



Sheep and Beef On-farm Inflation 2021-22



© Beef + Lamb New Zealand Economic Service | P22005 | June 2022

0800 BEEFLAMB (0800 233 352) | WWW.BEEFLAMBNZ.COM | BY FARMERS. FOR FARMERS

SHEEP AND BEEF ON-FARM INFLATION 2021-22

Paper No. P22005 | ISSN 2230-5777 | June 2022

1. On-farm inflation.....	1
2. Annual changes in farm input prices.....	3
3. Underlying on-farm inflation	5
4. Methodology and sources.....	7
5. Appendices.....	8

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.

1. On-farm inflation

On-farm inflation +10.2% in 2022

Prices for sheep and beef farm inputs **increased 10.2 per cent** between March 2021 and March 2022 compared with a 1.1 per cent **decrease** in the previous 12-month period (see Figure 1).

Of the 16 categories of inputs, prices increased for 15 and decreased for one – Electricity (-2.6%). The largest increase in price was for Fuel (+54.3%) however the impact of a 23.0 per cent increase in Fertiliser, Lime and Seed prices is more significant for sheep and beef farmers because this area of expenditure comprises 17.5 per cent of total farm expenditure. The prices of almost one-third of categories of farm expenditure increased by 10 per cent or more (see Figure 3).

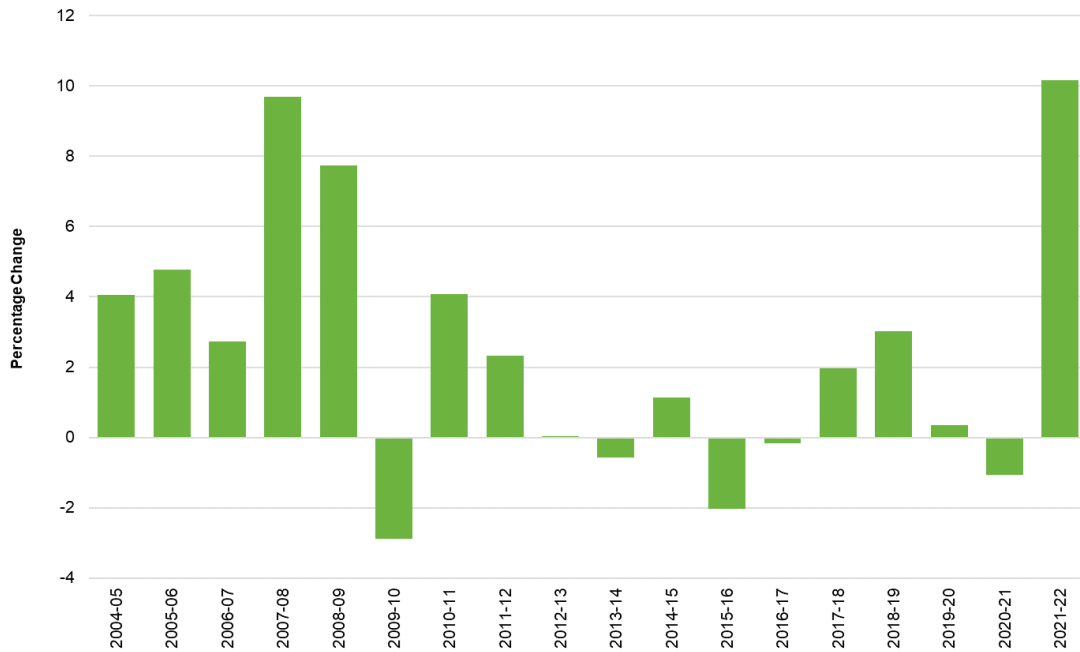
On-farm inflation +14.9% in 5 years +13.0% in 10 years

Prices for sheep and beef farm inputs were up 14.9 per cent over the last five years, and up 13.0 per cent over the last 10 years. See Table 2.

