



Sheep and Beef On-farm Inflation 2020-21

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SHEEP AND BEEF ON-FARM INFLATION 2020-21

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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 -1.1% in 2021

Prices for sheep and beef farm inputs decreased 1.1 per cent between March 2020 and March 2021 compared with a 0.4 per cent increase in the previous 12-month period (see Figure 1).

Of the 16 categories of inputs, prices increased for 14 and decreased for two – Interest and Fuel. The largest decrease in price was for Interest (-18.9%), which contributed substantially to the overall decrease in on-farm inflation. The largest increase in price was for Electricity, followed by Weed and Pest Control (see Figure 3).

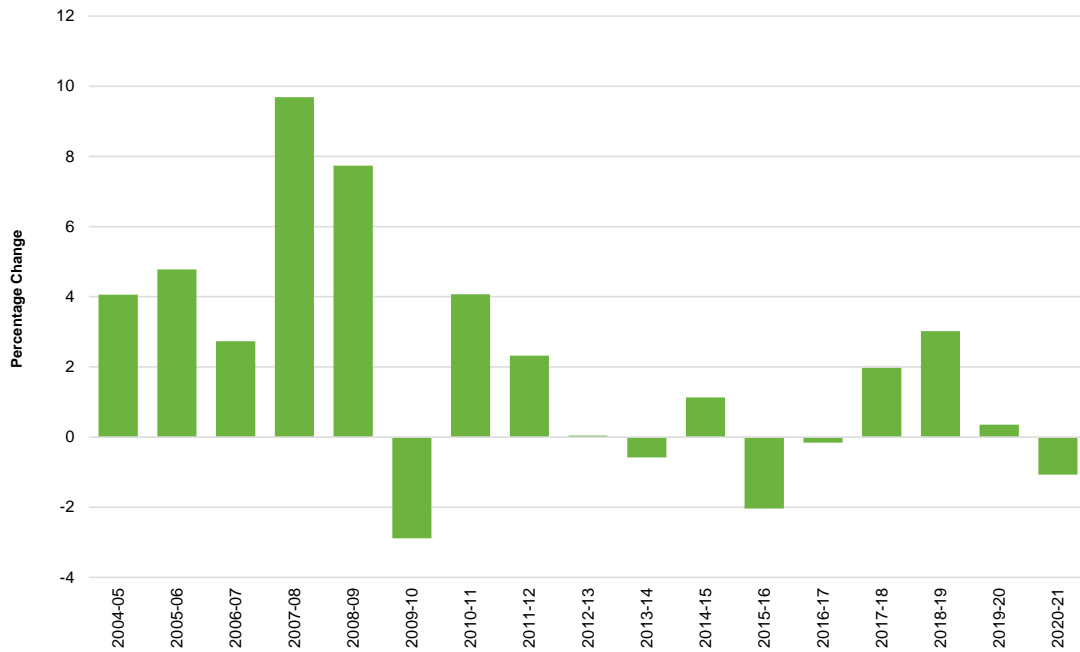
On-farm inflation +4.1% in 5 years +5.0% in 10 years

Prices for sheep and beef farm inputs were up 4.1 per cent over the last five years, and up 5.0 per cent over the last 10 years. See Table 2.

