

AN ECONOMIC SURVEY
OF NEW ZEALAND WHEATGROWERS:

FINANCIAL ANALYSIS

1984-85

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PREFACE

This Report is the eighth in an annual series of economic surveys which concentrate on financial aspects of New Zealand wheatgrowing farms. These surveys have been undertaken by the Agricultural Economics Research Unit at Lincoln College on behalf of the Wheat Growers Sub-Section of Federated Farmers of New Zealand Inc.

The principal objective of this survey is to establish, from farm accounts and personal interviews, financial data pertaining to wheatgrowing farms in the 1984-85 financial year. Such data will allow a more comprehensive picture of wheatgrowing in New Zealand, in line with that available for other major New Zealand farming industries.

The accounts analysis was carried out by Roger Lough, computer programming by Patrick McCartin.

J G Pryde
Director

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The Agricultural Economics Research Unit gratefully acknowledges the co-operation of the wheat growing farmers and their accountants who participated in this survey. The time and information made freely available to field staff is greatly appreciated. The patience and tolerance of Rosemary Searle in typing this report is also acknowledged and appreciated.

SUMMARY

It is difficult for any one single economic indicator to adequately assess farm or interfarm profitability. It is therefore the intention of this report to evaluate those factors which influence the profitability of wheat producing properties in New Zealand's arable sector, namely:

- (a) Capital structure and asset growth;
- (b) Adjusted farm income and expenditure; and
- (c) Cash resources and farm liquidity.

CAPITAL STRUCTURE AND ASSET GROWTH

1. Total farm capital for the average New Zealand survey farm amounted to \$880,190. However the working capital deficit of \$28,170 exceeded produce on hand by \$3,121 resulting in total farm assets including working capital of \$877,069.
2. Total farm liabilities for the average New Zealand survey farm were \$159,359 or 18.0 percent of total farm assets including net working capital.
3. The capital value of land and buildings for the average New Zealand survey farm increased from \$3,761 per hectare to \$3,886 per hectare in the 1984-85 period. The value of plant and machinery increased from \$497 to \$524 per hectare while capital stock also increased marginally resulting in total farm capital increasing by \$168 per hectare. This increase in value of capital assets was offset by a \$55 per hectare increase in farm liabilities, and a decrease in working capital of \$26 per hectare. Farm equity therefore increased by \$87 per hectare.

ADJUSTED FARM INCOME AND EXPENDITURE

4. Gross farm profit for the average New Zealand survey farm was \$142,142. The principal components were livestock (47 percent), wheat (15 percent) and other crops including barley, peas and small seeds (35 percent).
5. Expenditure of \$134,869 for the average New Zealand survey farm was made up of farm working expenses (42 percent), vehicle expenses including depreciation (26 percent) and debt servicing (19 percent).
6. Net farm profit for the average New Zealand survey farm was \$7,273 or 5.1 percent of gross farm profit. The highest net farm profit per hectare of between \$75 and \$85 was achieved on those farms where less than 25.0 percent of gross farm profit came from crop production.

CASH RESOURCES AND FARM LIQUIDITY

7. Total available cash for the average New Zealand survey farm of \$65,743 came from direct farm trading (48 percent), increase in term liabilities (32 percent), sale of assets (11 percent) and non-farm income (9 percent).
8. Total cash disposition for the average New Zealand survey farm of \$65,333 comprised capital expenditure (45 percent), personal expenditure (40 percent) and loan repayments (15 percent).
9. The average cash surplus of \$410 was caused by an increase in sundry debtors of \$353, an improvement in current account at the stock firm and bank of \$3,083, offset by an increase in sundry creditors of \$2,414 and a decrease in deposits with the Income Equalisation Scheme of \$612.
10. The adjusted cash deficit for the average New Zealand survey farm (that is, the cash deficit adjusted for unsold produce and changes in livestock numbers) was a deficit of \$6474. The principal reasons for the difference between the cash surplus and adjusted cash deficit was a decrease in the value of livestock of \$1352, a decrease in wool of \$100 and in crop on hand of \$5,432.
11. Those farms with less than 5.0 per cent of gross profit from crop had a cash deficit of \$4,614 compounded by a \$1,689 decrease in inventory resulting in an adjusted cash deficit of \$6,303. Farms with 5 to 24 percent of gross farm profit from crop had a cash deficit of \$4,960 and an inventory decline of \$1,105 resulting in an adjusted cash deficit of \$6,065. Farms with 25 to 49 percent of gross profit from crop had a cash deficit of \$1,241 but a \$9116 decrease in livestock and crop on hand gave an adjusted cash deficit of \$10,357. Farms with 50 to 74 percent of gross farm profit from crop showed a cash surplus of \$6,142. A decrease in the value of livestock and crop on hand of \$10,537 offset this surplus with the result that the adjusted cash deficit was assessed at \$4,395. Farms with 75 percent or more of gross farm profit from crop showed a cash surplus of \$5,480. A decrease in the value of livestock and crop on hand of \$9,312 offset this surplus with the result that the adjusted cash deficit was assessed at \$3,832.

ECONOMIC INDICATORS

12. The return on total farm capital for the average New Zealand survey farm was 3.8 percent and the return on farm equity was 1.2 percent. Farms with less than 5.0 percent of their gross farm profit from crop had a return on capital of 3.8 percent. Those farms with 50 to 74 percent of gross farm profit from crop showed a 3.3 percent return on capital while for those with above 75 percent of gross farm profit from crop the return on farm capital was 4.5 percent.
13. When adjusted for changes in farm capital the return on farm capital varied from 4.4 percent in group 2 to 10.5 percent for group 5 farms. The return to farm equity adjusted for capital growth varied from 1.9 percent in group 2 to 9.4 percent in group 5 farms indicating that the changes in farm capital did not offset the inefficient use of borrowed capital.

CHAPTER 1

INTRODUCTION

1.1 Background and Survey Description

The purpose of this economic analysis is to provide financial data relating to those New Zealand wheatgrowing farms that participated in the 1984-85 wheat enterprise survey.¹ The analysis was based upon the annual financial statements prepared for wheatgrowers by their accountants.

Farm accounts for the 1984-85 financial year were collected following written requests for information in 1986. Those available for analysis were grouped, as shown in Table 1, according to the degree of cropping intensity. Cropping intensity was determined by expressing crop income as a percentage of gross farm profit. Crop income included income from wheat, barley, small seeds and other crops.

Of the 176 farms in the 1984-85 New Zealand wheat enterprise survey, 48 percent provided financial statements suitable for analysis, 9 percent provided financial statements unsuitable for analysis because of insufficient information while 43 percent either were unable, or refused, for varying reasons to provide financial statements. All farms suitable for analysis were "owner-operator" properties.

Since the 1980-81 financial analysis the various financial measures used, terminology, and procedures have been standardised. Minor changes from previous reports (1977-78 to 1979-80) have therefore resulted. Definitions of terminology and procedures used are detailed in Appendix A. Group 5 farms with 75.0 percent or more of their Gross Farm Profit from crop were introduced for the first time in 1982-83 in order to identify the characteristics of intensive cropping policies.

1.2 Physical Characteristics of Farms

The physical characteristics of the five farming groups are summarised in Table 2. The table shows the emphasis on livestock production in Group 1 and an increasing area devoted to cropping in Groups 2, 3, 4 and 5.

1 The wheat enterprise survey is an annual survey undertaken by the Agricultural Economics Research Unit on behalf of the Wheatgrowing Sub-Section of Federated Farmers of New Zealand Inc. Results for 1982-83, 1983-84 and 1984-85 are contained in Research Reports 142, 160 and 170 respectively. This survey was discontinued in 1986.

