+3.5	+2.7	+1.4	+4.2	+2.4	+10.4	+8.6
Cartage	+1.3	+2.1	+0.3	+0.7	+0.9	+3.4	+4.0	+0.6	+1.3	+10.5	+7.0
Administration	+2.1	+0.5	-0.2	+1.4	+2.0	+0.6	+2.3	+0.9	+0.1	+2.4	+6.1
Insurance	+2.4	+1.2	+2.4	-0.4	+2.7	+6.7	+4.1	+5.0	+2.5	+3.6	+9.0
Rates	+2.2	+1.6	+4.9	-0.7	+2.0	+2.7	+5.1	+3.7	+1.3	+6.5	+3.8
Interest	-3.9	-3.0	+9.4	-14.5	-7.5	+0.5	+0.1	-7.2	-18.9	+5.9	+86.5
Rent	+1.3	+1.2	+0.2	+0.0	+1.5	+0.3	+4.0	+0.4	+0.5	+2.6	+0.5
Depreciation	+1.4	+0.1	+1.4	+1.3	+1.2	+1.4	+0.4	+1.4	+0.1	+4.7	+4.3
On-Farm Inflation (including Interest)	+0.0	-0.6	+1.1	-2.1	-0.2	+2.0	+3.0	+0.4	-1.1	+10.2	+16.3
Underlying On-Farm Inflation (excluding Interest)	+0.7	-0.2	-0.3	+0.0	+1.1	+2.2	+3.5	+1.5	+1.6	+10.7	+7.8
Consumer Price Index (CPI)	+0.9	+1.5	+0.3	+0.4	+2.2	+1.1	+1.5	+2.5	+1.5	+6.9	+6.9

Source: Beef + Lamb New Zealand Economic Service | Statistics New Zealand

Appendix 4: Percentage allocation of Sheep and Beef Farm Expenditure

PERCENTAGE ALLOCATION OF SHEEP & BEEF FARM EXPENDITURE (JUNE YEAR)

FARM EXPENDITURE	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Wages	8.9	9.0	9.0	8.9	8.8	9.0	9.2	9.3	9.4	9.7	10.2
Animal Health	4.9	5.1	5.1	5.2	5.1	5.1	5.1	5.3	5.3	5.3	5.3
Weed & Pest Control	3.5	3.5	3.7	3.6	3.8	3.9	3.9	4.2	4.2	3.9	4.2
Shearing Expenses	5.4	5.4	5.4	5.3	5.2	5.0	5.0	5.0	5.2	5.4	5.4
Fertiliser, Lime & Seeds	17.5	17.6	17.4	17.2	17.2	17.0	16.8	16.9	16.8	17.5	18.1
Fuel	3.6	3.8	3.8	3.5	3.1	2.8	2.6	2.8	2.9	2.8	2.7
Electricity	0.9	0.9	0.9	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Feed & Grazing	7.6	7.8	8.0	8.0	8.2	8.0	8.5	8.0	8.5	8.1	7.5
Repairs, Maintenance & Vehicles	11.6	11.7	11.9	11.8	11.9	12.0	12.0	11.8	12.1	12.1	12.5
Cartage	1.8	1.8	1.8	1.7	1.7	1.6	1.7	1.7	1.7	1.6	1.6
Administration	3.6	3.6	3.6	3.6	3.7	3.7	3.6	3.4	3.3	3.3	3.3
Sub-Total Working Expenses	69.3	70.2	70.6	69.8	69.6	69.0	69.3	69.3	70.3	70.6	71.7
Insurance	1.8	1.9	1.9	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.2
Rates	3.1	3.0	3.0	3.1	3.1	3.2	3.3	3.1	3.1	3.1	3.1
Interest	15.1	14.5	14.2	14.3	14.2	14.2	13.7	13.6	12.8	12.3	10.9
Rent	2.9	2.9	3.0	3.3	3.5	3.6	3.4	3.5	3.5	3.7	3.7
Sub-Total Standing Charges	22.9	22.3	22.1	22.7	22.8	23.0	22.5	22.3	21.5	21.3	19.9
TOTAL CASH EXPENDITURE	92.2	92.5	92.7	92.5	92.4	92.0	91.8	91.6	91.8	91.9	91.6
Depreciation	7.8	7.5	7.3	7.5	7.6	8.0	8.2	8.4	8.2	8.1	8.4
TOTAL FARM EXPENDITURE	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