On-farm inflation lower than consumer price inflation in 2021

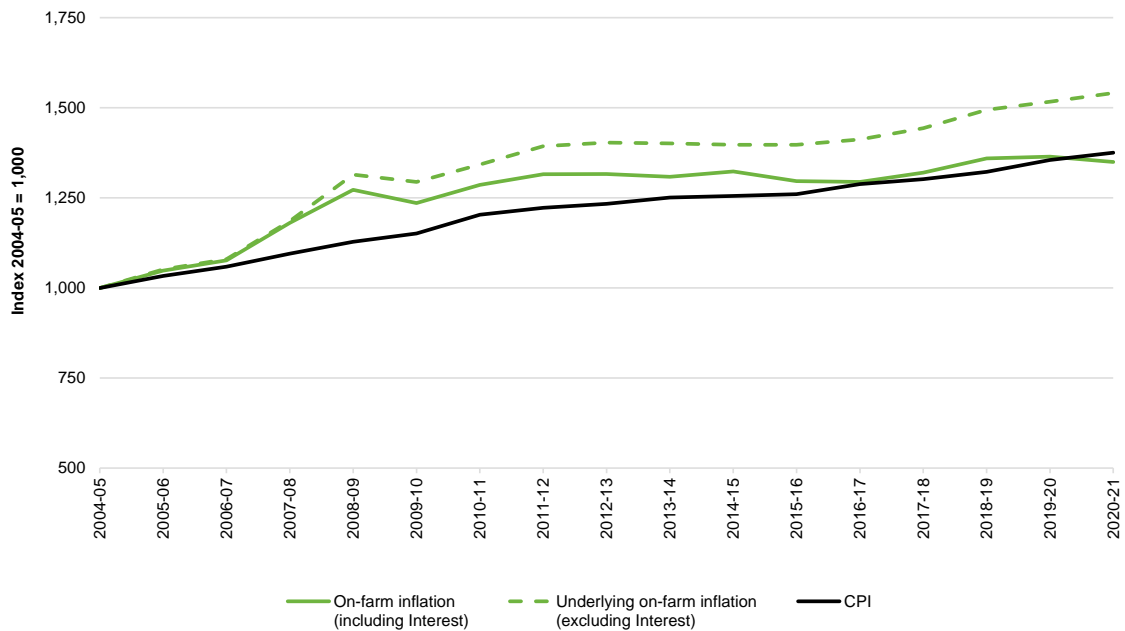
In comparison, on-farm inflation was lower than consumer price inflation in 2021. Consumer prices increased 1.5 per cent between March 2020 and March 2021. Over the last five years, consumer price inflation was 9.1 per cent, and over the last 10 years it was 14.3 per cent (see Figure 2).

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

Interest -18.9%

Between March 2020 and March 2021, the overall price for Interest decreased by 18.9 per cent following a 7.2 per cent decrease reported for the previous 12-month period. This was due to interest rates continuing to fall.