TABLE 1
Farm Groups

Crop Income as Percentage of Gross Farm Profit			
Group	Range (%)	Average (%)	Number of Farms (No.)
1	Below 5	2.0	11
2	5-24	19.0	18
3	25-49	39.0	22
4	50-74	71.6	24
5	75 and above	86.6	10
All Farms		50.5	85

TABLE 2

Physical Farm Characteristics

Group	1	2	3	4	5	All Farms
Total Area (ha)	244.2	193.9	196.1	182.4	208.1	199.4
Effective Area (ha)	240.9	187.0	189.7	177.3	203.5	193.9
Stock Units (No. at Start of Year)	3348	2396	1851	1099	827	1827
Wheat Area (ha)	2.2	7.6	21.9	25.7	27.7	18.1
Barley Area (ha)	4.6	11.2	26.6	40.5	63.0	28.7
Oats Area (ha)	0	0.6	1.1	4.9	2.5	2.1
Pea Area (ha)	0	0.4	4.7	9.3	17.2	5.9
Small Seed Area (ha)	0	0.3	3.8	14.6	30.8	8.8
Other Crop Area (ha) ^a	0	0.4	0.3	3.6	9.9	2.3
Crop Area (% of Effective Area)	2.8	10.9	30.8	55.6	74.3	34.0

a Oats area included under other crops up until 1982-83.

CHAPTER 2

CAPITAL STRUCTURE

The capital structure of wheatgrowing farms in New Zealand is detailed in Table 3. Valuations of land and buildings, livestock, plant and machinery apply as at the start of the 1984-85 financial year.² Definitions of terminology and procedures used are detailed in Appendix A.

2.1 Farm Assets

Total farm assets on the average New Zealand survey farm were valued at \$905,239; (Table 3) 81 percent of total farm assets were invested in land and buildings, 16 percent in livestock and plant and 3 percent in crop on hand (Table 3). Current liabilities exceeded current assets resulting in a working capital deficit of \$28,170. Total farm assets including working capital therefore amounted to \$877,069. Group 5 farms had the highest level of farm assets including working capital at \$1,035,271 this being nearly 40.0 percent higher than Group 2 farms.

2.2 Farm Liabilities

Total farm liabilities on the average New Zealand survey farm were assessed at \$159,359 (Table 3). The two main sources of farm liabilities in order of importance were private lenders including solicitors (46.0 percent of total farm liabilities) and the Rural Bank (26.0 percent of total farm liabilities).

Group 5 farms influenced by substantial borrowing from private resources and Rural Bank had the highest level of farm liabilities at \$232,276. This level of total borrowing was one and a third times higher than Group 1 farms at \$98,708.

2 Plant and machinery were valued at historical cost to the grower from the financial statements while market (Appendix A) values were used for livestock.

TABLE 3
Capital Structure (at Start of Year)

Group	1	2	3	4	5	All Farms
	\$	\$	\$	\$	\$	\$
Farm Capital						
Land and Buildings	689,375	614,381	695,979	821,522	832,458	729,349
Tractor, Truck, Header	42,411	41,674	57,957	85,702	103,298	65,665
Other Plant	18,068	18,113	29,457	41,195	45,336	30,763
Sheep	80,764	55,332	43,868	27,182	16,335	43,120
Cattle	16,734	23,945	7,170	12	2,866	9,433
Other	1,342	466	4,591	605	1,940	1,860
Total Farm Capital	848,694	753,911	839,022	976,218	1,002,233	880,190
Produce on Hand						
Wheat	109	1,057	13,461	12,001	24,730	10,020
Barley	2,214	2,097	5,608	12,939	24,440	8,711
Peas		0	105	117	4,300	565
Small Seeds	336	0	994	6,922	16,180	4,159
Other Crops		0	529	611	4,400	827
Wool	1,591	1,321	291	731	0	767
Total Produce	4,250	4,475	20,988	33,321	74,050	25,049
Total Farm Assets	852,944	758,386	860,010	1009,539	1,076,283	905,239
Working Capital						
Bank	-10285	-10563	-1,242	-14365	-21793	-10,509
Stock Firm	-3446	-5900	-11257	-28,648	-19,705	-15,016
Equalisation						
Deposits	0	1,222	456	1,250	0	729
Sundry Debtors	5,488	6,026	4,857	9,477	7,168	6,763
Sundry Creditors	9,433	10,802	11,639	10,023	6,682	10,137
Working Capital	-17,676	-20,017	-18,825	-42,309	-41,012	-28,170
Total Farm Assets Including Working Capital	835,268	738,369	841,185	967,230	1,035,271	877,069

(Table 3 Cont.)

TABLE 3 (Cont.)

Capital Structure

Group	1	2	3	4	5	All Farms
	\$	\$	\$	\$	\$	\$
Farm Liabilities						
Fixed Liabilities						
Rural Bank	27,260	27,085	43,396	44,366	70,524	41,319
Govt. Agencies other than Rural Bank	108	2,869	1,161	1,496	15,573	3,176
Commercial Bank	6,382	12,732	12,968	17,719	9,950	13,052
Insurance Co.	6,992	17,296	5,514	19,333	11,250	12,777
Stock Firm	0	0	1,909	8,167	2,995	3,152
Private	37,411	62,738	57,563	54,498	96,965	59,821
County Council	0	979	2,160	224	382	875
Hire Purchase	483	2,662	2,451	8,962	5,231	4,046
Other Financial Institutions	6,559	2,748	8,434	10,815	5,406	7,303
Solicitors	13,513	1,500	26,468	7,735	14,000	12,749
Sub Total	98,708	130,609	162,024	173,315	232,276	158,630
Specific Reserves	0	1,222	456	1,250	0	729
Total Farm Liabilities	98,708	131,831	162,480	174,565	232,276	159,359
Farm Equity	736,560	606,538	678,705	792,665	802,995	717,710
Non-Farm Assets						
Personal Assets	2,000	556	2,242	104	0	986
Investments	12,617	10,460	8,309	10,575	3,167	9,357
Total Non-Farm Assets	14,617	11,016	10,551	10,679	3,167	10,343
Net Worth	751,177	617,554	689,256	803,344	806,162	728,053

2.3 Movement in Capital Structure and Farm Equity Per Effective Hectare

A summary of the change in capital structure and farm equity per hectare³ for the period 1984-85 is given in Table 4. Total farm capital on the average New Zealand survey farm was \$4,539 per hectare at the start of the financial year. This increased by \$168 per hectare during the year to \$4,707 per hectare. The value of produce on hand declined by \$28 per hectare but the working capital position improved by \$2 per hectare to offset the increase in farm capital with the result that total farm assets adjusted for working capital increased by \$142 per hectare over the twelve month period to \$4,665 per hectare. Farm liabilities, however, increased by \$55 per hectare from \$822 to \$877 per hectare with the result that farm equity increased from \$3,701 per hectare to \$3,788 per hectare over the twelve month period. Farm equity expressed as a percentage of total farm assets including working capital declined from 81.8 percent at the start of the year to 81.2 percent by the end. The liquidity position, assessed as unsold produce less net working capital, declined from a deficit of \$16 per hectare at the start of the year to a deficit of \$26 per hectare at the end of the year.

Non-farm assets on average improved by \$20 per hectare over the year with all Farm Grups showing an increase.

