

## 2009 PASTORAL MONITORING

# SOUTHLAND/SOUTH OTAGO HILL COUNTRY SHEEP AND BEEF



THIS REPORT CONTAINS THE KEY RESULTS FROM THE MINISTRY OF AGRICULTURE AND FORESTRY'S 2009 PASTORAL MONITORING PROGRAMME.

### KEY POINTS

- Net cash income of \$488 800 in 2008/09 was a 25 percent improvement compared with \$392 100 in 2007/08. A record lamb price of \$82.85 per head and a buoyant store lamb market outweighed a drop in the lambing percentage and a continued low wool price.
- Better climatic conditions combined with improved market prices led to more confidence in sheep meat production in 2008/09. Farmers retained hoggets and breeding ewes to rebuild stock levels.
- Farmers cautiously increased farm working expenses in 2008/09, up 6 percent to \$261 000 in response to increased income. Farm working expenses are budgeted to decrease 2 percent in 2009/10 to \$256 800 driven by a 9 percent decrease in fertiliser expenditure to \$58 100 as the price and volume applied is expected to decrease.
- Taxation planning will be important in 2009/10 as potential tax liabilities are high and income is down.
- Farmers and industry are uncertain about the exchange rate effect on the 2009/10 lamb price and subsequent profitability.

»»» TABLE 1: KEY PARAMETERS, FINANCIAL RESULTS AND BUDGET FOR THE SOUTHLAND/SOUTH OTAGO HILL COUNTRY SHEEP AND BEEF MODEL FARM

YEAR ENDED 30 JUNE	2005/06	2006/07	2007/08 <sup>R</sup>	2008/09	2009/10 BUDGET
Effective area (ha)	723	723	723	723	723
Breeding ewes (head)	4 313	4 310	4 220	3 956	3 977
Replacement ewe hoggets (head)	1 194	1 194	1 096	887	997
Other sheep (head)	75	75	86	86	76
Breeding cows (head)	90	90	107	106	106
Rising 1-year cattle (head)	75	75	80	87	79
Other cattle (head)	3	3	3	4	13
Opening sheep stock units (ssu)	5 206	5 203	5 052	4 642	4 733
Opening cattle stock units	829	817	930	961	974
Opening total stock units (su)	6 035	6 020	5 982	5 603	5 707
Stocking rate (stock unit/ha)	8.3	8.3	8.3	7.7	7.9
Ewe lambing (%)	129	130	131	126	130
Average lamb price (\$/head)	51.28	49.83	48.82	82.85	71.49
Average wool price (\$/kg)	2.51	2.46	2.36	2.32	2.18
Total wool produced (kg)	28 662	26 162	26 111	24 262	24 284
Wool production (kg/ssu)	5.51	5.03	5.17	5.23	5.13
Average rising 2-year steer (\$/head)	750	813	731	856	816
Average cull cow (\$/head)	620	539	526	598	532
Net cash income (\$)	400 241	383 390	392 091	488 752	463 611
Farm working expenses (\$)	239 309	220 958	246 975	260 971	256 821
Farm profit before tax (\$)	98 989	80 101	34 482	160 730	143 266
Farm surplus for reinvestment (\$) <sup>1</sup>	5 707	26 228	-12 042	90 533	31 291

#### Note

<sup>1</sup> Farm surplus for reinvestment represents the cash available from the farming business, after meeting living costs, which is available for investment on-farm or for principal repayments. It is calculated as discretionary cash less off-farm income and drawings.

#### Symbol

<sup>R</sup> The model parameters have been revised so the data for 2007/08 will not match that published in the *Pastoral Monitoring Report 2008*.



