

AN ECONOMIC SURVEY
OF NEW ZEALAND WHEATGROWERS:

FINANCIAL ANALYSIS

1983-84

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RESEARCH REPORT NO. 171

August 1985

Agricultural Economics Research Unit
Lincoln College
Canterbury
New Zealand

ISSN 0069-3790

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PREFACE

This Report is the seventh 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 1983-84 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.

Dr R.G. Lattimore
Director

ACKNOWLEDGEMENTS

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 and Linda Bellamy 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 \$853,562. However the working capital deficit of \$19,888 exceeded produce on hand by \$3,100 resulting in total farm assets including working capital of \$850,463.
- 2. Total farm liabilities for the average New Zealand survey farm were \$144,799 or 17.0 percent of total farm assets including net working capital.
- 3. The capital value of land and buildings for the average New Zealand survey farm declined from \$3,840 per hectare to \$3,642 per hectare in the 1983-84 period. The value of plant and machinery remained steady while capital stock increased resulting in total farm capital declining by \$134 per hectare. This decline in value of capital assets was compounded by a \$21 per hectare increase in farm liabilities, and a decrease in working capital of \$46 per hectare. A \$33 per hectare increase in produce on hand offset the increase in liabilities but farm equity still declined by \$168 per hectare.

ADJUSTED FARM INCOME AND EXPENDITURE

- 4. Gross farm profit for the average New Zealand survey farm was \$113,797. The principal components were livestock (44 percent), wheat (18 percent) and other crops including barley, peas and small seeds (34 percent).
- 5. Expenditure of \$109,106 for the average New Zealand survey farm was made up of farm working expenses (41 percent), vehicle expenses including depreciation (27 percent) and debt servicing (20 percent).
- 6. Net farm profit for the average New Zealand survey farm was \$4,691 or 4.0 percent of gross farm profit. The highest net farm profit per hectare of \$81 was achieved on those farms where in excess of 75.0 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 \$43,360 came from direct farm trading (35 percent), increase in term liabilities (31 percent), sale of assets (20 percent) and non-farm income (14 percent).
8. Total cash disposition for the average New Zealand survey farm of \$52,051 comprised capital expenditure (44 percent), personal expenditure (38 percent) and loan repayments (18 percent).
9. The average cash deficit of \$8,691 was financed by an increase in sundry debtors of \$1,427, a net decrease in current account at the stock firm and bank of \$10,958, offsetting an increase in sundry creditors of \$620 and deposits with the Income Equalisation Scheme of \$220.
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 \$3,406. The principal reasons for the difference between the cash deficit and adjusted cash deficit was a decrease in the value of livestock of \$846 offset by an increase in wool of \$29 and crop on hand of \$6,102.
11. Those farms with less than 5.0 per cent of gross profit from crop had a cash deficit of \$6,473 offset by a \$1,705 increase in inventory resulting in an adjusted cash deficit of \$5,398. Farms with 5 to 24 percent of gross farm profit from crop had a cash deficit of \$4,661 and an inventory decline of \$1,249 resulting in an adjusted cash deficit of \$5,910. Farms with 25 to 49 percent of gross profit from crop had a cash deficit of \$7,138 but this was offset by a \$3,093 increase in livestock and crop on hand to give an adjusted cash deficit of \$4,045. Farms with 50 to 74 percent of gross farm profit from crop showed a cash deficit of \$12,542. An increase in the value of livestock and crop on hand of \$6,126 offset this deficit with the result that the adjusted cash deficit was assessed at \$6,416. Farms with 75 percent or more of gross farm profit from crop showed a cash deficit of \$11,187. A net increase in the value of livestock and crop on hand at \$20,696 offset this deficit with the result that the adjusted cash surplus was assessed at \$9,509.

ECONOMIC INDICATORS

12. The return on total farm capital for the average New Zealand survey farm was 3.0 percent and the return on farm equity of 0.6 percent. Farms with less than 5.0 percent of their gross farm profit from crop had a return on capital of 4.6 percent. Those farms with 50 to 74 percent of gross farm profit from crop showed a 2.3 percent return on capital while for those with above 75 percent of gross farm profit from crop the return on farm capital was 4.6 percent.

13. When adjusted for changes in farm capital the return on farm capital varied from 3.3 percent in group 1 to -2.7 percent for group 4 farms. The return to farm equity adjusted for capital growth varied from 0.2 percent in group 1 to -5.9 percent in group 4 farms indicating that the changes in farm capital compounded 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 1983-84 wheat enterprise survey.¹ The analysis was based upon the annual financial statements prepared for wheatgrowers by their accountants.

Farm accounts for the 1983-84 financial year were collected following the farm visit in 1985. 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 185 farms in the 1983-84 New Zealand wheat enterprise survey, 53 percent provided financial statements suitable for analysis, 5 percent provided financial statements unsuitable for analysis because of insufficient information while 42 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.