On-farm inflation higher than consumer price inflation in 2022

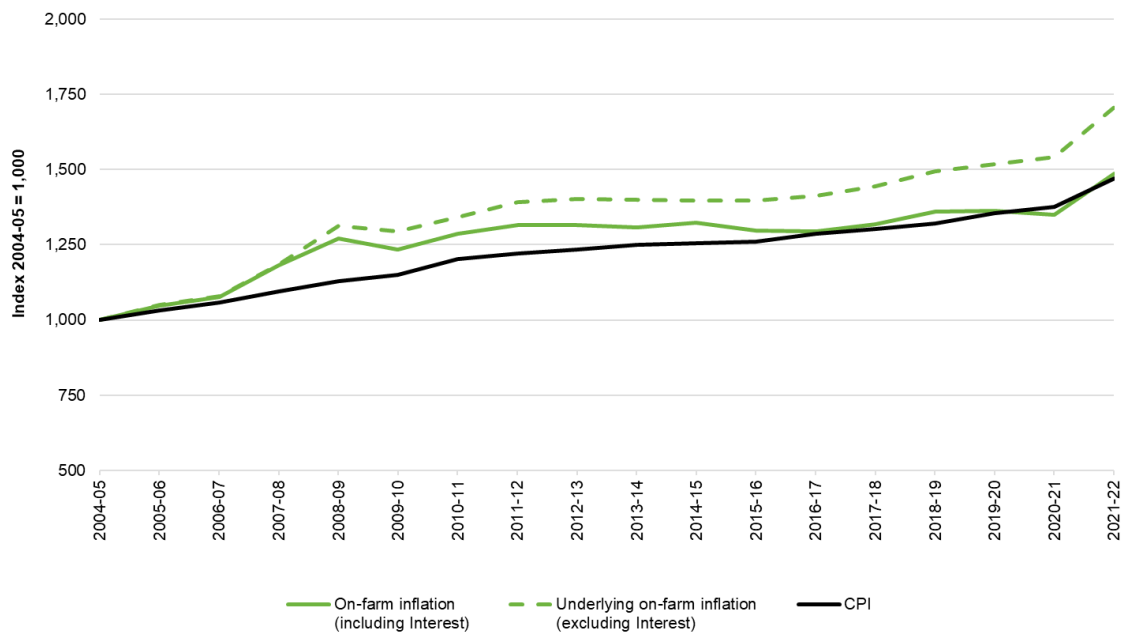
On-farm inflation was higher than consumer price inflation in 2022, which was 6.9 per cent between March 2021 and March 2022. Over the last five years, consumer price inflation was 14.1 per cent, and over the last 10 years it was 20.3 per cent (see Figure 2).

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

Fuel +54.3%

Between March 2021 and March 2022, the overall price for Fuel increased by 54.3 per cent following a 4.7 per cent **decrease** reported for the previous 12-month period. A number of factors contributed to fuel price increases over the period including increased levy under the New Zealand Emissions Trading Scheme (ETS), increased demand for fuel globally – against a background of limited supply, import costs, supply problems and latterly uncertainty caused by the invasion of Ukraine by Russia.

Fertiliser, Lime & Seeds +23.0%

The price of Fertiliser, Lime & Seeds increased by 23.0 per cent in the year to March 2022, following a slight increase (+0.8%) in the previous year. Fertiliser prices hit highs due to demand outstripping supply as soaring energy costs resulted in output cuts in the global fertiliser manufacturing sector. In late 2021, some key fertiliser producers (such as China, Russia and Egypt) introduced restrictions on exports to reduce any impact on domestic food production. Prices of locally manufactured fertilisers reportedly increased by a lesser rate than imports – farmers were quick to look for alternatives and make changes to their nutrient management budgets where possible.