3 All figures are on a per effective hectare basis.

TABLE 4
Capital Structure per Effective Hectare

Group	1	2	3	4	5	All Farms
	\$/ha	\$/ha	\$/ha	\$/ha	\$/ha	\$/ha
<u>Start of Year</u>						
Capital Value						
Land and Buildings	2,861	3,285	3,669	4,634	4,091	3,761
Livestock	410	426	293	156	104	281
Plant and Machinery	251	320	461	716	730	497
Total Farm Capital	3,522	4,031	4,423	5,506	4,925	4,539
Produce on Hand	18	24	111	188	364	129
Working Capital	-73	-107	-99	-239	-202	-145
Total Farm Assets Including Working Capital	3,467	3,948	4,435	5,455	5,087	4,523
Total Farm Liabilities	410	705	857	985	1,141	822
Farm Equity	3,057	3,243	3,578	4,470	3,946	3,701
Non-Farm Assets	61	59	56	60	16	53
Net Worth	3,118	3,302	3,634	4,530	3,962	3,754
<u>End of Year</u>						
Capital Value						
Land and Buildings	2,878	3,284	3,823	4,845	4,312	3,886
Livestock	440	445	307	165	124	297
Plant and Machinery	282	308	505	726	816	524
Total Farm Capital	3,600	4,037	4,635	5,736	5,252	4,707
Produce on Hand	11	33	76	128	323	101
Working Capital	-93	-134	-106	-204	-175	-143

(Table 4 Cont.)

TABLE 4 (Cont.)

Capital Structure Per Effective Hectare

Group	1	2	3	4	5	All Farms
	\$/ha	\$/ha	\$/ha	\$/ha	\$/ha	\$/ha
Total Farm Assets Including Working Capital	3,518	3,936	4,605	5,660	5,400	4,665
Total Farm Liabilities	436	701	941	1,061	1,231	877
Farm Equity	3,082	3,235	3,664	4,599	4,169	3,788
Non-Farm Assets	87	70	78	76	41	73
Net Worth	3,169	3,305	3,742	4,675	4,210	3,861
<u>Changes of the Year to:</u>						
Total Farm Capital	78	6	212	230	327	168
Produce on Hand	-7	9	-35	-60	-41	-28
Working Capital	-20	-27	-7	35	27	2
Total Farm Assets Including Working Capital	51	-12	170	205	313	142
Total Farm Liabilities	-26	4	-84	-76	-90	-55
Farm Equity	25	-8	86	129	223	87
Non-Farm Assets	26	11	22	16	25	20
Net Worth	51	3	108	145	248	107
<u>Capital Ratios:</u>						
Farm Equity as Percentage of Total Farm Assets Including Working Capital						
Start of Year (%)	88.2	82.1	80.7	81.9	77.6	81.8
End of Year (%)	87.6	82.2	79.6	81.3	77.2	81.2
Produce on Hand less Working Capital						
Start of Year (\$)	-55	-83	12	-51	162	-16
End of Year (\$)	-82	-101	-30	-76	148	-26

CHAPTER 3

INCOME AND EXPENDITURE

Gross farm profit and expenditure details, along with the disposition of net farm profit, are given in Table 5. Definitions of terminology and procedures used are detailed in Appendix A.

3.1 Gross Farm Profit

Table 5 shows that the gross farm profit for the average New Zealand survey farm was \$142,142 of which 47 percent came from livestock production. The other sources of income were wheat (15 percent) and other crops including barley, peas and small seeds (35 percent). Gross farm profit increased with increasing crop intensity; gross farm profit of \$217,160 for Group 5 farms was more than double that of Group 2 farms.

Table 6 details gross farm profit for various enterprises on a per hectare and per stock unit basis. It is seen that:

1. Total gross farm profit per hectare increased with increased cropping intensity.
2. Livestock gross farm profit per stock unit varied from \$30 per stock unit on Group 5 properties to \$40 per stock unit on Group 3 properties. The high return per stock unit on Group 1,2 and 3 properties combined with higher carrying capacity resulted in livestock return per hectare of pasture on these properties exceeding the returns from livestock per hectare of pasture on the more intensively cropped properties.
3. Increased cropping intensity was associated with increased wheat gross profit per total farm hectare. When wheat gross profit was expressed on a per hectare of wheat grown basis, wheat gross profit varied from \$481 per hectare of wheat grown on Group 2 properties to \$1,296 per hectare of wheat grown on Group 4 properties.
4. In farm Groups 2, 3, 4 and 5 other crop gross profit per hectare grown was greater than livestock gross farm profit per hectare of pasture but, with the exception of Group 5 farms, less than wheat gross farm profit per hectare of wheat grown.

TABLE 5
Gross Farm Profit and Expenditure

Group	1	2	3	4	5	All Farms
	\$	\$	\$	\$	\$	\$
<u>Gross Farm Profit</u>						
Gross Farm Revenue						
Wool	53,939	35,677	32,516	16,921	10,519	28,967
Sheep	67,103	54,857	50,471	28,641	21,525	43,983
Cattle	8,692	14,768	5,636	3,607	6,536	7,498
Deer/Goats	1,356	2,428	2,865	740	738	1,727
Wheat	1,059	8,842	25,259	33,312	30,426	21,532
Barley	1,473	9,131	22,730	40,105	81,576	28,928
Peas	0	158	5,507	7,711	18,648	5,830
Small Seeds	-155	112	2,745	10,802	45,491	9,116
Other Crops	0	1,360	564	16,118	11,927	6,388
Rebates/Subsidies	1,883	1,012	711	1,075	565	1,012
Produce, Milk, Pigs	353	3,437	0	1,670	137	1,261
Sundry - Hay, Grazing	637	27	2,121	3,262	3,271	1,943
Sub Total	136,340	131,809	151,125	163,964	231,359	158,185
Less Livestock Purchases						
Sheep	9,620	15,006	12,065	9,497	10,075	11,412
Cattle	3,621	1,340	4,196	3,330	4,124	3,264
Other	2,182	2,398	1,952	254	0	1,367
Total Purchases	15,423	18,744	18,213	13,081	14,199	16,043
Gross Farm Profit	120,917	113,065	132,912	150,883	217,160	142,142

(Table 5 Cont.)

TABLE 5 (Cont.)

Gross Farm Profit and Expenditure

Group	1	2	3	4	5	All Farms
	\$	\$	\$	\$	\$	\$
<u>Gross Farm Expenditure</u>						
Farm Working Expenses:						
Wages	13,816	10,684	9,945	14,719	17,463	12,835
Animal Health	4,556	3,266	2,315	1,454	1,368	2,452
Seed and Fertiliser	11,320	10,251	16,485	17,564	24,558	15,751
Freight	2,350	2,766	4,275	5,727	11,975	5,022
Chemicals	3,105	2,315	5,490	11,707	20,202	7,995
Other	10,676	11,404	13,747	11,778	19,444	12,968
Sub Total	45,823	40,686	52,257	62,949	95,010	57,023
Repairs and Maintenance	5,743	4,314	14,573	4,911	6,424	7,571
Tractor and Vehicle						
Repairs and Maintenance	7,765	6,132	8,878	9,968	16,829	9,396
Fuel and Oil	6,990	6,493	8,596	12,449	15,222	9,810
Admin., Rates, Insurance	8,206	6,814	7,623	8,022	9,750	7,890
Debt Servicing	17,351	21,684	23,467	29,898	37,572	25,773
Total Cash Expenditure	91,878	86,123	115,394	128,197	180,807	117,463
Depreciation						
Buildings	1,137	1,042	1,449	1,049	1,344	1,197
Motorised Plant	8,482	8,335	11,592	17,140	20,658	13,133
Non-Motorised Plant	1,807	1,811	2,946	4,119	4,534	3,076
Gross Farm Expenditure	103,304	97,311	131,381	150,505	207,343	134,869

Net Farm Profit						
- \$	17,613	15,754	1,531	378	9,817	7,273
- % Gross Farm Profit	14.6	13.9	1.2	0.3	4.5	5.1
Used as Follows:						
Personal Drawings	16,866	15,102	15,244	15,777	17,183	15,803
Taxation	3,990	5,513	5,515	4,122	5,400	4,910
"Savings"	-3243	-4861	-19228	-19521	-12766	-13,440
=====						

TABLE 6

Gross Farm Profit - Enterprise Analysis

Group	1	2	3	4	5	All Farms
	\$	\$	\$	\$	\$	\$
Gross Farm Profit:						
Livestock (\$/ha)	480	476	386	208	123	341
Wheat (\$/ha)	4	47	133	188	150	111
Other Crops (\$/ha)	5	58	166	422	775	259
Sundry (\$/ha)	13	24	16	33	19	22
Total Gross Farm Profit (\$/ha)	502	605	701	851	1,067	733
Livestock (\$/stock unit)	35	37	40	34	30	36
Livestock (\$/ha Pasture)	494	534	543	395	303	483
Wheat (\$/ha wheat grown)	481	1,163	1,153	1,296	1,098	1,190
Other Crops (\$/ha other crops grown)	287	834	864	1,025	1,277	1,052

3.2 Gross Farm Expenditure

Table 5 shows gross farm expenditure for the average New Zealand survey farm to be \$134,869; the main components are farm working expenses (42 percent), tractor and vehicle expenses including depreciation (26 percent) and debt servicing (19 percent).