TABLE 1

Farm Groups

Crop Income as Percentage of Gross Farm Profit			
Group	Range (%)	Average (%)	Number of Farms (No.)
1	Below 5	1.2	7
2	5-24	16.4	25
3	25-49	42.1	22
4	50-74	69.2	30
5	75 and above	86.8	14
All Farms		52.6	98

TABLE 2

Physical Farm Characteristics

Group	1	2	3	4	5	All Farms
Total Area (ha)	369.6	207.0	181.3	163.4	184.0	196.2
Effective Area (ha)	356.5	196.9	177.1	154.0	180.3	188.4
Stock Units (No. at Start of Year)	4310	2273	1855	1246	583	1769
Wheat Area (ha)	0	9.4	15.0	30.0	33.0	19.7
Barley Area (ha)	4.6	8.3	18.6	28.0	39.4	20.8
Oats Area (ha)	0.7	0.7	2.8	1.8	2.6	1.8
Pea Area (ha)	0	0.4	3.4	8.8	18.2	6.1
Small Seed Area (ha)	0	0.8	3.0	16.2	43.9	12.1
Other Crop Area (ha) ^a	0	0	0.9	3.9	10.2	2.9
Crop Area (% of Effective Area)	1.5	9.9	24.7	57.6	81.7	33.7

^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 1983-84 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 \$830,351; (Table 3) 83 percent of total farm assets were invested in land and buildings, 15 percent in livestock and plant and 2 percent in crop on hand (Table 3). Current liabilities exceeded current assets resulting in a working capital deficit of \$19,888. Total farm assets including working capital therefore amounted to \$850,463. Group 5 farms had the highest level of farm assets including working capital at \$1,005,635 this being nearly 35.0 percent higher than Group 2 farms.

2.2 Farm Liabilities

Total farm liabilities on the average New Zealand survey farm were assessed at \$144,799 (Table 3). The two main sources of farm liabilities in order of importance were private lenders including solicitors (53.0 percent of total farm liabilities) and the Rural Bank (22.2 percent of total farm liabilities).

Group 1 farms influenced by substantial borrowing from private resources had the highest level of farm liabilities at \$218,491. Group 5 farms borrowed \$180,554 but only 26.0 percent came from private resources. This level of total borrowing was 80.0 percent higher than Group 2 farms at \$99,115 with 63.0 percent coming from private sources.

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	779,827	635,539	657,424	766,184	863,844	723,366
Tractor, Truck, Header	36,265	37,543	52,713	76,229	92,144	60,500
Other Plant	14,985	18,786	20,616	35,574	37,305	26,710
Sheep	82,122	45,283	37,264	24,116	11,024	34,740
Cattle	45,076	11,998	2,813	406	14	7,038
Other	0	108	4,390	310	696	1,208
Total Farm Capital	958,275	749,257	775,220	902,819	1,005,027	853,562
Produce on Hand						
Wheat	404	3,296	6,399	5,597	13,646	5,969
Barley	407	300	3,888	6,464	4,143	3,549
Peas	0	0	0	1,785	3,011	976
Small Seeds	0	220	1,095	6,694	17,689	4,878
Other Crops	0	106	464	377	3,497	746
Wool	4,847	370	282	542	0	670
Total Produce	5,658	4,292	12,128	21,459	41,986	16,788
Total Farm Assets	963,933	753,549	787,348	924,278	1,047,013	870,350
Working Capital						
Bank	-9,904	-4,741	-1,581	-9,746	-38,997	-10,826
Stock Firm	-6,985	-782	-5,631	-11,060	-11,426	-6,981
Equalisation Deposits	3,429	1,180	68	0	0	561
Sundry Debtors	7,001	5,011	2,728	4,259	17,430	6,185
Sundry Creditors	10,543	7,949	5,214	12,014	8,385	8,827
Working Capital	-17,002	-7,281	-9,630	-28,561	-41,378	-19,888
Total Farm Assets Including Working Capital	946,931	746,268	777,718	895,717	1,005,635	850,462

(Table 3 Cont.)

TABLE 3 (Cont.)