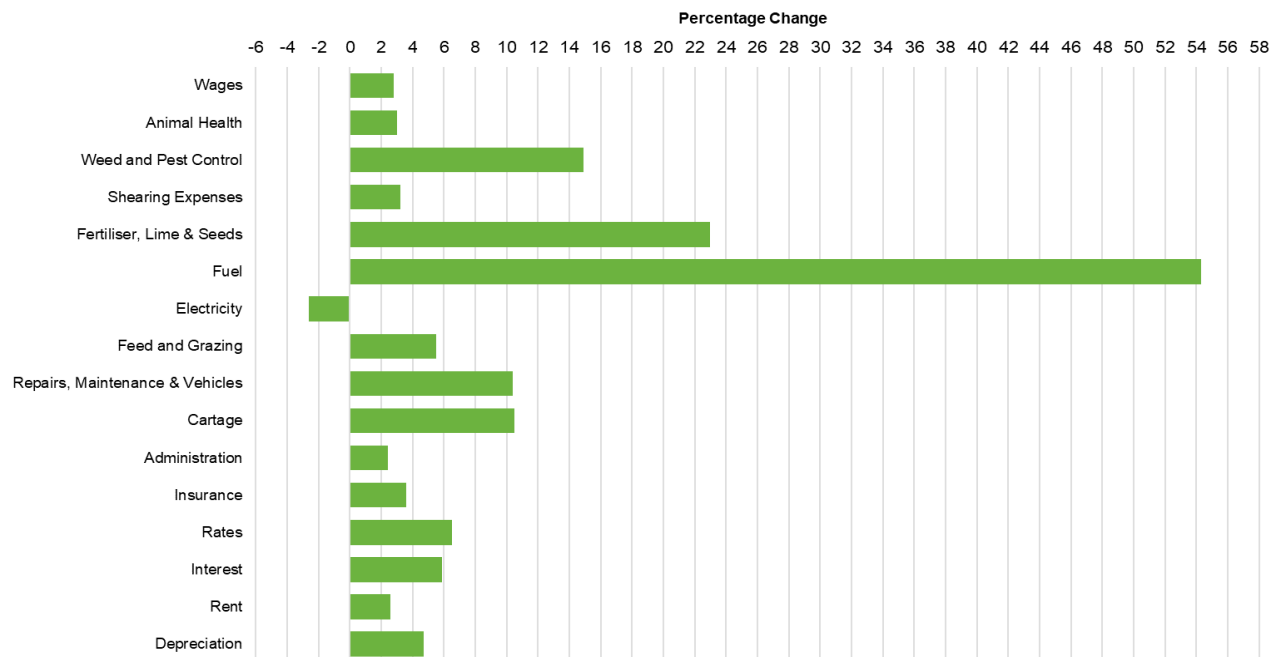
Weed and Pest Control +14.9%

The overall price for Weed and Pest Control increased 14.9 per cent in the year to March 2022 compared to a 5.0 per cent increase for the previous 12-month period.

Repairs, Maintenance & Vehicles +10.4%

Between March 2021 and March 2022, the overall price for Repairs, Maintenance and Vehicles increased by 10.4 per cent following a 2.4 per cent increase in the previous 12-month period. One element of the increased prices is labour costs for hiring contractors and tradespeople, in addition to increased shipping costs and prices for materials.