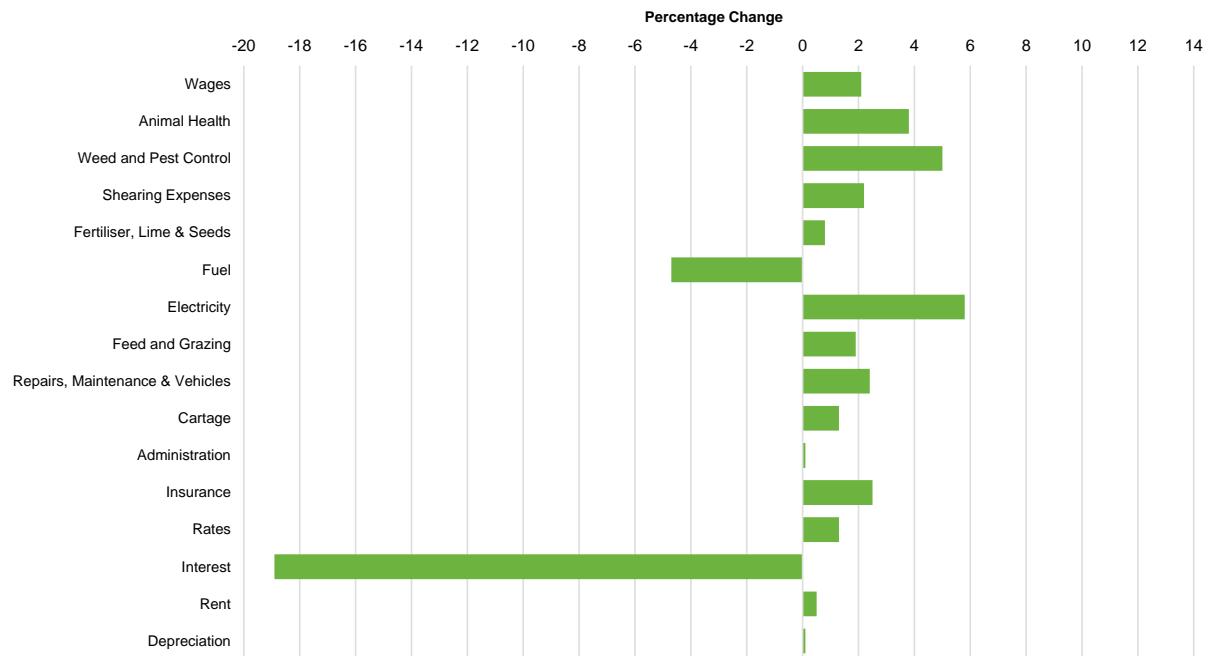
Electricity +5.8%

The price of Electricity increased by 5.8 per cent in the year to March 2021, following a slight decrease (-0.1%) in the previous year.

Weed and Pest Control +5.0%

Between March 2020 and March 2021, the overall price for Weed and Pest Control increased 5.0 per cent compared to a 0.6 per cent increase for the previous 12-month period.

Figure 3: Sheep and Beef Farm Input Prices Changes – March 2020 to March 2021



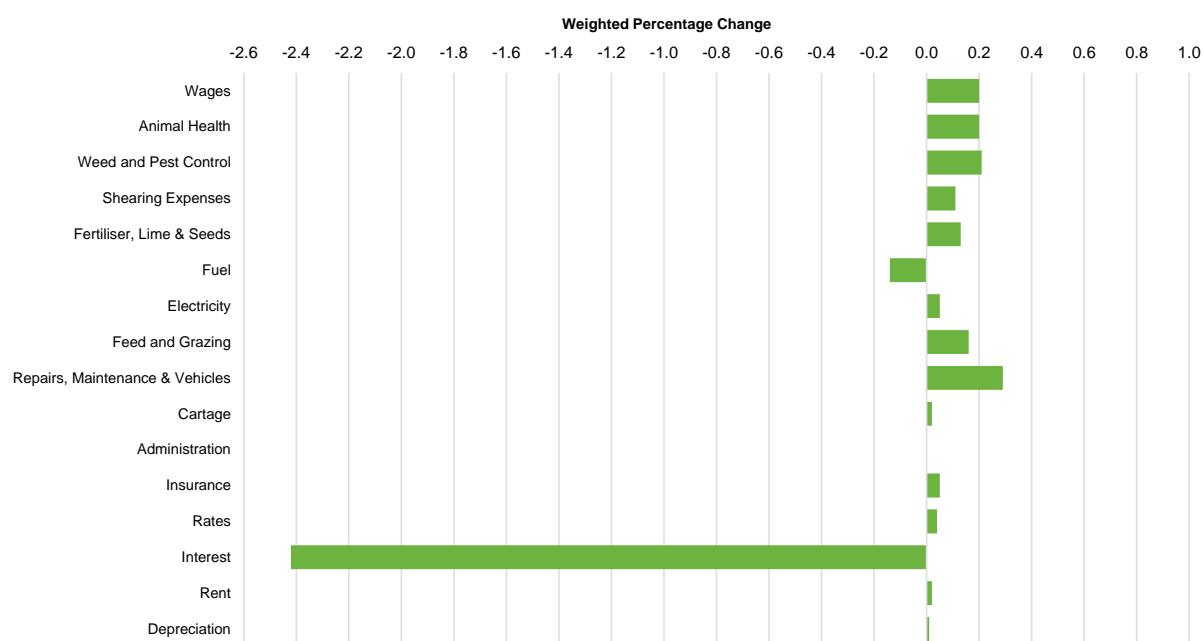
Source: Beef + Lamb New Zealand Economic Service | Statistics New Zealand

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 the price was down 2.0 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 Electricity showed the greatest annual change, however its weighting on overall on-farm inflation is low because Electricity expenditure is around 0.9 per cent of farm expenditure. This contrasts with a 2.4 per cent increase in Repairs, Maintenance and Vehicles, which account for approximately 12 per cent of farm expenditure, and therefore this category has a greater impact on overall on-farm inflation. 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 2020 to March 2021