Capital Structure

Group	1	2	3	4	5	All Farms
	\$	\$	\$	\$	\$	\$
Farm Liabilities						
Fixed Liabilities						
Rural Bank	25,418	12,751	38,861	41,144	40,473	32,169
Govt. Agencies other than Rural Bank	0	3,740	258	2,137	26,283	5,421
Commercial Bank	9,350	5,931	10,299	5,219	13,284	7,988
Insurance Co.	16,145	5,183	4,843	15,621	8,505	9,560
Stock Firm	0	2,800	1,000	833	11,068	2,775
Private	159,123	62,823	44,125	79,995	46,957	68,494
County Council	0	996	1,367	1,925	127	1,168
Hire Purchase	143	1,824	3,123	6,701	2,374	3,567
Other Financial Institutions	0	2,975	9,024	333	13,722	4,849
Solicitors	8,312	92	4,568	13,291	17,750	8,247
Sub Total	218,491	99,115	117,468	167,199	180,554	144,238
Specific Reserves	3,429	1,180	68	0	0	561
Total Farm Liabilities	221,920	100,295	117,536	167,199	180,554	144,799
Farm Equity	725,011	645,973	660,182	728,518	825,081	705,663
Non-Farm Assets						
Personal Assets	0	0	2,230	0	670	596
Investments	5,932	8,970	15,863	12,147	6,658	10,943
Total Non-Farm Assets	5,932	8,970	18,093	12,147	7,328	11,539
Net Worth	730,943	654,943	678,275	740,665	832,409	717,202

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 1983-84 is given in Table 4. Total farm capital on the average New Zealand survey farm was \$4,531 per hectare at the start of the financial year. This decreased by \$134 per hectare during the year to \$4,397 per hectare. The value of produce on hand increased by \$33 per hectare but the working capital position declined by \$46 per hectare to compound the decline in farm capital with the result that total farm assets adjusted for working capital declined by \$147 per hectare over the twelve month period to \$4,367 per hectare. Farm liabilities, however, increased by \$21 per hectare from \$769 to \$790 per hectare with the result that farm equity declined from \$3,745 per hectare to \$3,577 per hectare over the twelve month period. Farm equity expressed as a percentage of total farm assets including working capital declined from 83.0 percent at the start of the year to 81.9 percent by the end. However, the liquidity position, assessed as unsold produce less net working capital, improved from a deficit of \$17 per hectare at the start of the year to a deficit of \$13 per hectare at the end of the year.

Non-farm assets on average declined by \$3 per hectare over the year with only Group 1 and 2 farms 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	2,188	3,228	3,712	4,975	4,791	3,840
Livestock	357	291	251	161	65	228
Plant and Machinery	144	286	414	726	718	463
Total Farm Capital	2,689	3,805	4,377	5,862	5,574	4,531
Produce on Hand	16	22	68	139	233	89
Working Capital	-48	-37	-54	-185	-230	-106
Total Farm Assets Including Working Capital	2,657	3,790	4,391	5,816	5,577	4,514
Total Farm Liabilities	623	509	664	1,086	1,001	769
Farm Equity	2,034	3,281	3,727	4,730	4,576	3,745
Non-Farm Assets	17	46	102	79	41	61
Net Worth	2,051	3,327	3,829	4,809	4,617	3,806
<u>End of Year</u>						
Capital Value						
Land and Buildings	2,068	3,080	3,537	4,705	4,521	3,642
Livestock	452	373	325	206	83	292
Plant and Machinery	138	278	442	699	749	463
Total Farm Capital	2,658	3,731	4,304	5,610	5,353	4,397
Produce on Hand	18	20	93	188	346	122
Working Capital	-66	-61	-95	-267	-292	-152

(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	2,610	3,690	4,302	5,531	5,407	4,367
Total Farm Liabilities	583	526	686	1,121	1,064	790
Farm Equity	2,207	3,164	3,616	4,410	4,343	3,577
Non-Farm Assets	29	52	85	76	18	57
Net Worth	2,056	3,216	3,701	4,486	4,361	3,634
<u>Changes of the Year to:</u>						
Total Farm Capital	-31	-74	-73	-252	-221	-134
Produce on Hand	2	-2	25	49	113	33
Working Capital	-18	-24	-41	-82	-62	-46
Total Farm Assets Including Working Capital	-47	-100	-89	-285	-170	-147
Total Farm Liabilities	40	-17	-22	-35	-63	-21
Farm Equity	-7	-117	-111	-320	-233	-168
Non-Farm Assets	12	6	-17	-3	-23	-4
Net Worth	5	-111	-128	-323	-256	-172
<u>Capital Ratios:</u>						
Farm Equity as Percentage of Total Farm Assets Including Working Capital						
Start of Year (%)	76.6	86.6	84.9	81.3	82.1	83.0
End of Year (%)	77.7	85.8	84.1	79.7	80.3	81.9
Produce on Hand less Working Capital						
Start of Year (\$)	-32	-15	14	-46	3	-17
End of Year (\$)	-48	-41	-2	-79	54	-13