Table 7 gives a summary of gross farm expenditure on a per hectare basis. Gross farm expenditure per hectare increased with increased cropping intensity. In Group 5, farm working expenses were over twice the farm working expenses on Group 2 farms, debt servicing was one and a half that of Group 2 farms while tractor and vehicle expenses were nearly two and a third times greater.

3.3 Net Farm Profit Disposition

Table 5 shows net farm profit (gross farm profit minus gross farm expenditure) on the average New Zealand survey farm to be \$7,273 or 5 percent of gross farm profit. Personal drawings and taxation exceeded this net farm profit thereby resulting in a deficit per farm of \$13,440.

TABLE 7

Gross Farm Expenditure per Effective Hectare

Group	1	2	3	4	5	All Farms
	\$/ha	\$/ha	\$/ha	\$/ha	\$/ha	\$/ha
Farm Working Expenses:						
Wages	57	57	52	83	87	66
Animal Health	19	17	12	8	7	13
Seed and Fertiliser	47	55	87	99	120	81
Freight	10	15	23	32	59	26
Chemicals	13	12	29	66	99	41
Other	44	61	72	66	96	67
Sub-Total	190	217	275	354	466	294
Repairs and Maintenance	24	23	77	28	32	39
Tractor and Vehicle Expenses:						
Repairs and Maint.	32	33	47	56	83	48
Fuel and Oil	29	35	45	70	75	51
Admin., Rates, Insurance	34	36	40	45	48	41
Debt Servicing	72	116	124	169	185	133
Total Cash Expenditure	381	460	608	722	889	606
Depreciation	47	60	84	126	130	90
Gross Farm Expenditure	428	520	692	848	1,019	696

Table 8 summarises the disposal of net farm profit on a per hectare basis. The average New Zealand survey farm has a net farm profit per hectare of \$37. At \$85 per hectare Group 2 farms have the highest net farm profit. Group 4 farms with a loss of \$24 per hectare produced the lowest net farm profit per hectare.

Personal expenditure and taxation, which on the average New Zealand survey farm amounted to \$107 per hectare, exceeded net farm profit per hectare, a factor common to all farm groups.

TABLE 8

Net Farm Profit Disposition per Effective Hectare

Group	1	2	3	4	5	All Farms
	\$/ha	\$/ha	\$/ha	\$/ha	\$/ha	\$/ha
Gross Farm Profit	502	605	701	851	1,067	733
less Gross Farm Expenditure	428	520	692	848	1,019	696
Net Farm Profit	74	85	9	3	48	37
Used as Follows:						
Personal Drawings	70	81	80	89	84	82
Taxation	17	29	29	23	27	25
"Savings"	-13	-25	-100	-109	-63	-70

CHAPTER 4

CASH FLOW STATEMENT

The liquidity position for wheat growing farms in New Zealand for the 1984/85 season is detailed in Table 9.

4.1 Source and Disposition of Cash

Table 9 shows that the total available cash on the average New Zealand survey farm was \$65,743, 48 percent of which came from direct farm trading. The other sources of available cash were an increase in farm liabilities (32 per cent), sale of assets (11 per cent) and non-farm income (9 per cent). Total cash disposition on the average New Zealand survey farm was \$65,333. The components of this expenditure were capital expenditure (45 per cent), personal expenditure (40 per cent) and loan repayments (15 per cent). A decrease in the value of produce and crop on hand at the end of the year offset the cash surplus of \$410. Livestock on hand decreased by \$1,352, wool decreased by \$100, while crop on hand decreased by \$5,432 giving a decrease in total inventory of \$6,884 and an adjusted cash deficit of \$6,474.

In Group 1 the cash surplus from farming covered personal drawings, taxation sundry investments and 15 per cent of loan repayments. The balance of the loan repayments and capital expenditure amounting to \$35,669 was financed by sale of assets of \$7,398, an increase in fixed liabilities of \$19,375 and non farm income of \$4,282 leaving a cash deficit on current account of \$4,614. This cash deficit was compounded by a decrease in the value of produce on hand estimated to be \$1,689. The increase in borrowed funds offset loan repayments by \$6,250.

In Group 2 the cash surplus from farming covered personal drawings, sundry investments, taxation and 45 per cent of the loan repayments. The balance of the loan repayments and capital expenditure amounting to \$19,239 was financed by increasing fixed liabilities by \$6,462, sale of assets amounting to \$4,258 and non farm income of \$3,559. The current account cash deficit of \$4,960 was compounded by a decline in the value of livestock on hand at the end of the year estimated at \$2,749 partly offset by an increase in the value of crop on hand estimated at \$1,644. The cash deficit adjusted for the change in livestock and produce on hand is therefore assessed at \$6,065. The increase in borrowed funds offset loan repayments by \$527.

In Group 3 the cash surplus from farming covered personal drawings, taxation, sundry investments and 4.0 percent of the loan repayments. The balance of the loan repayments and capital expenditure amounting to \$40,838 was financed by an increase in fixed liabilities of \$25,446, sale of assets amounting to \$7,798 and non farm income of \$6,353 resulting in a current account cash deficit of \$1,241. This cash deficit was further compounded by a decline in the value of livestock on hand of \$2,609 and of crop on hand of \$6,507. The cash

TABLE 9
Cash Flow Statement

	1		2		3		4		5		All Farms	
	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%
Cash Sales												
Wool	53,558		35,694		32,577		17,380		10,519		29,067	
Sheep	65,046		53,742		52,753		31,307		24,762		45,205	
Cattle	10,663		21,045		7,918		524		5,110		8,635	
Deer/Goats	1,574		0		849		1,049		0		720	
Wheat	896		9,298		30,785		37,714		42,046		25,648	
Barley	3,419		7,031		22,974		43,034		77,681		29,167	
Peas	0		158		5,611		7,786		17,398		5,731	
Small Seeds	0		112		3,058		14,025		44,476		10,008	
Other Crops	0		1,360		883		15,675		14,707		6,672	
Rebates and Subsidies	1,883		1,012		711		1,075		565		1,012	
Sundry - Produce	353		3,437		0		1,670		137		1,261	
- Hay, Grazing	637		27		2,121		3,262		3,271		1,943	
1 Total Cash Farm Income	138,029		132,916		160,240		174,501		240,672		165,069	
Stock Purchases	15,423		18,744		18,213		13,081		14,199		16,043	
Cash Farm Expenditure	91,878		86,123		115,394		128,197		180,807		117,463	
2 Total Cash Expenditure	107,301		104,867		133,607		141,278		195,006		133,506	
Cash Surplus from Farming (1-2)	30,728	49.7	28,049	66.3	26,633	40.2	33,223	45.2	45,666	49.3	31,563	48.0
Non-Farm Income:												
Contracting	88		1,391		3,777		2,162		9,434		3,004	
Interest, Fees, etc.	1,617		953		995		906		1,095		1,053	
Insurance Claims, etc.	1,962		526		1,430		1,459		2,367		1,426	
Tax Refunds	615	6.9	689	8.4	151	9.6	213	6.5	1,147	15.2	460	9.0
Increase in Farm Liabilities:												
Rural Bank	10,333		1,008		17,934		14,608		5,997		11,022	
Private	0		1,384		791		992		173		798	
Other	9,042	31.4	4,070	15.3	6,721	38.4	10,253	35.2	22,883	31.4	9,359	32.2
Sale of Assets:												
Mechanised	5,464		1,668		5,275		7,178		1,675		4,649	
Non Mechanised Plant	406		423		1,294		530		2,150		880	
Investments	1,528	12.0	2,167	10.0	1,229	11.8	1,964	13.1	0	4.1	1,529	10.8
3 Total Available Cash	61,783	100.0	42,328	100.0	66,230	100.0	73,488	100.0	92,587	100.0	65,743	100.0

TABLE 9 (cont.)