»» TABLE 2: SOUTHLAND/SOUTH OTAGO HILL COUNTRY SHEEP AND BEEF MODEL BUDGET

	2008/09			2009/10 BUDGET			CHANGE BETWEEN 2008/09 AND 2009/10 (%)
	WHOLE FARM (\$)	PER HECTARE (\$)	PER STOCK UNIT¹ (\$)	WHOLE FARM (\$)	PER HECTARE (\$)	PER STOCK UNIT¹ (\$)	
REVENUE							
Sheep	375 916	520	80.98	348 644	482	73.66	-7
Wool	56 289	78	12.13	52 981	73	11.19	-6
Cattle	61 087	84	63.60	69 382	96	71.23	14
Grazing income (including hay and silage sales)	6 100	8	1.09	6 100	8	1.07	0
Other farm income	0	0	0.00	0	0	0.00	...
LESS:							
Sheep purchases	5 256	7	1.13	5 830	8	1.23	11
Cattle purchases	5 384	7	5.61	7 666	11	7.87	42
Net cash income	488 752	676	87.24	463 611	641	81.23	-5
Farm working expenses	260 971	361	46.58	256 821	355	45.00	-2
Cash operating surplus	227 781	315	40.66	206 790	286	36.23	-9
Interest	52 494	73	9.37	49 158	68	8.61	-6
Rent and/or leases	0	0	0.00	0	0	0.00	...
Stock value adjustment	11 213	16	2.00	11 674	16	2.05	4
Minus depreciation	25 770	36	4.60	26 040	36	4.56	1
Farm profit before tax	160 730	222	28.69	143 266	198	25.10	-11
Taxation	8 054	11	1.44	47 641	66	8.35	492
Farm profit after tax	152 676	211	27.25	95 625	132	16.76	-37
ALLOCATION OF FUNDS							
Add back depreciation	25 770	36	4.60	26 040	36	4.56	1
Reverse stock value adjustment	-11 213	-16	-2.00	-11 674	-16	-2.05	4
Income equalisation	0	0	0.00	0	0	0.00	...
Off-farm income	8 973	12	1.60	9 770	14	1.71	9
Discretionary cash	176 206	244	31.45	119 761	166	20.98	-32
APPLIED TO:							
Net capital purchases	36 700	51	6.55	30 000	41	5.26	-18
Development	3 900	5	0.70	3 300	5	0.58	-15
Principal repayments	0	0	0.00	0	0	0.00	...
Drawings	76 700	106	13.69	78 700	109	13.79	3
New borrowings	0	0	0.00	0	0	0.00	...
Introduced funds	0	0	0.00	0	0	0.00	...
Cash surplus/deficit	58 906	81	10.51	7 761	11	1.36	-87
Farm surplus for reinvestment²	90 533	125	16.16	31 291	43	5.48	-65
ASSETS AND LIABILITIES							
Farm, forest and building (opening)	5 165 370	7 144	921.96	4 240 000	5 864	742.92	-18
Plant and machinery (opening)	136 800	189	24.42	138 600	192	24.29	1
Stock valuation (opening)	633 250	876	113.03	644 463	891	112.92	2
Other produce on hand (opening)	0	0	0.00	0	0	0.00	...
Total farm assets (opening)	5 935 420	8 209	1 059.40	5 023 063	6 948	880.13	-15
Total assets (opening)	6 022 220	8 329	1 074.90	5 114 263	7 074	896.11	-15
Total liabilities (opening)	676 500	936	120.75	648 500	897	113.63	-4
Total equity (farm assets – liabilities)	5 258 920	7 274	938.66	4 374 563	6 051	766.50	-17

**Notes**

1 Sheep stock units are used in the per stock calculation for sheep and wool income and sheep purchases. Cattle stock units are used for cattle income and purchases. The remainder of the time total stock units are used.

2 Farm surplus for reinvestment represents the cash available from the farming business, after meeting living costs, which is available for investment on-farm or for principal repayments. It is calculated as discretionary cash less off-farm income and drawings.

**Symbol**

... Not applicable.