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 \$113,797 of which 44 percent came from livestock production. The other sources of income were wheat (18 percent) and other crops including barley, peas and small seeds (35 percent). Gross farm profit increased with increasing crop intensity; gross farm profit of \$180,610 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 \$25 per stock unit on Group 4 properties to \$35 per stock unit on Group 5 properties. However the high return per stock unit on Group 5 properties was offset by low carrying capacity which resulted in the lowest return per hectare of pasture for all five farm groups.
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 \$821 per hectare of wheat grown on Group 2 properties to \$1,189 per hectare of wheat grown on Group 5 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 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	43,616	30,257	24,820	14,920	7,550	22,052
Sheep	49,906	43,228	35,198	23,737	19,097	32,488
Cattle	28,802	5,920	2,420	824	1,640	4,597
Deer/Goats	1,643	1,000	343	0	1,625	682
Wheat	0	7,713	17,119	30,806	39,252	20,848
Barley	1,444	4,741	16,235	23,736	44,960	18,646
Peas	0	561	3,364	7,266	18,967	5,833
Small Seeds	0	348	1,487	12,060	30,927	8,533
Other Crops	0	797	2,002	6,965	22,696	6,027
Rebates/Subsidies	983	1,526	687	507	1,043	918
Produce, Milk, Pigs	0	304	3	1,789	154	648
Sundry - Hay, Grazing	0	2,196	860	2,437	1,883	1,768
Sub Total	126,394	98,591	104,538	125,047	189,794	123,040
Less Livestock Purchases						
Sheep	2,097	9,444	7,773	8,116	6,956	7,782
Cattle	162	1,981	1,197	64	902	934
Other	558	1,012	0	130	1,326	527
Total Purchases	2,817	12,437	8,970	8,310	9,184	9,243
Gross Farm Profit	123,577	86,154	95,568	116,737	180,610	113,797

(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	21,163	11,178	8,693	12,417	16,170	12,426
Animal Health	2,917	2,267	1,891	1,235	899	1,718
Seed and Fertiliser	8,855	7,421	8,988	12,667	24,241	11,884
Freight	1,447	1,960	1,906	3,131	4,669	2,657
Chemicals	3,316	1,694	2,543	9,578	18,201	6,772
Other	8,565	8,399	8,834	9,593	14,877	9,799
Sub Total	46,263	32,919	32,855	48,621	79,057	45,256
Repairs and Maintenance	5,874	5,889	4,710	4,360	3,813	4,859
Tractor and Vehicle						
Repairs and						
Maintenance	7,782	5,003	6,361	8,092	10,668	7,261
Fuel and Oil	5,091	5,448	6,601	9,095	11,063	7,600
Admin., Rates,						
Insurance	8,170	6,233	6,148	7,166	8,453	6,955
Debt Servicing	30,155	15,740	16,468	23,567	30,165	21,390
Total Cash						
Expenditure	103,335	71,232	73,143	100,901	143,219	93,321
Depreciation						
Buildings	1,008	1,035	1,147	1,058	1,337	1,108
Motorised Plant	7,253	7,509	10,543	15,219	17,825	12,006
Non-Motorised Plant	1,499	1,879	2,062	3,557	3,730	2,671
Gross Farm						
Expenditure	113,095	81,655	86,895	120,735	166,111	109,106
Net Farm Profit						
- \$	10,482	4,499	8,673	-3,998	14,499	4,691
- % Gross Farm Profit	8.5	5.2	9.1	-3.4	8.0	4.1
Used as Follows:						
Personal Drawings	12,850	13,764	12,220	14,821	14,704	13,810
Taxation	3,354	4,769	4,133	2,595	4,454	3,815
"Savings"	-5,722	-14,034	-7,680	-21,414	-4,659	-12,934

TABLE 6

Gross Farm Profit - Enterprise Analysis

Group	1	2	3	4	5	All Farms
	\$	\$	\$	\$	\$	\$
Gross Farm Profit:						
Livestock (\$/ha)	340	345	304	202	115	268
Wheat (\$/ha)	0	39	97	200	218	111
Other Crops (\$/ha)	4	33	130	325	652	207
Sundry (\$/ha)	3	20	9	31	17	18
Total Gross Farm Profit (\$/ha)	347	437	540	758	1,002	604
Livestock (\$/stock unit)	29	30	29	25	35	29
Livestock (\$/ha Pasture)	345	382	395	382	270	369
Wheat (\$/ha wheat grown)	0	821	1,141	1,027	1,189	1,058
Other Crops (\$/ha other crops grown)	272	632	804	852	1,028	393

3.2 Gross Farm Expenditure

Table 5 shows gross farm expenditure for the average New Zealand survey farm to be \$109,106; the main components are farm working expenses (41 percent), tractor and vehicle expenses including depreciation (27 percent) and debt servicing (20 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 two and a half times greater than the farm working expenses on Group 2 farms, debt servicing was twice that of Group 2 farms while tractor and vehicle expenses were nearly two and a quarter 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 \$4,691 or 4 percent of gross farm profit. Personal drawings and taxation exceeded this net farm profit thereby resulting in a deficit per farm of \$12,934.