Figure 3: Sheep and Beef Farm Input Prices Changes – March 2021 to March 2022



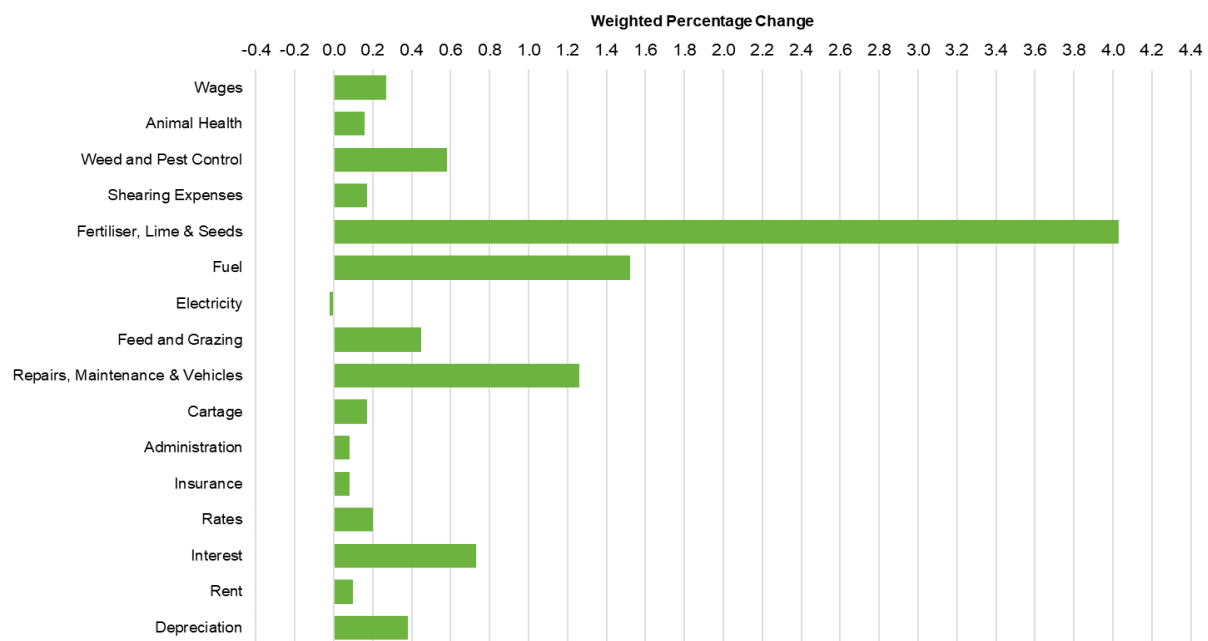
Source: Beef + Lamb New Zealand Economic Service | Statistics New Zealand

The major items of expenditure are Fertiliser, Lime and Seeds; Interest; and Repairs, Maintenance and Vehicles. Together they account for approximately 42 per cent of total farm expenditure and combined prices increased 6.0 per cent.

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 Fuel showed the greatest annual change (+54.3%) and with a weighting of 2.8 per cent of farm expenditure, Fuel is the second biggest driver of on-farm inflation after Fertiliser, Lime, and Seeds (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 2021 to March 2022



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 2021 to March 2022			
Categories of Expenditure	Percentage Change	Percentage Weight¹	Weighted Percentage Change²
	Col. 1	Col. 2	Col. 3
Wages	+2.8	9.7	+0.27
Animal Health	+3.0	5.3	+0.16
Weed and Pest Control	+14.9	3.9	+0.58
Shearing Expenses	+3.2	5.4	+0.17
Fertiliser, Lime & Seeds	+23.0	17.5	+4.03
Fuel	+54.3	2.8	+1.52
Electricity	-2.6	0.9	-0.02
Feed and Grazing	+5.5	8.1	+0.45
Repairs, Maintenance & Vehicles	+10.4	12.1	+1.26
Cartage	+10.5	1.6	+0.17
Administration	+2.4	3.3	+0.08
Insurance	+3.6	2.2	+0.08
Rates	+6.5	3.1	+0.20
Interest	+5.9	12.3	+0.73
Rent	+2.6	3.7	+0.10
Depreciation	+4.7	8.1	+0.38
TOTAL		100.0	+10.16

Notes:

1. Average three-year pattern of expenditure for Sheep and Beef Farms, i.e. (2018-19 to 2020-21p)
2. Col.(3) equals Col.(1) multiplied by Col.(2) divided by 100.
The result is rounded to two decimal places, e.g.
Wages $+2.8 \times 9.7 / 100 = 27.16 / 100 = +0.27$

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

3. Underlying on-farm inflation

Underlying on-farm inflation +10.7%

When excluding interest from the calculation of the change in sheep and beef farm input prices, underlying on-farm inflation was 10.7 per cent in the year to March 2022, a level similar to 2008-09 when underlying on-farm inflation was 10.9 per cent.