»»» TABLE 3: SOUTHLAND/SOUTH OTAGO HILL COUNTRY SHEEP AND BEEF MODEL EXPENDITURE

	2008/09			2009/10 BUDGET			CHANGE BETWEEN 2008/09 AND 2009/10 (%)
	WHOLE FARM (\$)	PER HECTARE (\$)	PER STOCK UNIT¹ (\$)	WHOLE FARM (\$)	PER HECTARE (\$)	PER STOCK UNIT¹ (\$)	
FARM WORKING EXPENSES							
Permanent wages	22 158	31	3.95	22 260	31	3.90	0
Casual wages	0	0	0.00	0	0	0.00	...
ACC	381	1	0.07	587	1	0.10	54
<b>Total labour expenses</b>	<b>22 539</b>	<b>31</b>	<b>4.02</b>	<b>22 847</b>	<b>32</b>	<b>4.00</b>	<b>1</b>
Animal health	16 951	23	3.03	17 651	24	3.09	4
Breeding	0	0	0.00	0	0	0.00	...
Electricity	3 172	4	0.57	3 872	5	0.68	22
Feed (hay and silage)	10 807	15	1.93	10 500	15	1.84	-3
Feed (feed crops)	7 282	10	1.30	8 400	12	1.47	15
Feed (grazing)	0	0	0.00	0	0	0.00	...
Feed (other)	0	0	0.00	0	0	0.00	...
Fertiliser	63 800	88	11.39	58 100	80	10.18	-9
Lime	10 900	15	1.95	9 700	13	1.70	-11
Cash crop expenses	0	0	0.00	0	0	0.00	...
Freight (not elsewhere deducted)	6 182	9	1.10	5 600	8	0.98	-9
Regrassing costs	5 600	8	1.00	5 500	8	0.96	-2
Shearing expenses	24 766	34	5.34	25 966	36	5.49	5
Weed and pest control	8 177	11	1.46	8 100	11	1.42	-1
Fuel	16 100	22	2.87	14 000	19	2.45	-13
Vehicle costs (excluding fuel)	11 500	16	2.05	11 000	15	1.93	-4
Repairs and maintenance	24 700	34	4.41	22 200	31	3.89	-10
<b>Total other working expenses</b>	<b>209 937</b>	<b>290</b>	<b>37.47</b>	<b>200 589</b>	<b>277</b>	<b>35.15</b>	<b>-4</b>
Communication costs (phone and mail)	2 554	4	0.46	2 606	4	0.46	2
Accountancy	3 376	5	0.60	3 444	5	0.60	2
Legal and consultancy	1 931	3	0.34	1 970	3	0.35	2
Other administration	2 039	3	0.36	2 081	3	0.36	2
Water charges (irrigation)	0	0	0.00	0	0	0.00	...
Rates	9 922	14	1.77	10 320	14	1.81	4
Insurance	5 500	8	0.98	5 700	8	1.00	4
Other expenditure²	3 172	4	0.57	7 265	10	1.27	129
<b>Total overhead expenses</b>	<b>28 494</b>	<b>39</b>	<b>5.09</b>	<b>33 385</b>	<b>46</b>	<b>5.85</b>	<b>17</b>
<b>Total farm working expenses</b>	<b>260 971</b>	<b>361</b>	<b>46.58</b>	<b>256 821</b>	<b>355</b>	<b>45.00</b>	<b>-2</b>
Wages of management	75 000	104	13.39	75 000	104	13.14	0
Depreciation	25 770	36	4.60	26 040	36	4.56	1
<b>Total farm operating expenses</b>	<b>361 741</b>	<b>500</b>	<b>64.57</b>	<b>357 861</b>	<b>495</b>	<b>62.70</b>	<b>-1</b>
CALCULATED RATIOS							
Economic farm surplus (EFS³)	138 224	191	24.67	117 424	162	20.57	
Farm working expenses/NCI⁴	53%			55%			
EFS/total farm assets	2.3%			2.3%			
EFS less interest and lease/equity	1.6%			1.6%			
Interest+rent+lease/NCI	10.7%			10.6%			
EFS/NCI	28.3%			25.3%			

**Notes**

1 Shearing expenses per stock unit based on sheep stock units.

2 Includes Accident Compensation Corporation (ACC) employer levy.

3 EFS (or earnings before interest and tax) is calculated as follows: net cash income plus change in livestock values less farm working expenses less depreciation less wages of management (WOM). WOM is calculated as follows: \$31 000 allowance for labour input plus 1 percent of opening total farm assets to a maximum of \$75 000.