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	59	57	49	81	90	66
Animal Health	8	12	10	8	5	9
Seed and Fertiliser	25	38	51	82	134	63
Freight	4	10	11	20	26	14
Chemicals	9	8	14	62	101	36
Other	24	42	50	62	82	52
Sub-Total	129	167	185	315	438	240
Repairs and Maintenance	16	30	27	28	21	25
Tractor and Vehicle Expenses:						
Repairs and Maint.	22	25	36	53	59	39
Fuel and Oil	14	28	37	59	61	40
Admin., Rates, Insurance	23	32	35	47	47	37
Debt Servicing	85	80	93	153	168	114
Total Cash Expenditure	289	362	413	655	794	495
Depreciation	28	53	78	129	127	84
Gross Farm Expenditure	317	415	491	784	921	579

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 \$25. At \$81 per hectare Group 5 farms have the highest net farm profit. Group 4 farms with a loss of \$26 per hectare produced the lowest net farm profit per hectare.

Personal expenditure and taxation, which on the average New Zealand survey farm amounted to \$93 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	347	437	540	758	1,002	604
less Gross Farm Expenditure	317	415	491	784	921	579
Net Farm Profit	30	22	49	-26	81	25
Used as Follows:						
Personal Drawings	36	70	69	96	82	73
Taxation	9	24	23	17	25	20
"Savings"	-15	-72	-43	-139	-26	-68

CHAPTER 4

CASH FLOW STATEMENT

The liquidity position for wheat growing farms in New Zealand for the 1983/84 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 \$43,360, 35 percent of which came from direct farm trading. The other sources of available cash were an increase in farm liabilities (31 percent), sale of assets (20 percent) and non-farm income (14 percent). Total cash disposition on the average New Zealand survey farm was \$52,051. The components of this expenditure were capital expenditure (44 percent), personal expenditure (38 percent) and loan repayments (18 percent). An increase in the value of produce and crop on hand at the end of the year offset the cash deficit of \$8,671. Livestock on hand decreased by \$846, wool increased by \$29, while crop on hand increased by \$6,102 giving an increase in total inventory of \$5,285 and an adjusted cash deficit of \$3,406.

In Group 1 the cash surplus from farming covered personal drawings, taxation and 65.0 per cent of sundry investments. The balance of sundry investments, loan repayments and capital expenditure amounting to \$21,208 was financed by sale of assets of \$840 and non farm income of \$13,895 leaving a cash deficit on current account of \$6,473. This cash deficit was partly offset by an increase in the value of produce on hand estimated to be \$1,075. Loan repayments exceeded increased borrowings by \$12,174.

In Group 2 the cash surplus from farming covered personal drawings and half the tax due. The balance of the tax, sundry investments, loan repayments and capital expenditure amounting to \$23,925 was financed by increasing fixed liabilities by \$10,504, sale of assets amounting to \$3,526 and non farm income of \$5,234. The current account cash deficit of \$4,661 was compounded by a decline in the value of livestock on hand at the end of the year estimated at \$1,087 and a decline in the value of crop on hand estimated at \$162. The cash deficit adjusted for the change in livestock and produce on hand is therefore assessed at \$5,910. The increase in borrowed funds offset loan repayments by \$3,314.

In Group 3 the cash surplus from farming covered personal drawings, taxation, sundry investments and 13.0 percent of the loan repayments. The balance of the loan repayments and capital expenditure amounting to \$33,029 was financed by an increase in fixed liabilities of \$13,309, sale of assets amounting to \$9,979 and non farm income of \$2,603 resulting in a current account cash deficit of \$7,138. While the value of livestock on hand at the end of the year declined by \$1,146 the value of crop on hand increased by \$4,239, leaving a cash