Cash Flow Statement

	1		2		3		4		5		All Farms	
	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%
Capital Expenditure:												
Buildings	909		5,851		2,756		313		1,867		2,378	
Merchanised Plant	16,531		2,970		19,740		18,374		23,096		15,782	
Other Plant	4,381		4,183		6,995		10,748		20,821		8,747	
Car	2,682	35.5	2,983	33.8	2,767	47.8	1,666	46.2	2,616	55.6	2,473	45.0
Loan Repayments:												
Rural Bank	1,938		1,722		1,470		2,000		2,086		1,806	
Private	948		202		3,277		739		3,054		1,582	
Other	10,239	19.8	4,011	12.6	4,179	13.2	8,798	17.1	5,749	12.5	6,417	15.0
Personal Expenditure:												
Personal Drawings	16,866		15,102		15,244		15,777		17,183		15,803	
Taxation	3,990		5,513		5,515		4,122		5,400		4,910	
Sundry Investments	7,913	44.7	4,751	53.6	5,528	39.0	4,809	36.7	5,235	31.9	5,435	40.0
4 Total Cash Disposition	66,397	100.0	47,288	100.0	67,471	100.0	67,346	100.0	87,107	100.0	65,333	100.0
5 Cash Surplus/Deficit	-4,614		-4,960		-1,241		6,142		5,480		410	
Change in Produce on Hand:												
Livestock: Sheep	2,057		1,116		-2,282		-2,666		-3,236		-1,222	
Cattle	-1,972		-6,276		-2,282		3,083		1,426		-1,137	
Deer, Goats and Other	-218		2,428		2,016		-309		738		1,007	
Wool	381		-17		-61		-460		0		-100	
Crop: Wheat	164		-456		-5,526		-4,402		-11,620		-4,116	
Barley	-1,946		2,100		-244		-2,928		3,895		-239	
Peas	0		0		-106		-75		1,250		99	
Small Seeds	-155		0		-313		-3,223		1,015		-892	
Other	0		0		-318		443		-2,780		-284	
6 Total Inventory Change	-6,189		-1,105		-9,116		-10,537		-9,312		-6,884	
7 Adjusted Cash Surplus/Deficit (5+6)	-6,303		-6,065		-10,357		-4,395		-3,832		-6,474	

deficit adjusted for inventory change is therefore \$10,357. The increase in borrowed funds exceeded loan repayments by \$16,520.

In Group 4 the cash surplus from farming covered two thirds of personal drawings, taxation, sundry investments, and 74.0 per cent of loan repayments. The balance of the loan repayments and capital expenditure totalling \$34,123 was financed by increased fixed liabilities of \$25,853 and sale of assets amounting to \$8,270. The balance of the sale of assets and non farm income resulted in a current account surplus of \$6,142. This cash surplus was offset by an decrease in produce on hand at the end of the year resulting in a cash deficit adjusted for inventory change of \$4,395. The increase in fixed liabilities exceeded loan repayments by \$14,316.

In Group 5 the cash surplus from farming covered personal drawings, taxation, sundry investments, loan repayments and 14 per cent of capital expenditure. The balance of the capital expenditure amounting to \$41,441 was financed by increased term borrowing of \$29,053, sale of assets amounting to \$3,825 and non farm income of \$8,563. The balance of the non-farm income resulted in a surplus in the current account of \$5,480. This current account surplus was offset against a decline in livestock of \$1,072 and produce valued at \$8,240 resulting in a deficit of \$3,832 after adjustments for the change in inventory. The increase in fixed liabilities exceeded loan repayments by \$18,164.

4.2 Financing the Cash Deficit

Table 10 shows that the working capital surplus on the average New Zealand survey farm resulted from a \$3,083 increase in cash resources held in Bank and Stock Firm accounts and an increase in sundry debtors of \$350. This was offset by a decrease of \$612 in the Income Equalisation deposits and a \$2,414 increase in sundry creditors.

TABLE 10
Financing the Change in Working Capital

Group	1	2	3	4	5	All Farms
	\$	\$	\$	\$	\$	\$
Changes of Funds in Current Account						
Bank	299	1,422	-2,891	1,793	15,862	1,964
Stock Firm	-1,507	-3,683	1,471	7,474	-3,373	1,119
Sundry Debtors	-1,246	-1,407	44	1,925	2,184	353
Income Equalisation Deposits	0	-1,224	-454	-833	0	-612
Sundry Creditors	-2,166	-68	589	-4,217	-9,193	-2,414
Cash Surplus/Deficit	-4,614	-4,960	-1,241	6,142	5,480	410

CHAPTER 5

ECONOMIC INDICATORS

This Chapter presents the financial productivity and financial stability of wheat growing properties in New Zealand. The data are summarised in Table 11 with a more detailed analysis in Appendix B. Definitions of terminology and procedures used are detailed in Appendix A.

5.1 Financial Productivity

The economic farm surplus which includes an adjustment for unconsidered revenue and debt servicing is related to the factors of production namely land, labour and capital.

5.1.1 Economic Farm Surplus

The average New Zealand survey farm gross farm profit, assessed at \$733 per hectare, when adjusted for unconsidered revenue items gave a gross farm income of \$764 per hectare. Gross farm expenditure assessed at \$696 per hectare when adjusted for debt servicing and unconsidered expenditure gave total farm expenses of \$492 per hectare. Economic farm surplus (gross farm income less total farm expenses) was therefore assessed at \$272 per hectare.

The economic farm surplus increased with increasing crop intensity being \$212 per hectare for Group 1 farms increasing to \$324 per hectare for Group 5 farms. The expenditure ratio increased as cropping intensity increased.

5.1.2 Return to Land

The average New Zealand survey farm specific land rent return was 2.4 percent which increased to 5.2 percent when adjusted for the capital increment associated with land and buildings. Land rent returns varied from Group 5 farms which showed a 3.3 percent return to Group 4 properties which showed a return of 1.9 percent. When the land rent was adjusted for capital growth the land rent return ranged from 8.4 percent on Group 5 farms to 2.7 percent on Group 1 farms.

5.1.3 Return to Labour and Management

The return to labour and management has been assessed on a reinvestment basis, that is, the economic surplus is related to the opportunity cost of investing the owner-operator's equity in an investment returning 17.0 percent per annum (average interest charged on current account deficits as at June 1985).