4 Net cash income.

**Symbol**

... Not applicable.

## FINANCIAL PERFORMANCE OF THE SOUTHLAND/SOUTH OTAGO HILL COUNTRY SHEEP AND BEEF MODEL FARM IN 2008/09

The 2008/09 cash operating surplus for the Southland/South Otago hill country sheep and beef model farm increased 57 percent to \$227 800 in 2008/09 compared with \$145 100 in 2007/08. This was mainly due to a 70 percent increase in the average lamb price.

### REVENUE UP 25 PERCENT DUE TO LAMB PRICE

Net cash income in 2008/09 was \$488 800, or \$87.24 per stock unit (see Table 2). This was a 25 percent increase compared with \$392 100 in 2007/08.

The key factors affecting net cash income were:

- › a high lamb price;
- › a buoyant store lamb market;
- › a drop in the lambing percentage;
- › continued low wool price; and
- › a decision to retain 100 more stock units as breeding ewes and replacement hoggets.

### EXCEPTIONAL LAMB PRICES WELCOMED

Farmers were relieved and delighted that lamb prices significantly increased in the 2008/09 season. Prime lambs averaged \$85.70 and store lambs \$69.64 per head, giving an average price for the year of \$82.85. This was the highest nominal average lamb price ever recorded for this model.

Several factors were different in the 2008/09 lamb selling season compared with 2007/08. Lambing percentage was down 6 percentage points due to lower pregnancy scanning results, and several storms later in the lambing season decreased lamb survival rates. This resulted in fewer lambs to sell. The lamb schedule, which traditionally declines during the peak kill months, remained stable and increased in some instances. The schedule did not discourage producing heavier carcass weights over 18 kilograms. Surplus feed was also more plentiful in 2008/09 for finishers. All these factors improved the demand for store lambs, the ability of farmers to finish their own lambs to higher weights and thus the overall price for lambs.

The option of selling grass, mainly to dairy operations, also looked less profitable and more risky as the lower dairy payout of \$5.20 per kilogram of milk solids was announced in late summer.

### LAMBING DOWN 6 PERCENTAGE POINTS

The effects of the dry 2007/08 summer showed through in the 2008/09 lambing percentage. Storms during lambing also exacerbated losses. However, the increased lamb price and carcass weight made up for the decline in the number of lambs for sale.

### CLIMATE CONDITIONS BETTER BUT STILL TRICKY

The 2008/09 spring was cool and it was not until February 2009 that pasture growth returned to average. Despite a reasonably dry summer the pasture growth in autumn 2009 was well above long term averages and this allowed above average grass covers to accumulate, hay barns and silage pits to be filled and body condition put on ewes at the critical flushing and tupping periods.

### SHEEP NUMBERS ON THE RISE

Better climatic conditions combined with improved market prices lead to more confidence in sheep meat production. This meant that farmers retained hoggets and breeding ewes to rebuild numbers. However, opening sheep stock



units, in 2009/10 and 2010/11, will still be 500 stock units (10 percent) below 2006/07 levels. The stocking rate on the model farm is 7.7 stock units per hectare. This is based on a standard stock unit. If the stock units are adjusted for the higher than standard performance, the stocking rate for 2008/09 would be 9.1 stock units per hectare.

#### WOOL PRICE SLOWLY DECLINES

The wool price continued its slow decline and decreased 2 percent to \$2.32 per kilogram greasy. Wool made up 12 percent of net cash income in 2008/09. Wool production in total decreased 7 percent to 24 300 kilograms. This was due to fewer sheep shorn, especially lambs. However, on a wool per stock unit basis, wool production increased slightly to 5.23 kilograms per sheep stock unit.