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 22.4 per cent, slightly higher than consumer price inflation over the same period at 20.3 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
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
10 years to 2021-22	+13.0		+22.4	
5 years to 2021-22	+14.9		+20.8	
3 years to 2021-22	+9.4		+14.2	
2 years to 2021-22	+9.0		+12.5	

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 is published by SNZ in May. The SNZ data is published online at www.stats.govt.nz and is provided under the category “Business Price Indexes” (BPI) as downloadable tables.

Beef + Lamb New Zealand Economic Service 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 Beef + Lamb New Zealand Economic Service Sheep and Beef Farm Survey All Classes data.
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 Beef + Lamb New Zealand Economic Service Sheep and Beef Farm Survey for All Classes.
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.

Disclaimer

© 2022 Beef + Lamb New Zealand Limited also referred to as B+LNZ, B+LNZ - Economic Service and the Economic Service.

All rights reserved. This work is covered by copyright and may not be stored, reproduced or copied without the prior written permission of Beef + Lamb New Zealand Limited.

Beef + Lamb New Zealand Limited, its employees and Directors shall not be liable for any loss or damage sustained by any person relying on the forecasts contained in this document, whatever the cause of such loss or damage.

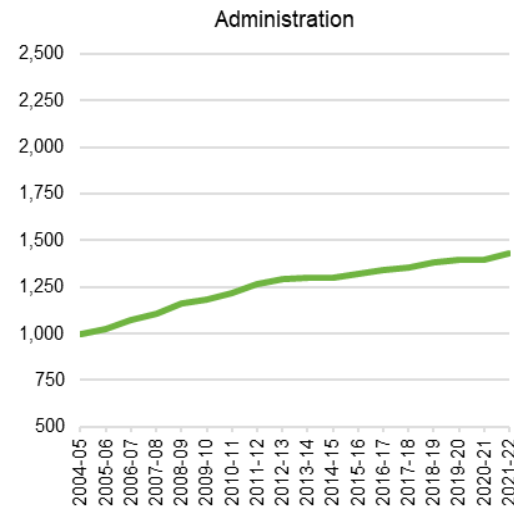
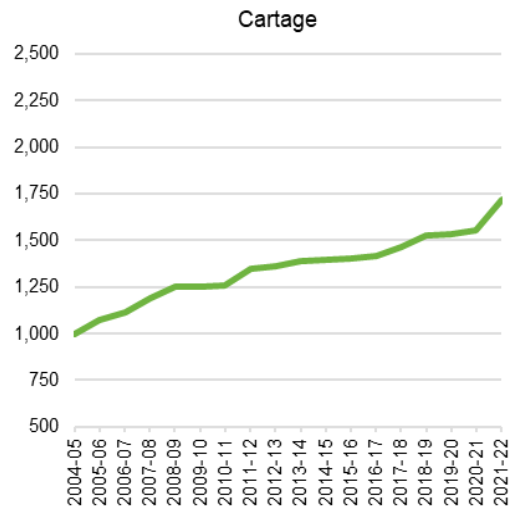
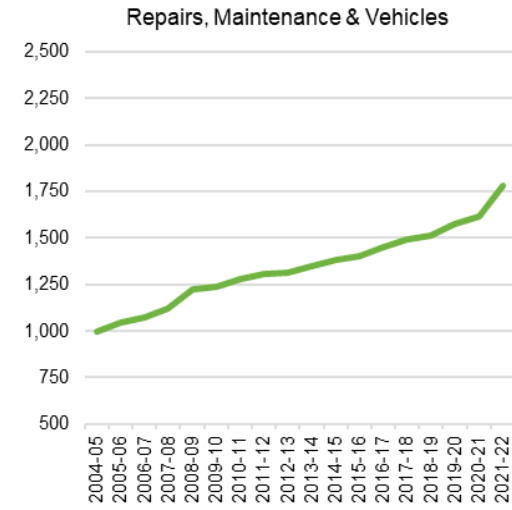
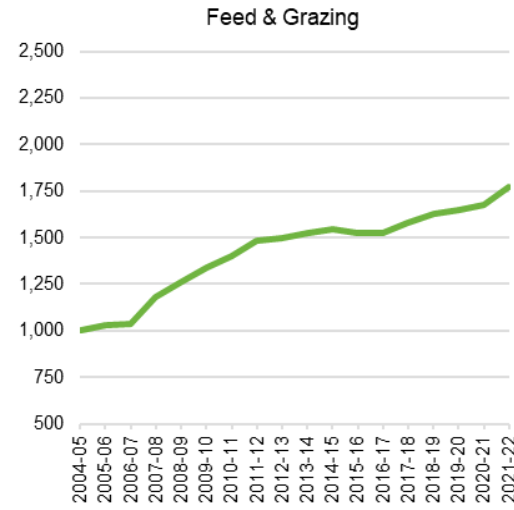
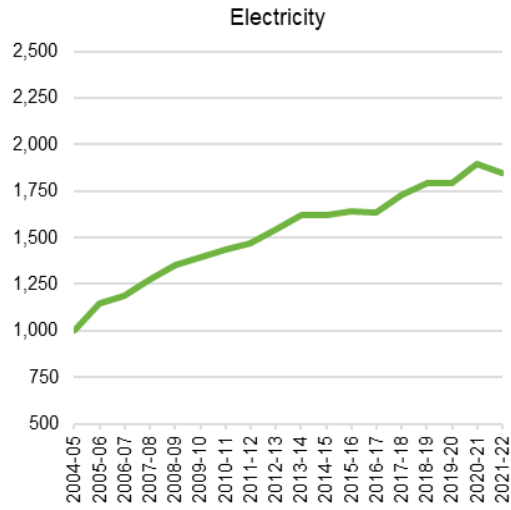
Beef + Lamb New Zealand
PO Box 121
Wellington 6140
New Zealand