TABLE 11
Economic Indicators

Group	1	2	3	4	5	All Farms
<u>Financial Productivity</u>						
Gross Farm Profit \$/ha	502	605	701	851	1,067	733
+ Unconsidered Revenue \$/ha	21	31	36	33	27	31
= Gross Farm Income	523	636	737	884	1,094	764
Gross Farm Expenditure \$/ha	428	520	692	848	1,019	696
- Debt Servicing \$/ha	72	116	124	169	185	133
- Unconsidered Expenditure	45	38	96	84	64	71
= Total Farm Expenses	311	366	472	595	770	492
Economic Farm Surplus \$/ha	212	270	265	289	324	272
Expenditure Ratio	0.59:1	0.58:1	0.64:1	0.67:1	0.70:1	0.64:1
<u>Returns to Factors of Production</u>						
<u>Return to Land (%)</u>						
Specific Land Rent Return	2.2	2.9	2.3	1.9	3.3	2.4
Land Rent Return Including Capital Increment of Land and Buildings	2.7	3.3	4.9	6.2	8.4	5.2
<u>Return to Labour and Management (\$)</u>						
Owner's Surplus	-91,696	-74,451	-88,870	-113,573	-105,479	-95,109
Wages of Management	18,299	18,049	17,735	18,037	19,835	18,207
Owner's Excess	-109,995	-92,500	-106,605	-131,610	-125,314	-113,316
Owner's Excess Return Including Capital Increment	-91,606	-91,901	-77,062	-92,560	-61,217	-84,596
<u>Return to Capital (%)</u>						
Return to Capital	3.8	4.3	3.8	3.3	4.5	3.8
Return to Farm Capital Including Capital Increment	6.0	4.4	7.2	7.1	10.5	7.0

Table 11 (Cont.)

TABLE 11 (Cont.)

Economic Indicators

Group	1	2	3	4	5	All Farms
<u>Return to Equity (%)</u>						
Return to Farm Equity	2.1	1.8	1.3	0.4	1.4	1.2
Return to Farm Equity Including Capital Increment	4.6	1.9	6.7	5.3	8.0	5.2
<u>Financial Stability</u>						
Capital Increment:						
Total Farm Capital (\$/ha)						
Start of Year	3,522	4,031	4,423	5,506	4,925	4,539
End of Year	3,600	4,037	4,635	5,736	5,252	4,707
Working Capital (including Produce on Hand) (\$/ha)						
Start of Year	-55	-83	12	-51	162	-16
End of Year	-82	-101	-30	-76	148	-42
Total Farm Liabilities (\$/ha)						
Start of Year	410	705	857	985	1,141	822
End of Year	436	701	941	1,061	1,231	877
Farm Equity (\$/ha)						
Start of Year	3,057	3,243	3,578	4,470	3,946	3,701
End of Year	3,082	3,235	3,664	4,590	4,169	3,788
Liquidity:						
Financial Gearing (%)						
Start of Year	11.8	17.9	19.3	18.1	22.4	18.2
End of Year	12.4	17.8	20.4	18.8	22.8	18.8
Working Capital Ratio						
Start of Year	0.42:1	0.43:1	1.09:1	0.83:1	1.69:1	0.91:1
End of Year	0.26:1	0.36:1	0.77:1	0.72:1	1.67:1	0.76:1
Liquidity Ratio						
Start of Year	N/A	0.07:1	0.04:1	0.03:1	N/A	0.03:1
End of Year	N/A	N/A	N/A	0.01:1	N/A	0.01:1

The average New Zealand survey farm owner's surplus was \$95,109 less than if he had invested his equity in another form of investment returning 17.0 percent. If the opportunity cost of the owner's labour is valued at \$18,207 (wages of management) then the owner's excess, that is, the return to the owner's management, was \$113,316 less than the opportunity cost of an alternative form of investment. If the capital increment was also included this return was \$84,596 less than the alternative form of investment. The owner's excess adjusted for capital increment ranged from \$61,217 deficit in Group 5 to \$92,560 deficit in Group 4.

5.1.4 Return to Capital

The average New Zealand survey farm's return to capital was 3.8 percent and return to farm equity was 1.2 percent. This would indicate that debt servicing amounting to \$133 per hectare exceeded incremental production resulting from this level of borrowing by \$86 per hectare (Basis of assessment given in Appendix A 13). Group 1 farms showed a 3.8 percent return to capital and a return to equity of 2.1 percent indicating that debt servicing of \$72 per hectare exceeded incremental production from this level of borrowing by \$49 per hectare.

Group 2 farms showed 4.3 percent return to capital and a 1.8 percent return to equity indicating that debt servicing of \$116 per hectare exceeded incremental production from this level of borrowing by \$66 per hectare.

Group 3 farms showed a 3.8 percent return to capital and a return to farm equity of 1.3 percent. Debt servicing of \$124 per hectare therefore exceeded incremental production resulting from this level of borrowing by \$76 per hectare. Group 4 farms showed a 3.3 percent return to capital and a return to farm equity of minus 0.4 percent. Debt servicing of \$169 per hectare therefore exceeded incremental production resulting from this level of borrowing by nearly \$118 per hectare.

Group 5 farms showed a 4.5 percent return to capital and a 1.4 percent return to equity. Debt servicing at \$185 per hectare therefore exceeded incremental production from this level of borrowing by \$122 per hectare.

When adjusted for capital increment, return to capital for the average New Zealand survey farm was 7.0 percent while the return to farm equity was 5.2 percent indicating that the increase in the value of total farm capital did not offset the poor utilisation of borrowed funds.

5.2 Financial stability

The change in total assets, fixed liabilities and working capital is assessed over the twelve month period ending June 1985.

5.2.1 Capital Growth

The average New Zealand survey farm showed an increase in Total Farm Capital of \$168 per hectare. This was offset by a \$26 per hectare decline in the net working capital position and a \$55 per hectare increase in farm liabilities resulting in farm equity that increased by \$87 per hectare.

5.2.2 Liquidity

Due to the increase in farm liabilities, financial gearing for the average survey farm declined from 18.2 percent at the start of the year to 18.8 percent at the end of the year. All groups showed financial gearing which declined between the start and the end of the year.

The working capital ratio for all surveyed farms indicates that current liabilities exceeded current assets by 9 cents in the dollar at the start of the year and by 24 cents in the dollar at the end of the year, indicating a deterioration in the net working capital position. The liquidity ratio indicates that the relatively high working capital position resulted from non-liquid assets i.e. crop on hand rather than cash resources.

CHAPTER 6

TRENDS IN FINANCIAL PERFORMANCE

This Chapter compares the financial returns of the average New Zealand wheatgrowing farm as determined from wheatgrowers' financial statements over the last five years. A direct comparison is made between the period 1984-85 and the previous year 1983-84. The base year figures (1978-79) have been included for further comparison. Definitions of terminology and procedures used are detailed in Appendix A.

6.1 Capital Structure

Table 12 shows that total farm assets including working capital as determined at the start of the year, was static at \$4,523 per hectare, while total farm liabilities increased by 6.9 percent to \$822 per hectare. This resulted in farm equity decreasing from \$3,745 to \$3,701 per hectare.

6.2 Gross Farm Profit and Expenditure

Table 13 shows that while wheat gross profit remained constant other enterprises increased such that total gross farm profit increased by 21.4 percent to \$733 per hectare. Gross farm expenditure increased by 20.2 percent to \$696 per hectare. These movements caused net farm profit to increase by 48.0 percent from \$25 per hectare to \$37 per hectare.

6.3 Cash Flow Statement

Table 14 shows that a 36.2 percent increase in cash farm income to \$851 per hectare offset a 28.5 percent increase in cash farm expenditure. The cash surplus from farming doubled to \$162 per hectare. Non-farm income declined by 6.0 percent, farm liabilities increased by 56.0 percent and the sale of assets increased by 22.0 percent resulting in a 47.0 percent increase in total available cash to \$338 per hectare (from \$230 per hectare in 1983/84).

The total disposition of cash resources increased by 22 percent to \$336 per hectare. The major factors contributing to this situation were a 25 percent increase in capital expenditure, and a 29 percent increase in personal expenditure. The 1983-84 cash deficit of \$46 per hectare was reduced to a cash surplus of \$2 per hectare in 1984-85. This cash surplus was achieved by a decline in the value of crop and livestock on hand estimated at \$36 per hectare. This resulted in an adjusted deficit of \$34 per hectare, significantly different from the \$18 per hectare deficit in 1983-84.