#### CATTLE REVENUE UP

Cattle sales prices per head and total revenue were higher in 2008/09 than 2007/08. The price for weaner cattle, cull cows and prime animals all increased. Cattle revenue (sales less purchases) increased by 6 percent to \$55 700. Cattle stock units increased slightly by 1 percent during the 2008/09 season mainly due to an increase of weaner calves retained to finish.

Selling grass, casual grazing of dairy cows or dairy heifers, remains a small feature in this model.

#### EXPENDITURE INCREASES 6 PERCENT

Farm working expenditure increased by 6 percent to \$261 000 in 2008/09 due to unavoidable increases in some expenditure categories. This increase in expenditure reflected a cautious approach from hill country farmers to improve their incomes.

During 2008/09 prices for feed, fertiliser and fuel increased then declined considerably. Added to this was the global economic recession, market uncertainty and fluctuating exchange rates. Based on this scenario farmers kept spending patterns similar to 2007/08. Overall farm working expenditure was \$46.58 per stock unit and accounted for 53 percent of net cash income.

Expenditure items that increased more than 10 percent included electricity, fertiliser, feed crops, weed and pest control, fuel, vehicle expenditure and repairs and maintenance. Many increases were unavoidable due to higher input costs. Repairs and maintenance and weed and pest expenditure increases were due to better lamb returns allowing a catch up on deferred spending on these items.

#### FERTILISER EXPENDITURE UP 26 PERCENT

Fertiliser prices rose and then fell within the year. Most farmers could not avoid spending more on fertiliser for establishing winter feed crops and maintaining hay and silage areas. Less tonnage was applied to pasture but industry

»» TABLE 4: SOUTHLAND/SOUTH OTAGO HILL COUNTRY SHEEP AND BEEF MODEL CASH FARM INCOME

YEAR ENDED 30 JUNE	2005/06 (\$)	2006/07 (\$)	2007/08 <sup>R</sup> (\$)	2008/09 (\$)	2009/10 BUDGET (\$)
Sheep sales less purchases	268 847	261 922	271 690	370 660	342 814
Cattle sales less purchases	49 746	52 609	52 692	55 703	61 716
Wool	71 942	64 359	61 621	56 289	52 981
Grazing income (including hay and silage sales)	4 475	0	6 088	6 100	6 100
Other income	5 231	4 500	0	0	0
Net cash income	400 241	383 390	392 091	488 752	463 611

Symbol

<sup>R</sup> The model parameters have been revised so the data for 2007/08 will not match that published in the *Pastoral Monitoring Report 2008*.

commentators suggest near maintenance rates were being applied and pasture production was not compromised. Little capital fertiliser was applied.

Lime expenditure decreased 33 percent to \$10 900 in 2008/09 compared with \$16 300 in 2007/08. However this reflected the higher than average levels applied in 2007/08 rather than a swing away from lime applications.

Regrassing costs also decreased due to slightly less area of grass replanted and an easing in price of the fuel component of contracting costs.

#### WELCOME DECREASE IN INTEREST RATES

Most farmers have a mix of fixed and/or floating interest rates and dates when loans fall due for review. The average fall in term loan interest rates depends on when and what proportion of debt is up for review. Overall, the interest expense in the model declined \$10 800 in 2008/09. Less current account interest was paid as current account balances were healthier and current account interest rates were lower. Farmers could have taken the opportunity to pay off term debt, but opted to improve their current account balance.

Overall, debt servicing in 2008/09 was low at \$9.37 per stock unit and 11 percent of net cash income.

#### NET RESULT UP

Farm profit before tax increased almost five and a half times to \$160 700 in 2008/09. This was the highest farm profit before tax this decade and followed the lowest farm profit before tax this decade recorded in 2007/08. This large swing in profit before tax will cause tax planning issues for 2008/09 and 2009/10. After tax, drawings, development, capital purchases and taking into account off-farm income, the model recorded a \$58 900 cash surplus.