Phone: +64 (4) 473 9150
E-mail: econ@beeflambnz.com
Contact: Andrew Burt, Chief Economist +64 (27) 652 9543

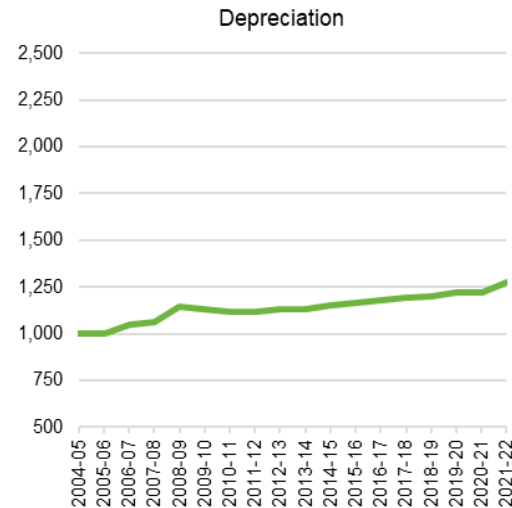
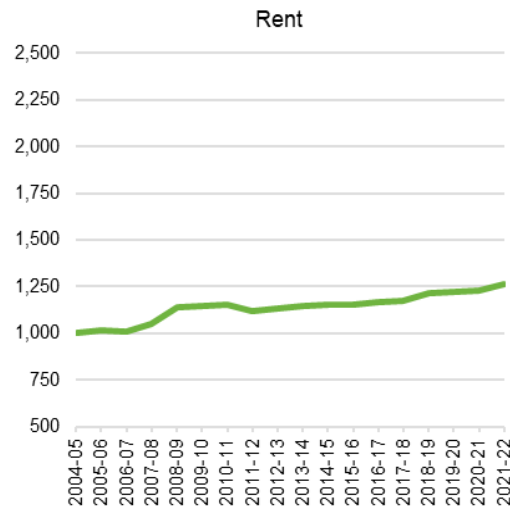
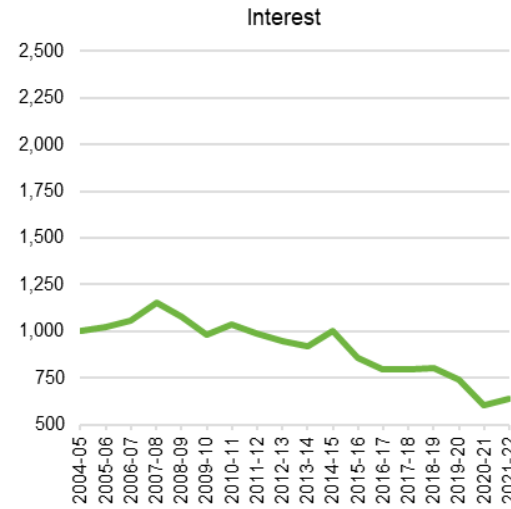
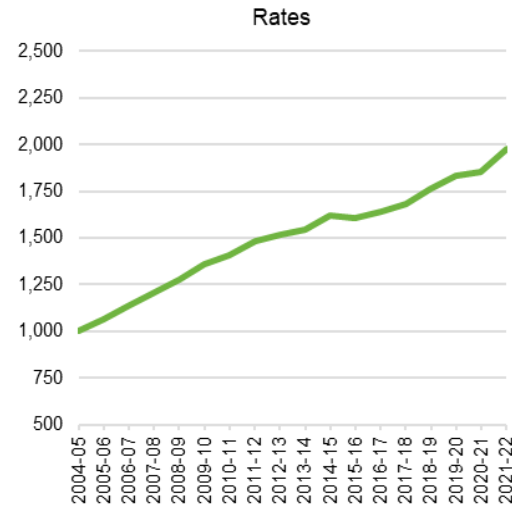
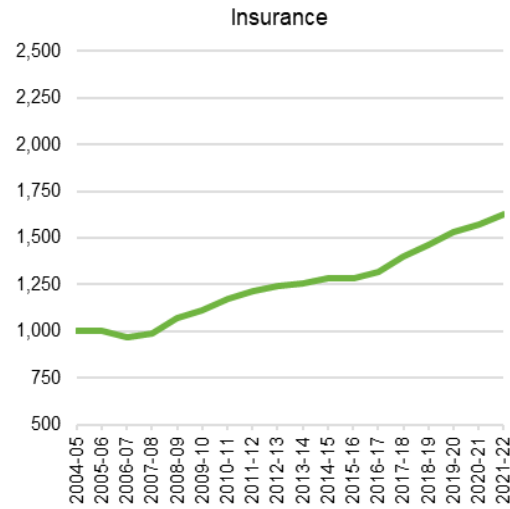
5. Appendices

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 March Quarter Prices

FARM EXPENDITURE	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Wages	+2.5	+1.6	+1.8	+2.0	+1.2	+1.3	+1.8	+1.7	+1.3	+2.1	+2.8
Animal Health	+4.3	+3.0	+2.4	+2.0	+0.3	+1.9	+2.6	+2.0	+3.7	+3.8	+3.0
Weed & Pest Control	+0.1	-1.1	-0.1	-0.6	-0.9	-1.1	+4.6	-0.2	+0.6	+5.0	+14.9
Shearing Expenses	+3.2	+1.7	+1.1	+1.8	+0.3	+1.3	+2.3	+11.2	+1.4	+2.2	+3.2
Fertiliser, Lime & Seeds	+7.0	-1.1	-6.1	-2.3	+0.6	-3.8	-0.6	+6.2	-0.3	+0.8	+23.0
Fuel	+5.4	-2.0	-2.0	-21.7	-12.7	+18.8	+12.1	+4.0	-0.4	-4.7	+54.3