TABLE 12
Capital Structure Comparisons
 (at start of year)

	1978-79 \$/ha ^a	1981-82 \$/ha	1982-83 \$/ha	1983-84 \$/ha	1984-85 \$/ha	Change 1983-84 to 1984-85 %
Land & Buildings	1,337	2,407	3,103	3,840	3,761	-2.1
Plant & Machinery	107	317	403	463	497	7.3
Livestock	232	278	254	228	281	23.3
Total Farm Capital	1,676	3,002	3,760	4,531	4,539	0.2
Plus Crop on Hand	42	67	89	89	129	44.9
Working Capital	-49	-86	-119	-106	-145	36.8
Total Farm Capital inc. Working Capital	1,669	2,983	3,730	4,514	4,523	0.2
Total Farm Liabilities	313	542	703	769	822	6.9
Farm Equity	1,356	2,441	3,027	3,745	3,701	-1.2
Non-Farm Assets	46	52	37	61	53	-13.1
Net Worth	1,402	2,493	3,064	3,806	3,754	-1.4

a Effective hectares

TABLE 13

Gross Farm Profit and Expenditure Comparisons

	1978-79 \$/ha ^a	1981-82 \$/ha	1982-83 \$/ha	1983-84 \$/ha	1983-84 \$/ha	Change 1982-83 to 1983-84 \$/ha
Gross Farm Profit						
Livestock	155	287	280	268	341	27.2
Wheat	52	91	113	111	111	0
Other Crops	57	125	181	207	259	25.1
Sundry	13	19	26	18	22	22.2
	—	—	—	—	—	—
Total	277	522	600	604	733	21.4
Gross Farm Expenditure						
Farm Working Expenses	94	199	225	240	294	22.5
Repairs and Maintenance	16	36	33	25	39	56.0
Tractor & Vehicle Expenses	30	58	73	79	99	25.3
Admin & Rates	17	29	37	37	41	10.8
Debt Servicing	39	78	106	114	133	16.7
Depreciation	24	59	74	84	90	7.1
	—	—	—	—	—	—
Total	220	459	548	579	696	20.2
Net Farm Profit	57	63	52	25	37	48.0
Used as Follows						
Personal Drawings	38	64	68	73	82	
Taxation	18	28	24	20	25	
"Savings"	1	-29	-40	-68	-70	

a Effective hectares

TABLE 14

Cash Flow Statement Comparisons

	1978-79 \$/ha ^a	1981-82 \$/ha	1982-83 \$/ha	1983-84 \$/ha	1984-85 \$/ha	Change 1983-84 to 1984-85 %
Total Cash Farm Income	314	583	651	625	851	36.2
Total Cash Farm Expenses	240	459	538	544	689	28.5
Cash Surplus from Farming	74	124	113	81	162	100.0
Non-Farm Income	15	24	22	33	31	-6.1
Increase in Farm Liabilities	34	63	84	70	109	55.7
Sale of Assets	22	32	21	46	36	21.7
Total Available Cash	145	243	240	230	338	47.0
Capital Expenditure	65	115	96	122	152	24.6
Loan Repayments	23	25	38	50	50	0
Personal Expenditure	66	110	109	104	134	28.9
Total Cash Disposition	154	250	243	276	336	21.7
Cash Surplus/ Deficit	-9	-7	-3	-46	2	
Inventory Change	7	-3	14	28	-36	
Adjusted Surplus/ Deficit	-2	-10	11	-18	-34	

a Effective hectares

APPENDICES

APPENDIX A

SURVEY DEFINITIONS AND DATA TREATMENT

Capital Structure

1. Valuation of land and buildings were taken from the latest Government valuation figures and updated using the "Farmland Sales Price Index" provided by the Farm Management Department, Lincoln College.
2. Plant and machinery valuations were taken at historical cost from the depreciation schedule of the 1984-85 financial statements. In previous surveys (1977-78 to 1979-80) values were based on book values. The plant and machinery valuations include cars but exclude boats and caravans which are included under Other Assets.
3. The following per head figures have been used to assess the value of livestock on hand at the start and end of the 1984-85 financial year: (Source: N.Z. Farmer Stock Report).

	North Island		Canterbury and South Canterbury		Southland	
	Start \$	End \$	Start \$	End \$	Start \$	End \$
Sheep: Ewes	24	24	24	24	26	25
Hoggets	26	24	26	30	28	36
Lambs	20	19	20	20	20	20
Rams	75	75	75	75	75	75
Cattle: Cows	420	460	420	500	450	530
2 yr Cattle	550	650	550	560	550	560
Yearlings	450	560	450	525	450	500
Weaners	290	325	290	340	290	345
Bulls	500	500	500	500	500	500

4. Values of crop on hand were obtained from the crop accounts for the 1984-85 year.
5. Off-farm assets were valued as presented in the 1984-85 financial statement.
6. Both fixed and current liabilities were as recorded in the balance sheet for the 1984-85 year.
7. Specific reserves relate to funds recorded in the balance sheet as specific reserves e.g. Income Equalisation Deposits.

Gross Farm Profit

8. Gross income for wool, sheep, cattle, wheat, barley, small seeds, other crops, produce and sundry income, were assessed as follows:
- | | | |
|---|---|-------|
| | Cash | Sales |
| + | Stock on hand at end of year at market values | |
| - | Stock on hand at start of year at market values | |
| - | Purchases | |
| = | Gross Farm Profit | |
9. Rebates, subsidies and contracting are as presented in the financial statements for 1984-85.

Gross Farm Expenditure

10. Gross farm expenditure is as presented in the financial statements for 1984-85 with the following adjustments if applicable:
- (i) Appropriation of private car expenses;
 - (ii) Deletion of managerial salaries;
 - (iii) Deletion of special depreciation allowances; and
 - (iv) Deletion of itemised development expenditure
11. Breakdown of farm expenditure items can be summarised as follows:
- (i) Repairs and maintenance includes costs associated with buildings, fences, tracks, culverts etc. plus any unitemised development expenditure;
 - (ii) Tractor and vehicle expenses includes all expenses associated with both mechanised and non-mechanised plant and machinery;
 - (iii) Administration, rates, insurance includes all administrative, power, telephone and overhead expenses; and
 - (iv) Debt Servicing includes all interest and rent charges.
12. Savings is the residual after personal drawings and taxation have been deducted from net farm income.
13. Economic Indicators.

The following are the definitions of terms used:

Gross Farm Profit: See Appendix A8.

Unconsidered Revenue: An allowance for factors of farm capital for which no income is received, namely:

Farm dwelling rental, assessed at 10 percent of cost;
 Farm car, assessed on an appropriate cost per km basis;
 and Farm produce used on the farm, adjusted to
 reasonable market value.

Gross Farm Income: Gross farm profit adjusted for unconsidered revenue.

Gross Farm Expenditure: See Appendix A 10 and 11.

Total Farm Expenditure: Gross farm expenditure (which includes unconsidered expenditure; see Appendix A 10) less debt servicing.

Economic Farm Surplus: Gross farm income (gross farm profit plus unconsidered revenue) less total farm expenditure (gross farm expenditure less debt servicing) equals economic farm surplus.

Expenditure Ratio: Total farm expenditure Gross farm income

Land Rent: This is computed as the residual after an allowance is made for the return to labour (wages of management), and stock and plant (stock and plant rent).

Stock and Plant Rent: Assessed as 10 percent of:

opening stock at opening values
 + opening plant at opening values
 + plant sales less plant purchases

Wages of Management: Consists of two components:

- (a) A married couple's basic wage reflecting the return to labour; and
- (b) Management assessed as follows:

2 percent gross farm profit to allow for scale and intensity
 + 5 percent net farm profit as a guide to the level of financial efficiency

Return to labour and Management: Assessed on the basis of owner's surplus and owner's excess expressed in dollar terms.