## BUDGET FINANCIAL PERFORMANCE OF THE SOUTHLAND/SOUTH OTAGO HILL COUNTRY SHEEP AND BEEF MODEL FARM IN 2009/10

The model's cash operating surplus in 2009/10 is predicted to decrease 9 percent to \$206 800 (\$36.23 per stock unit). The decrease is due to a lower forecast average lamb price. The decrease in net cash income is slightly offset by a 2 percent decrease in farm working expenditure.

#### LAMBING PERCENTAGE TO IMPROVE

The lambing percentage is expected to increase 4 percentage points to 130 percent due to very good scanning results and the presumption of average spring weather conditions.

#### EXCHANGE RATE UNCERTAINTY

The biggest uncertainty for farmers is the effect of the exchange rate on the price of lambs. They believe that the on-farm and in-market conditions are favourable, but the exchange rate effect on lamb price could take the profit out of the 2009/10 year. Expectations for the 2009/10 exchange rate for the New Zealand dollar were based on US\$0.63 cents and Euro€ 0.47 cents. Both store and prime lamb prices are expected to decrease in 2009/10. The average lamb price is expected to drop \$11.36 per lamb or 16 percent to \$71.50 per head. The prime lamb price is expected to decline to \$74.50 per head and the store lamb price to \$60.00 per head. The model plans on selling 28 percent of the lambs as stores in 2009/10. Within the model the proportion of lambs sold as stores depends on feed supply, relativities between store and prime prices and the profitability of alternative uses of feed such as selling to the dairy industry.

#### WOOL PRICE TO DECLINE AGAIN

Wool revenue is expected to decline an additional 6 percent to \$53 000 or \$11.19 per sheep stock unit in 2009/10. The average wool price is predicted to be \$2.18 per kilogram and the total number of kilograms shorn per farm is expected to be similar to the 2008/09 season.



### SLIGHTLY MORE CATTLE FOR SALE

Net cattle income (sales less purchases) is expected to increase 11 percent to \$61 700 in 2009/10 due to slightly more cattle for sale in most classes, but mostly from an increase in the number of rising 2 year bulls coming through for finishing. All prices per head for cattle are expected to be down 5 to 11 percent, and uncertainty over exchange rate is the major cause for the price expectation decreasing.

Grazing income and feed sales are not budgeted to change significantly as the low dairy payout means dairy farmers are looking to decrease feed costs and become more self-sufficient in feed rather than expand their operations by buying in feed or grazing.

### TWO GOOD FINANCIAL YEARS NEEDED BEFORE EXPENDITURE INCREASES

Farm working expenditure is expected to decrease by \$4 100 or 2 percent to \$256 800, or \$45.00 per stock unit in 2009/10. In many cases farmers plan to wait until the lamb price is clearer before purchasing additional capital items or increasing spending on development or repairs and maintenance.

Major items where increases are expected are ACC due to higher farm profit before tax, electricity, shearing costs and feed crops.

Savings are expected in fertiliser and lime, fuel, freight and repairs and maintenance. The price for fertiliser is lower in 2009/10 than in 2008/09. The demand for fertiliser from countries such as China has reduced and international shipping rates have eased, making fertiliser less expensive. Potassic fertiliser prices are likely to remain high throughout 2009/10. Fertiliser tonnage applied is also expected to decrease while expenditure falls by 9 percent to \$58 100. However, as many farmers face tax planning issues the amount and time of application of fertiliser could be used to smooth out profit before tax. Application rates are below or just on maintenance for this model. Very little nitrogen will be applied and that will be predominantly on winter feed crops.

Fuel expenses during 2009/10 are expected to be lower than 2008/09 when the fuel price spike drove up expenditure farmers intend to defer repairs and maintenance expenditure if the lamb price is not as high as expected.

### INTEREST RATES DECLINE BUT NOT AS MUCH AS EXPECTED

Total interest payments are expected to decline again as average interest rates on the loans in the model decline and current accounts are not as deeply in debt as other years. However, no principal will be repaid. As loans come off higher fixed rates many farmers are enjoying floating interest rates, in some cases three percentage points below what farmers were paying on their fixed term loans. However, as predictions for long-term interest rates are high, farmers are fixing again at higher than floating rates, to avoid paying more interest in the long-term.