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 2020 to March 2021			
Categories of Expenditure	Percentage Change	Percentage Weight ¹	Weighted Percentage Change ²
	Col. 1	Col. 2	Col. 3
Wages	+2.1	9.4	+0.20
Animal Health	+3.8	5.3	+0.20
Weed and Pest Control	+5.0	4.2	+0.21
Shearing Expenses	+2.2	5.2	+0.11
Fertiliser, Lime & Seeds	+0.8	16.8	+0.13
Fuel	-4.7	2.9	-0.14
Electricity	+5.8	0.9	+0.05
Feed and Grazing	+1.9	8.5	+0.16
Repairs, Maintenance & Vehicles	+2.4	12.1	+0.29
Cartage	+1.3	1.7	+0.02
Administration	+0.1	3.3	+0.00
Insurance	+2.5	2.1	+0.05
Rates	+1.3	3.1	+0.04
Interest	-18.9	12.8	-2.42
Rent	+0.5	3.5	+0.02
Depreciation	+0.1	8.2	+0.01
TOTAL		100.0	-1.07

Notes:

1. Average three-year pattern of expenditure for Sheep and Beef Farms (2017-18 to 2019-20p)
2. Col.(3) equals Col.(1) multiplied by Col.(2) divided by 100.
The result is rounded to two decimal places, e.g.
Wages $2.1 \times 9.4 / 100 = 19.74 / 100 = 0.2$

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

3. Underlying on-farm inflation

Underlying on-farm inflation +1.6%

When excluding interest from the calculation of the change in sheep and beef farm input prices, underlying on-farm inflation was 1.6 per cent in the year to March 2021, similar to the previous year, when it was 1.5 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 14.7 per cent, similar to consumer price inflation over the same period at 14.3 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
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
10 years to 2020-21	+5.0		+14.7	
5 years to 2020-21	+4.1		+10.3	
3 years to 2020-21	+2.3		+6.7	
2 years to 2020-21	-0.7		+3.1	

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.