TABLE 9

Cash Flow Statement

	1		2		3		4		5		All Farms	
	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%
Cash Sales												
Wool	42,663		30,435		24,734		14,963		7,550		22,023	
Sheep	51,859		43,051		36,279		25,380		18,642		33,263	
Cattle	27,887		8,006		2,471		599		2,137		5,078	
Deer/Goats	0		0		443		0		1,277		282	
Wheat	404		8,708		14,614		23,970		33,584		17,666	
Barley	1,523		3,932		14,777		19,479		34,307		15,293	
Peas	0		561		3,259		8,818		20,692		6,530	
Small Seeds	0		248		1,429		13,766		27,178		8,481	
Other Crops	0		873		1,889		7,213		20,720		5,815	
Rebates and Subsidies	983		1,526		687		507		1,043		918	
Sundry - Produce	0		304		3		1,789		85		638	
- Hay, Grazing	0		2,196		860		2,437		1,883		1,768	
1 Total Cash Farm Income	125,319		99,840		101,445		118,921		169,098		117,755	
Stock Purchases	2,817		12,437		8,970		8,310		9,184		9,243	
Cash Farm Expenditure	103,335		71,232		73,143		100,901		143,219		93,321	
2 Total Cash Expenditure	106,152		83,669		82,113		109,211		152,403		102,564	
Cash Surplus from Farming (1-2)	19,167	56.5	16,171	45.6	19,332	42.8	9,710	24.8	16,695	24.4	15,191	35.0
Non-Farm Income:												
Contracting	534		1,500		1,474		3,770		1,459		2,114	
Interest, Fees, etc.	1,554		1,471		611		1,404		1,635		1,287	
Insurance Claims, etc.	11,754		1,941		410		3,619		915		2,665	
Tax Refunds	53	41.0	322	14.8	108	5.8	166	22.9	45	5.9	167	14.4
Increase in Farm Liabilities:												
Rural Bank	0		1,046		4,626		6,098		3,380		3,655	
Private	0		3,021		482		1,624		3,814		1,921	
Other	0		6,437	29.6	8,201	29.4	5,393	33.5	17,462	36.1	7,629	30.5
Sale of Assets:												
Mechanised	126		1,948		4,449		4,428		15,973		5,142	
Non Mechanised Plant	714		223		831		895		2,084		866	
Investments	0	2.5	1,355	10.0	4,699	22.0	2,046	18.8	4,871	33.6	2,723	20.1
3 Total Available Cash	33,902	100.0	35,435	100.0	45,223	100.0	39,153	100.0	68,332	100.0	43,360	100.0

(Table 9 cont.)

TABLE 9 (cont.)

Cash Flow Statement

	1		2		3		4		5		All Farms	
	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%
Capital Expenditure:												
Buildings	0		1,688		1,870		4,135		948		2,251	
Merchanised Plant	4,064		4,399		15,399		11,535		35,662		13,495	
Other Plant	3,379		3,221		7,353		6,438		7,700		5,785	
Car	0	18.4	2,358	29.1	0	47.0	2,012	46.7	1,786	58.0	1,472	44.2
Loan Repayments:												
Rural Bank	3,633		395		1,466		1,306		1,807		1,348	
Private	143		3,292		5,243		1,957		1,208		2,798	
Other	8,398	30.2	3,503	17.9	2,955	18.5	5,366	16.7	10,437	16.9	5,290	18.1
Personal Expenditure:												
Personal Drawings	12,850		13,764		12,220		14,821		14,704		13,810	
Taxation	3,354		4,769		4,133		2,595		4,454		3,815	
Sundry Investments	4,554	51.4	2,708	53.0	1,722	34.5	1,530	36.6	813	25.1	1,987	37.7
4 Total Cash Disposition	40,375	100.0	40,097	100.0	52,361	100.0	51,695	100.0	79,519	100.0	52,051	100.0
5 Cash Surplus/Deficit	-6,473		-4,661		-7,138		-12,542		-11,187		-8,691	
Change in Produce on Hand:												
Livestock: Sheep	-1,953		177		-1,081		-1,643		455		-775	
Cattle	915		-2,086		-51		225		-497		-481	
Deer, Goats and Other	1,643		1,000		-100		0		417		410	
Wool	953		-178		86		-43		0		29	
Crop: Wheat	-404		-995		2,505		6,836		5,668		3,182	
Barley	-79		809		1,458		4,257		10,653		3,353	
Peas	0		0		105		-1,552		-1,725		-697	
Small Seeds	0		100		58		-1,706		3,749		52	
Other	0		-76		113		-248		1,976		212	
6 Total Inventory Change	1,075		-1,249		3,093		6,126		20,696		5,285	
7 Adjusted Cash Surplus/Deficit (5+6)	-5,398		-5,910		-4,045		-6,416		9,509		-3,406	

deficit adjusted for inventory change of \$4,045. The increase in borrowed funds exceeded loan repayments by \$3,645.

In Group 4 the cash surplus from farming covered two thirds of personal drawings only. The balance of personal drawings, taxation, sundry investments, loan repayments and capital expenditure totalling \$41,985 was financed by increased fixed liabilities of \$13,315, sale of assets amounting to \$7,369 and non farm income of \$8,959 resulting in a current account deficit of \$12,542. This cash deficit was offset by an increase in produce on hand at the end of the year resulting in a cash deficit adjusted for inventory change of \$6,416. The increase in fixed liabilities exceeded loan repayments by \$4,486.

In Group 5 the cash surplus from farming covered personal drawings and 45 percent of the tax due. The balance of the tax, sundry investments, loan repayments and capital expenditure amounting to \$62,824 was financed by increased term borrowing of \$24,656, sale of assets amounting to \$22,928 and non farm income of \$4,054 leaving a deficit funded by the current account of \$11,187. This current account deficit was offset against an increase in livestock of \$375 and produce valued at \$20,321 resulting in a surplus of \$9,509 after adjustments for the change in inventory.