### TAX A BIG ISSUE FOR SOME

Farmers are expected to look at their tax planning carefully in 2009/10 as most will not have paid enough provisional tax in 2008/09 to cover the trading profit achieved. Options farmers can look at are using any tax losses accumulated during past years, income equalisation and the amount and timing of tax deductible expenditure.

### NET RESULT DECLINES

The farm profit before tax is estimated to decrease \$17 500 or 11 percent to \$143 300 in 2009/10. The tax payment in 2009/10 is nearly six times the 2008/09 amount and increases by \$39 600 to \$47 600.

After tax, capital purchases, a small amount of development and drawings are deducted and off-farm income of \$9 800 is taken into account, the model is predicted to have a cash surplus of \$7800. This modest cash surplus is predicated on an average lamb price of \$71.49. It would only take a few dollars less per head to see the model farm record a cash deficit.

The return on capital continues to be below 3 percent, while the return on equity is likely to be around 1.6 percent.

The price of farm land in this model is difficult to accurately assess as there have been very few genuine sales to set the



market value. Industry sources estimate this class of land has devalued by 18 to 20 percent.

Farmers still had a healthy 87 percent equity (\$4 375 000) in their properties for 2009/10. Farmers and their banks are looking for ways to improve the cash flow business.

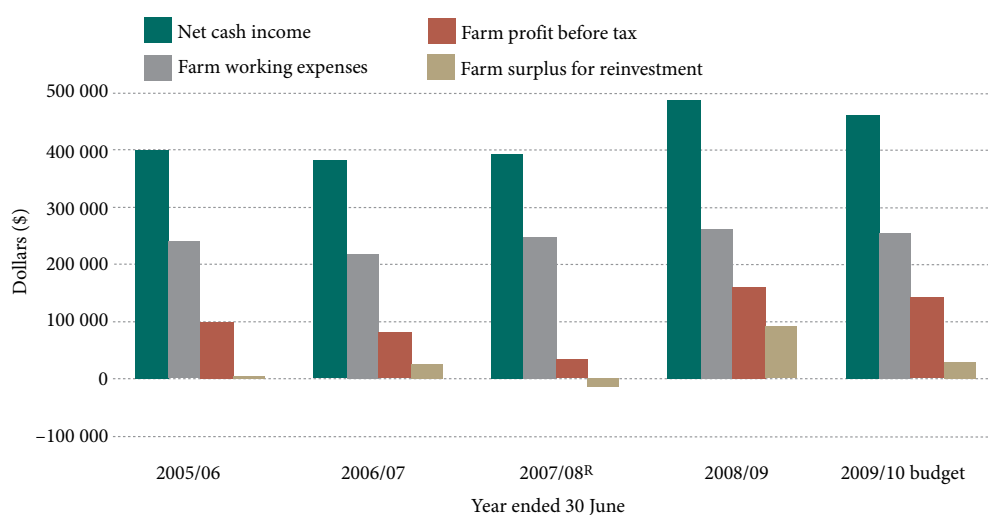
## INFORMATION ABOUT THE MODEL

This model represents 720 farms in the moderately rolling clay downlands to steeper hill country of south Otago and Southland. The farms have mostly cultivated pastures, with the balance in improved, but steeper, hill and tussock blocks.

The typical production system is breeding ewes with some hogget lambing, and the majority of lambs finished but some store lambs can be sold each year. There is a herd of breeding cows with their best calves finished. There may also be some trading of cattle.

For more information on the model contact [Trish.Burborough@maf.govt.nz](mailto:Trish.Burborough@maf.govt.nz)

### FIGURE 1: SOUTHLAND/SOUTH OTAGO HILL COUNTRY SHEEP AND BEEF MODEL PROFITABILITY TRENDS



#### Symbol

<sup>R</sup> The model parameters have been revised so the data for 2007/08 will not match that published in the *Pastoral Monitoring Report 2008*.

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