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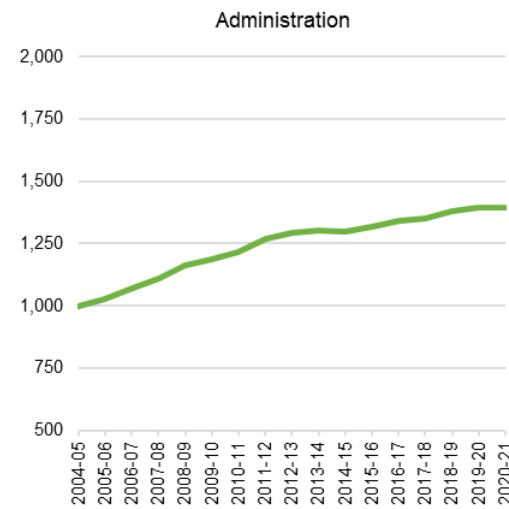
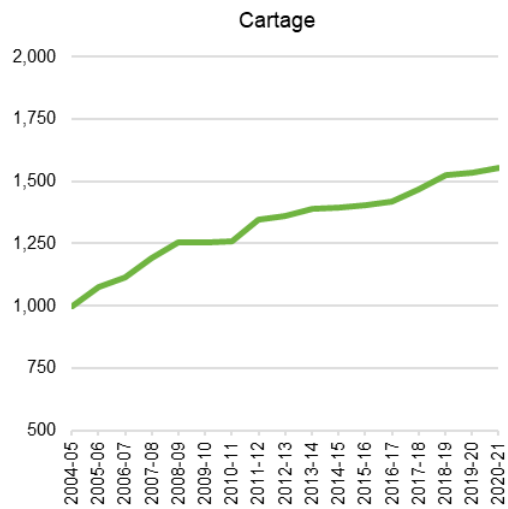
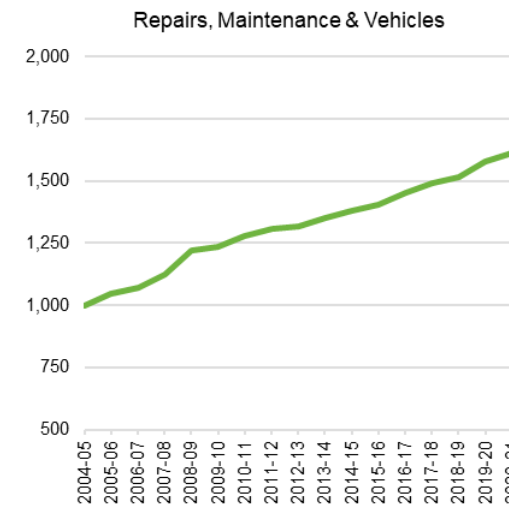
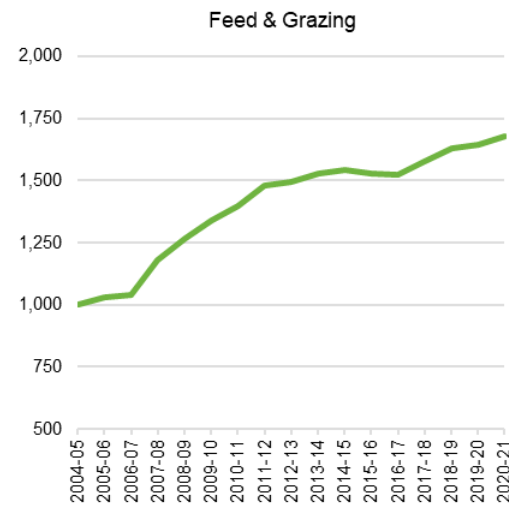
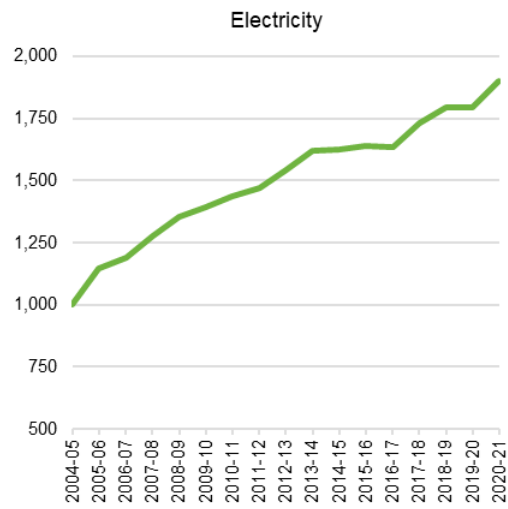
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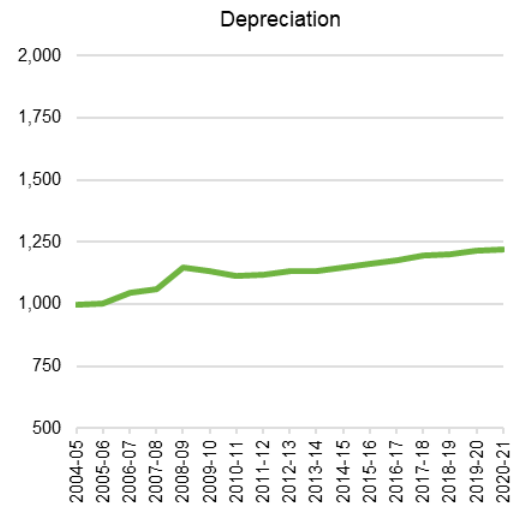
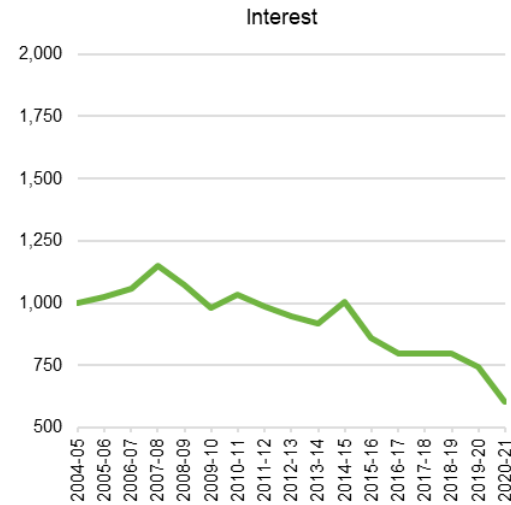
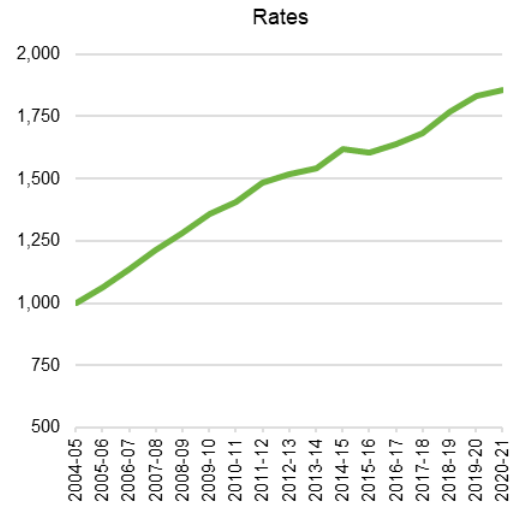
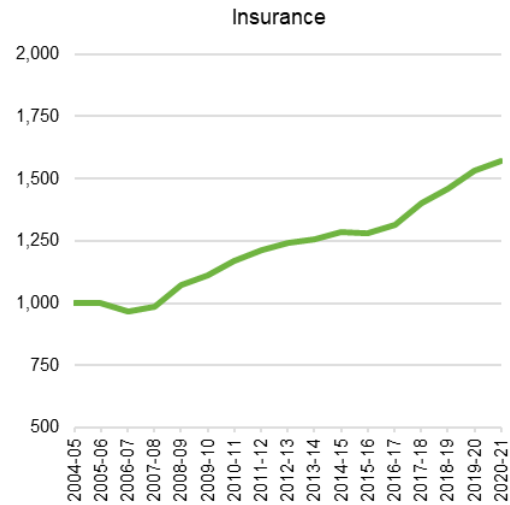
5. Appendices