4.2 Financing the Cash Deficit

Table 10 shows that the deficit in working capital on the average New Zealand survey farm was financed by a net \$10,958 decrease in cash resources held in Bank and Stock Firm current accounts, offset by increases of \$220 in Income Equalisation deposits, of \$620 in sundry creditors and of \$1,427 in sundry debtors.

TABLE 10

Financing the Change in Working Capital

Group	1	2	3	4	5	All Farms
	\$	\$	\$	\$	\$	\$
Changes of Funds in Current Account						
Bank	-2,607	669	-2,421	-6,566	-9,470	-3,922
Stock Firm	-3,852	-4,352	-7,056	-11,804	-3,174	-7,036
Sundry Debtors	2,041	-1,273	4,361	1,987	135	1,427
Income Equalisation Deposits	-2,143	-80	387	1,000	0	220
Sundry Creditors	88	375	-2,409	2,841	1,322	620
Cash Surplus/Deficit	-6,473	-4,661	-7,138	-12,542	-11,187	-8,691

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 \$604 per hectare, when adjusted for unconsidered revenue items gave a gross farm income of \$635 per hectare. Gross farm expenditure assessed at \$579 per hectare when adjusted for debt servicing and unconsidered expenditure gave total farm expenses of \$405 per hectare. Economic farm surplus (gross farm income less total farm expenses) was therefore assessed at \$230 per hectare.

The economic farm surplus increased with increasing crop intensity being \$175 per hectare for Group 1 farms increasing to \$365 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 2.0 percent which decreased to -3.4 percent when adjusted for the capital increment associated with land and buildings. Land rent returns varied from Group 4 farms which showed a 1.1 percent return to Group 5 properties which showed a return of 3.9 percent. When the land rent was adjusted for capital growth the land rent return ranged from -5.6 percent on Group 4 farms to -1.7 percent on Group 5 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 14.1 percent per annum (weighted average of interest charged on current account deficits).

TABLE 11

Economic Indicators

Group	1	2	3	4	5	All Farms
<u>Financial Productivity</u>						
Gross Farm Profit \$/ha	347	437	540	758	1,002	604
+ Unconsidered Revenue \$/ha	17	28	35	38	31	31
= Gross Farm Income	364	465	575	796	1,033	635
Gross Farm Expenditure \$/ha	317	415	491	784	921	579
- Debt Servicing \$/ha	85	80	93	153	168	114
- Unconsidered Expenditure	43	51	40	82	85	60
= Total Farm Expenses	189	284	358	549	668	405
Economic Farm Surplus \$/ha	175	181	217	247	365	230
Expenditure Ratio	0.52:1	0.61:1	0.62:1	0.69:1	0.65:1	0.64:1
<u>Returns to Factors of Production</u>						
<u>Return to Land (%)</u>						
Specific Land Rent Return	3.5	1.3	1.7	1.1	3.9	2.0
Land Rent Return Including Capital Increment of Land and Buildings	-2.2	-3.6	-3.2	-5.6	-1.7	-3.4
<u>Return to Labour and Management (\$)</u>						
Owner's Surplus	-70,222	-71,071	-71,053	-88,206	-80,882	-77,652
Wages of Management	17,995	16,948	17,345	17,135	19,337	17,511
Owner's Excess	-88,217	-88,019	-88,398	-105,341	-100,219	-95,163
Owner's Excess Return Including Capital Increment	-100,648	-104,554	-102,507	-145,619	-140,249	-121,985
<u>Return to Capital (%)</u>						
Return to Capital	4.6	2.5	2.7	2.3	4.6	3.0
Return to Farm Capital Including Capital Increment	3.3	0.3	0.9	-2.1	0	-0.1

Table 11 (Cont.)

TABLE 11 (Cont.)

<u>Economic Indicators</u>						
Group	1	2	3	4	5	All Farms
<u>Return to Equity (%)</u>						
Return to Farm Equity	1.9	0.5	0.7	-0.4	1.9	0.6
Return to Farm Equity Including Capital Increment	0.2	-2.1	-1.4	-5.9	-2.9	-3.1
<u>Financial Stability</u>						
Capital Increment:						
Total Farm Capital (\$/ha)						
Start of Year	2,689	3,805	4,377	5,862	5,574	4,531
End of Year	2,658	3,731	4,304	5,610	5,353	4,397
Working Capital (including Produce on Hand) (\$/ha)						
Start of Year	-32	-15	14	-46	3	-17
End of Year	-48	-41	-2	-79	54	-30
Total Farm Liabilities (\$/ha)						
Start of Year	623	509	664	1,086	1,001	769
End of Year	583	526	686	1,121	1,064	790
Farm Equity (\$/ha)						
Start of Year	2,034	3,281	3,727	4,730	4,576	3,745
End of Year	2,027	3,164	3,616	4,410	4,343	3,577
Liquidity:						
Financial Gearing (%)						
Start of Year	23.5	13.4	15.1	18.7	17.9	17.0
End of Year	22.3	14.3	15.9	20.3	19.7	18.1
Working Capital Ratio						
Start of Year	0.59:1	0.78:1	1.20:1	0.78:1	1.01:1	0.88:1
End of Year	0.49:1	0.52:1	0.99:1	0.75:1	1.14:1	0.85:1
Liquidity Ratio						
Start of Year	0.20:1	0.21:1	0.01:1	N/A	N/A	0.03:1
End of Year	0.06:1	0.12:1	0.03:1	0.03:1	N/A	0.03:1