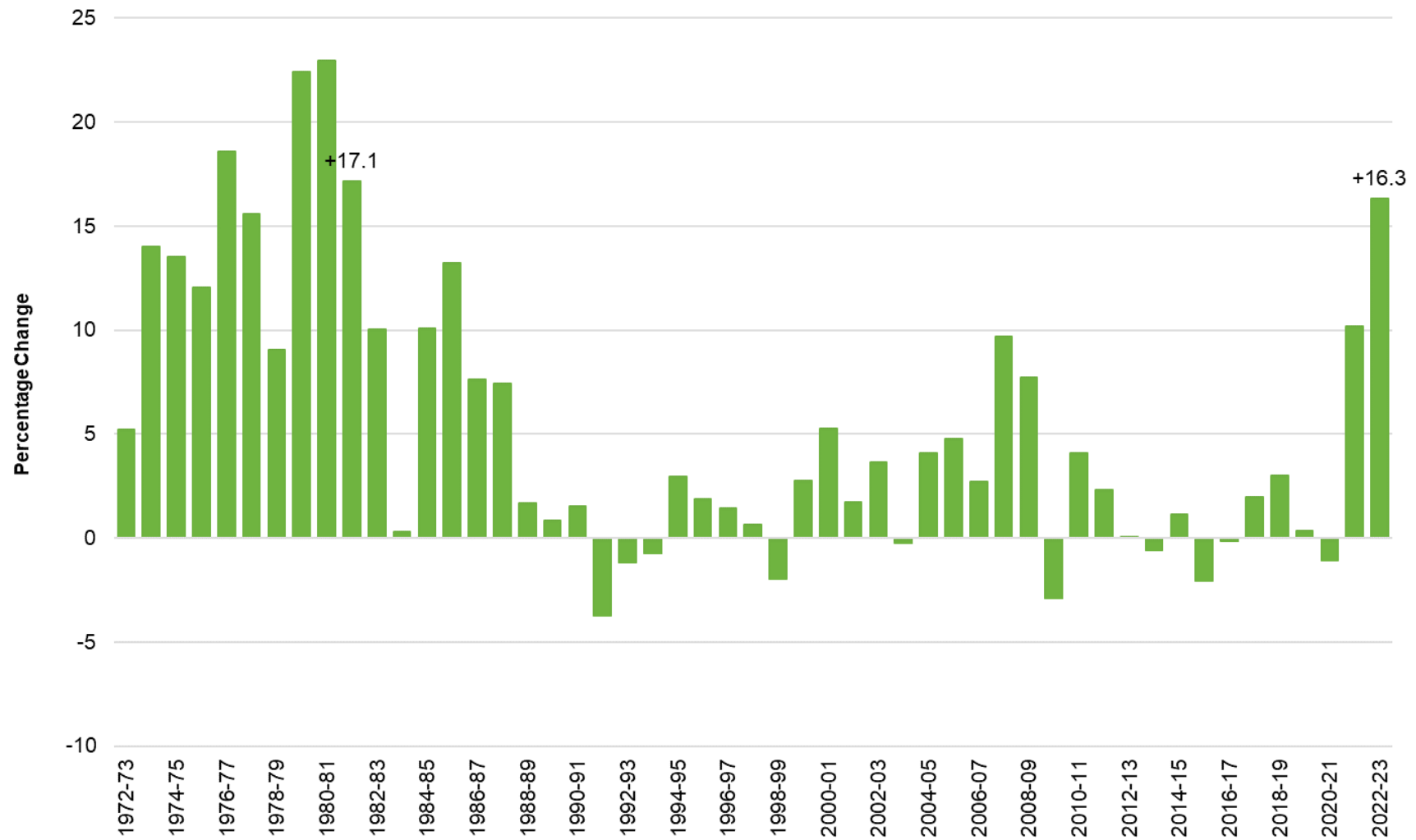
Notes:

1. All cost movements are calculated exclusive of GST.
2. Changes are weighted by the average three-year pattern of expenditure on Sheep and Beef farms using the last two final Survey years and the provisional year.
3. Wages includes Managerial Salaries and ACC from 2004-05 onwards.
4. Feed & Grazing includes Feed and Grazing + Cultivation and Sowing + Cash Crop Expenses categories.
5. Irrigation Expenses are not included in the price changes.

Source: Beef + Lamb New Zealand Economic Service



Appendix 5: Sheep and Beef On-Farm Inflation 1972-2023



Source: Beef + Lamb New Zealand Economic Service | Statistics New Zealand