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 March Quarter Prices

FARM EXPENDITURE	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Wages	+1.2	+2.5	+1.6	+1.8	+2.0	+1.2	+1.3	+1.8	+1.7	+1.3	+2.1
Animal Health	+4.8	+4.3	+3.0	+2.4	+2.0	+0.3	+1.9	+2.6	+2.0	+3.7	+3.8
Weed & Pest Control	+1.7	+0.1	-1.1	-0.1	-0.6	-0.9	-1.1	+4.6	-0.2	+0.6	+5.0
Shearing Expenses	+2.1	+3.2	+1.7	+1.1	+1.8	+0.3	+1.3	+2.3	+11.2	+1.4	+2.2
Fertiliser, Lime & Seeds	+7.5	+7.0	-1.1	-6.1	-2.3	+0.6	-3.8	-0.6	+6.2	-0.3	+0.8
Fuel	+14.1	+5.4	-2.0	-2.0	-21.7	-12.7	+18.8	+12.1	+4.0	-0.4	-4.7
Electricity	+3.0	+2.6	+5.0	+4.9	+0.2	+1.1	-0.3	+5.8	+3.7	-0.1	+5.8
Feed & Grazing	+4.6	+5.9	+1.0	+2.1	+1.1	-1.1	-0.3	+3.6	+3.3	+1.0	+1.9
Repairs, Maintenance & Vehicles	+3.5	+2.4	+0.5	+2.6	+2.2	+1.7	+3.5	+2.7	+1.4	+4.2	+2.4
Cartage	+0.5	+6.6	+1.3	+2.1	+0.3	+0.7	+0.9	+3.4	+4.0	+0.6	+1.3
Administration	+2.5	+4.4	+2.1	+0.5	-0.2	+1.4	+2.0	+0.6	+2.3	+0.9	+0.1
Insurance	+5.6	+3.4	+2.4	+1.2	+2.4	-0.4	+2.7	+6.7	+4.1	+5.0	+2.5
Rates	+3.5	+5.6	+2.2	+1.6	+4.9	-0.7	+2.0	+2.7	+5.1	+3.7	+1.3
Interest	+5.4	-4.6	-3.9	-3.0	+9.4	-14.5	-7.5	+0.5	+0.1	-7.2	-18.9
Rent	+0.5	-2.7	+1.3	+1.2	+0.2	+0.0	+1.5	+0.3	+4.0	+0.4	+0.5
Depreciation	-1.7	+0.3	+1.4	+0.1	+1.4	+1.3	+1.2	+1.4	+0.4	+1.4	+0.1
On-Farm Inflation (including Interest)	+4.1	+2.3	+0.0	-0.6	+1.1	-2.1	-0.2	+2.0	+3.0	+0.4	-1.1
Underlying On-Farm Inflation (excluding Interest)	+3.8	+3.8	+0.7	-0.2	-0.3	+0.0	+1.1	+2.2	+3.5	+1.5	+1.6
Consumer Price Index (CPI)	+4.5	+1.6	+0.9	+1.5	+0.3	+0.4	+2.2	+1.1	+1.5	+2.5	+1.5