Electricity	+2.6	+5.0	+4.9	+0.2	+1.1	-0.3	+5.8	+3.7	-0.1	+5.8	-2.6
Feed & Grazing	+5.9	+1.0	+2.1	+1.1	-1.1	-0.3	+3.6	+3.3	+1.0	+1.9	+5.5
Repairs, Maintenance & Vehicles	+2.4	+0.5	+2.6	+2.2	+1.7	+3.5	+2.7	+1.4	+4.2	+2.4	+10.4
Cartage	+6.6	+1.3	+2.1	+0.3	+0.7	+0.9	+3.4	+4.0	+0.6	+1.3	+10.5
Administration	+4.4	+2.1	+0.5	-0.2	+1.4	+2.0	+0.6	+2.3	+0.9	+0.1	+2.4
Insurance	+3.4	+2.4	+1.2	+2.4	-0.4	+2.7	+6.7	+4.1	+5.0	+2.5	+3.6
Rates	+5.6	+2.2	+1.6	+4.9	-0.7	+2.0	+2.7	+5.1	+3.7	+1.3	+6.5
Interest	-4.6	-3.9	-3.0	+9.4	-14.5	-7.5	+0.5	+0.1	-7.2	-18.9	+5.9
Rent	-2.7	+1.3	+1.2	+0.2	+0.0	+1.5	+0.3	+4.0	+0.4	+0.5	+2.6
Depreciation	+0.3	+1.4	+0.1	+1.4	+1.3	+1.2	+1.4	+0.4	+1.4	+0.1	+4.7
On-Farm Inflation (including Interest)	+2.3	+0.0	-0.6	+1.1	-2.1	-0.2	+2.0	+3.0	+0.4	-1.1	+10.2
Underlying On-Farm Inflation (excluding Interest)	+3.8	+0.7	-0.2	-0.3	+0.0	+1.1	+2.2	+3.5	+1.5	+1.6	+10.7
Consumer Price Index (CPI)	+1.6	+0.9	+1.5	+0.3	+0.4	+2.2	+1.1	+1.5	+2.5	+1.5	+6.9