Owner's Surplus: Is taken as the economic farm surplus less debt servicing less the opportunity cost of investing the owner's equity (taken to be the weighted average of interest charged on current account deficits). In brief, the return to labour and management (owner's surplus) should be at least as great as the opportunity cost of the owner's labour and management in a non-farming occupation.

Owner's Excess: Owner's surplus less wages of management, where wages of management reflect the opportunity cost of the owner's labour. The residual after subtracting the opportunity

cost of labour and capital represents the return to the owner's management.

Return to Farm Capital: The economic farm surplus less wages of management (interest surplus) expressed as a percentage of total farm capital.

Return to Farm Equity: The economic farm surplus less wages of management and debt servicing (equity surplus) expressed as a percentage of farm equity.

The relationship between the return to farm capital and return to farm equity indicates the efficiency with which borrowed funds are used. This in turn depends on interest rates charged and the incremental production resulting from the borrowed funds. When the return to total farm capital exceeds the return to farm equity then the incremental production resulting from the borrowing fails to cover the debt servicing commitments. The resulting deficit can be quantified as follows:

All Farm Groups	Total Funds \$	=	Equity Funds \$	+	Borrowed Funds \$
Total Farm Capital	880,190		717,710		162,480
Percentage Distribution	100.00		81.5		18.5
Economic Farm Surplus	52,674		42,929		9,745
- Wages of Management					
Basic	15,000		15,000		0
Reward	3,207		2,613		593
= Interest Surplus	34,467		25,316		9,152
Return to Total Farm Capital (%)	3.8		3.5		5.6
+ Capital Increment	28,720		23,406		5,314
= Interest Surplus including Capital Increment			48,722		14,466
Return to Total Farm Capital including Capital Increment	7.0		6.8		8.9
Interest Surplus	34,467		25,316		9,152
- Debt Servicing	25,773		0		25,773
= Equity Surplus	8,694		25,316		-16,621
+ Capital Increment	28,720		23,406		5,314
= Equity Surplus including Capital Increment	37,414		48,722		-11,307

Financial Gearing: Total liabilities expressed as a percentage of total farm assets including working capital.

Working Capital Ratio: Cash reserves, crop on hand plus sundry debtors (current assets) related to current account overdraft plus sundry creditors (current liabilities).

Liquidity Ratio: Cash reserves including Equalisation deposits (cash assets) related to current account overdraft (cash liabilities).

Cash Flow Statement: In assessing the cash flow statement, an attempt was made to delete from the financial statement:

- (i) All non-cash transactions; and
- (ii) All current assets subject to valuation, that is, livestock and crop on hand.

APPENDIX B

PROFITABILITY ANALYSIS

Economic farm surplus is assessed as follows:

TABLE 15

Economic Farm Surplus

Group	1	2	3	4	5	All Farms
	\$	\$	\$	\$	\$	\$
Net Farm Profit	17,613	15,745	1,531	378	9,817	7,273
+ Unconsidered Revenue	5,045	5,810	6,801	5,843	5,512	5,942
= Gross Farm Income	22,658	21,555	8,332	6,221	15,329	13,215
+ Labour and Management Fee	9,743	6,606	7,501	13,218	13,057	9,870
+ Debt Servicing	17,351	21,684	23,467	29,898	37,572	35,773
+ Development Expenses	1,118	499	10,676	1,741	2,644	3,816
= Economic Farm Surplus	50,870	50,344	49,976	51,078	68,602	52,674

The following details the analyses of returns to the three factors of production, namely:

- Land: Land, buildings and improvements.
- Labour: Owner's labour and management responsibilities.
- Capital: Total farm capital and equity capital.

TABLE 16
Return to Land

Group	1	2	3	4	5	All Farms
	\$	\$	\$	\$	\$	\$
Economic Farm Surplus	50,870	50,344	49,976	51,078	68,602	52,674
- Wages of Management	18,299	18,049	17,735	18,037	19,835	18,207
- Stock and Plant Rent	17,704	14,758	16,598	17,778	20,987	17,231
= Specific Land Rent	14,867	17,537	15,643	15,263	27,780	17,236
Capital Growth in Land and Buildings	4,872	2,988	29,306	37,571	45,155	24,769
- Development Expenses	1,118	499	10,676	1,741	2,644	3,816
= Capital Increment and Buildings	3,754	2,489	18,630	35,830	42,511	20,893
Specific Land Rent including Capital Increment of Land and Buildings	18,621	20,026	34,273	51,093	70,291	38,129
Value Land and Buildings	689,375	614,381	695,979	821,522	832,458	729,349
Land Rent Return (%)	2.2	2.9	2.3	1.9	3.3	2.4
Land Rent Return including Capital Increment of Land and Buildings (%)	2.7	3.3	4.9	6.2	8.4	5.2

TABLE 17
Return to Labour and Management

Group	1	2	3	4	5	All Farms
	\$	\$	\$	\$	\$	\$
Economic Farm Surplus	50,870	50,344	49,976	51,078	68,602	52,674
- Opportunity Cost of Equity at 17.0%	125,215	103,111	115,379	134,753	136,509	122,010
- Debt Servicing	17,351	21,684	23,467	29,898	37,572	25,773
= Owner's Surplus	-91,696	-74,451	-88,870	-113,573	-105,479	-95,109
- Wages of Management	18,299	18,049	17,735	18,037	19,835	18,207
= Owner's Excess	-109,995	-92,500	-106,605	-131,610	-125,314	-113,316
Growth Total Farm Capital	19,507	1,098	40,219	40,791	66,741	32,536
- Development Expenses	1,118	499	10,676	1,741	2,644	3,816
= Capital Increment	18,389	599	29,543	39,050	64,097	28,720
Owner's Excess including Capital Increment	-91,606	-91,901	-77,062	-92,560	-61,217	-84,596

TABLE 18
Return to Capital

Group	1	2	3	4	5	All Farms
	\$	\$	\$	\$	\$	\$
Economic Farm Surplus	50,870	50,344	49,976	51,078	68,602	52,674
- Wages of Management	18,299	18,049	17,735	18,037	19,835	18,207
= Interest Surplus	32,571	32,295	32,241	33,041	48,767	34,467
Growth Total Farm Capital	19,507	1,098	40,219	40,791	66,741	32,536
- Development Expenses	1,118	499	10,676	1,741	2,644	3,816
= Capital Increment	18,389	599	29,543	39,050	64,097	28,720
Interest Surplus including Capital Increment	50,960	32,894	61,784	72,091	112,864	63,187
Total Farm Capital	848,698	753,911	860,010	1009,539	1076,283	905,239
Return to Farm Capital (%)	3.8	4.3	3.8	3.3	4.5	3.8
Return to Farm Capital including Capital Increment (%)	6.0	4.4	7.2	7.1	10.5	7.0

TABLE 19

Return to Farm Equity

Group	1	2	3	4	5	All Farms
	\$	\$	\$	\$	\$	\$
Economic Farm Surplus	50,870	50,344	49,976	51,078	68,602	52,674
- Wages of Management	18,299	18,049	17,735	18,037	19,835	18,207
- Debt Servicing	17,351	21,684	23,467	29,898	37,572	25,773
= Equity Surplus	15,220	10,611	8,774	3,143	11,195	8,694
Growth Total Farm Capital	19,507	1,098	40,219	40,791	66,741	32,536
- Development Expenses	1,118	499	10,676	1,741	2,644	3,816
= Capital Increment	18,389	599	29,543	39,050	64,097	28,720
Equity Surplus including Capital Growth	33,609	11,210	38,317	42,193	75,282	37,414
Total Farm Equity	736,560	606,538	678,705	792,665	802,995	717,710
Return to Farm Equity (%)	2.1	1.8	1.3	0.4	1.4	1.2
Return to Farm Equity including Capital Increment (%)	4.6	1.9	6.7	5.3	9.4	5.2

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