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

Appendix 4

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

FARM EXPENDITURE	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Wages	8.5	8.5	8.9	9.0	9.0	8.9	8.8	9.0	9.2	9.3	9.4
Animal Health	4.8	4.7	4.9	5.1	5.1	5.2	5.1	5.1	5.1	5.3	5.3
Weed & Pest Control	3.2	3.4	3.5	3.5	3.7	3.6	3.8	3.9	3.9	4.2	4.2
Shearing Expenses	5.6	5.4	5.4	5.4	5.4	5.3	5.2	5.0	5.0	5.0	5.2
Fertiliser, Lime & Seeds	15.7	16.5	17.5	17.6	17.4	17.2	17.2	17.0	16.8	16.9	16.8
Fuel	3.6	3.6	3.6	3.8	3.8	3.5	3.1	2.8	2.6	2.8	2.9
Electricity	0.9	0.9	0.9	0.9	0.9	1.0	0.9	0.9	0.9	0.9	0.9
Feed & Grazing	7.2	7.3	7.6	7.8	8.0	8.0	8.2	8.0	8.5	8.0	8.5
Repairs, Maintenance & Vehicles	10.3	10.9	11.6	11.7	11.9	11.8	11.9	12.0	12.0	11.8	12.1
Cartage	1.9	1.9	1.8	1.8	1.8	1.7	1.7	1.6	1.7	1.7	1.7
Administration	3.5	3.5	3.6	3.6	3.6	3.6	3.7	3.7	3.6	3.4	3.3
Sub-Total Working Expenses	65.2	66.6	69.3	70.2	70.6	69.8	69.6	69.0	69.3	69.3	70.3
Insurance	1.6	1.7	1.8	1.9	1.9	2.0	2.0	2.0	2.1	2.1	2.1
Rates	3.1	3.1	3.1	3.0	3.0	3.1	3.1	3.2	3.3	3.1	3.1
Interest	18.3	16.9	15.1	14.5	14.2	14.3	14.2	14.2	13.7	13.6	12.8
Rent	3.1	3.1	2.9	2.9	3.0	3.3	3.5	3.6	3.4	3.5	3.5
Sub-Total Standing Charges	26.1	24.8	22.9	22.3	22.1	22.7	22.8	23.0	22.5	22.3	21.5
TOTAL CASH EXPENDITURE	91.3	91.4	92.2	92.5	92.7	92.5	92.4	92.0	91.8	91.6	91.8
Depreciation	8.7	8.6	7.8	7.5	7.3	7.5	7.6	8.0	8.2	8.4	8.2
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