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

Appendix 4

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

FARM EXPENDITURE	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Wages	8.5	8.9	9.0	9.0	8.9	8.8	9.0	9.2	9.3	9.4	9.7
Animal Health	4.7	4.9	5.1	5.1	5.2	5.1	5.1	5.1	5.3	5.3	5.3
Weed & Pest Control	3.4	3.5	3.5	3.7	3.6	3.8	3.9	3.9	4.2	4.2	3.9
Shearing Expenses	5.4	5.4	5.4	5.4	5.3	5.2	5.0	5.0	5.0	5.2	5.4
Fertiliser, Lime & Seeds	16.5	17.5	17.6	17.4	17.2	17.2	17.0	16.8	16.9	16.8	17.5
Fuel	3.6	3.6	3.8	3.8	3.5	3.1	2.8	2.6	2.8	2.9	2.8
Electricity	0.9	0.9	0.9	0.9	1.0	0.9	0.9	0.9	0.9	0.9	0.9
Feed & Grazing	7.3	7.6	7.8	8.0	8.0	8.2	8.0	8.5	8.0	8.5	8.1
Repairs, Maintenance & Vehicles	10.9	11.6	11.7	11.9	11.8	11.9	12.0	12.0	11.8	12.1	12.1
Cartage	1.9	1.8	1.8	1.8	1.7	1.7	1.6	1.7	1.7	1.7	1.6
Administration	3.5	3.6	3.6	3.6	3.6	3.7	3.7	3.6	3.4	3.3	3.3
Sub-Total Working Expenses	66.6	69.3	70.2	70.6	69.8	69.6	69.0	69.3	69.3	70.3	70.6
Insurance	1.7	1.8	1.9	1.9	2.0	2.0	2.0	2.1	2.1	2.1	2.2
Rates	3.1	3.1	3.0	3.0	3.1	3.1	3.2	3.3	3.1	3.1	3.1
Interest	16.9	15.1	14.5	14.2	14.3	14.2	14.2	13.7	13.6	12.8	12.3
Rent	3.1	2.9	2.9	3.0	3.3	3.5	3.6	3.4	3.5	3.5	3.7
Sub-Total Standing Charges	24.8	22.9	22.3	22.1	22.7	22.8	23.0	22.5	22.3	21.5	21.3
TOTAL CASH EXPENDITURE	91.4	92.2	92.5	92.7	92.5	92.4	92.0	91.8	91.6	91.8	91.9
Depreciation	8.6	7.8	7.5	7.3	7.5	7.6	8.0	8.2	8.4	8.2	8.1
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