The average New Zealand survey farm owner's surplus was \$77,652 less than if he had invested his equity in another form of investment returning 14.1 percent. If the opportunity cost of the owner's labour is valued at \$17,511 (wages of management) then the owner's excess, that is, the return to the owner's management, was \$95,163 less than the opportunity cost of an alternative form of investment. If the capital increment was also included this return was \$121,485 less than the alternative form of investment. The owner's excess adjusted for capital increment ranged from \$100,648 deficit in Group 1 to \$145,619 deficit in Group 4.

5.1.4 Return to Capital

The average New Zealand survey farm's return to capital was 3.0 percent and return to farm equity was 0.6 percent. This would indicate that debt servicing amounting to \$114 per hectare exceeded incremental production resulting from this level of borrowing by \$76 per hectare (Basis of assessment given in Appendix A 13). Group 1 farms showed a 4.6 percent return to capital and a return to equity of 1.9 percent indicating that debt servicing of \$85 per hectare exceeded incremental production from this level of borrowing by \$44 per hectare.

Group 2 farms showed 2.5 percent return to capital and a 0.3 percent return to equity indicating that debt servicing of \$80 per hectare exceeded incremental production from this level of borrowing by \$55 per hectare.

Group 3 farms showed a 2.7 percent return to capital and a return to farm equity of 0.7 percent. Debt servicing of \$95 per hectare therefore exceeded incremental production resulting from this level of borrowing by \$63 per hectare. Group 4 farms showed a 2.3 percent return to capital and a return to farm equity of minus 0.4 percent. Debt servicing of \$153 per hectare therefore exceeded incremental production resulting from this level of borrowing by nearly \$108 per hectare.

Group 5 farms showed a 4.6 percent return to capital and a 1.9 percent return to equity. Debt servicing at \$168 per hectare therefore exceeded incremental production from this level of borrowing by \$106 per hectare.

When adjusted for capital increment, return to capital for the average New Zealand survey farm was minus 0.1 percent while the return to farm equity was minus 3.1 percent indicating that the decline in the value of total farm capital only compounded 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 1984.

5.2.1 Capital Growth

The average New Zealand survey farm showed a decline in farm capital of \$134 per hectare. This was compounded by a \$13 per hectare decline in the net working capital position and a \$21 per hectare increase in farm liabilities resulting in farm equity declining by \$168 per hectare.

5.2.2 Liquidity

Due to the increase in farm liabilities and declining value of total farm capital, financial gearing for the average survey farm declined from 17.0 percent at the start of the year to 18.1 percent at the end of the year. All groups except Group 1 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 12 percent at the start of the year and by 15 percent 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 1983-84 and the previous year 1982-83. 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, increased by 21.0 percent over the previous year to \$4,514 per hectare, while total farm liabilities increased by 9.4 percent to \$769 per hectare. This resulted in farm equity increasing from \$3,027 to \$3,745 per hectare. Start of financial year figures have been used in this comparison. Declining land values are reflected in end of year figures (see Table 4).

6.2 Gross Farm Profit and Expenditure

Table 13 shows that a 14.4 percent increase in gross profit from crops other than wheat offset the decline from other enterprises such that total gross farm profit increased by 0.7 percent to \$604 per hectare. Gross farm expenditure increased by 5.7 percent to \$579 per hectare. These movements caused net farm profit to decline by 51.9 percent from \$52 per hectare to \$25 per hectare.

6.3 Cash Flow Statement

Table 14 shows that a 4.0 percent decline in cash farm income to \$625 per hectare was compounded by a 1.1 percent increase in cash farm expenditure. The cash surplus from farming declined by 28.3 percent to \$81 per hectare. Non-farm income increased by 50.0 percent, farm liabilities declined by 16.7 percent and the sale of assets more than doubled resulting in a 4.2 percent decline in total available cash to \$230 per hectare (from \$240 per hectare in 1982/83).

The total disposition of cash resources increased by 13.6 percent to \$276 per hectare. The major factors contributing to this situation were a 27.1 percent increase in capital expenditure, and a 31.6 percent increase in loan repayments. The 1982-83 cash deficit of \$3 per hectare was increased to a cash deficit of \$46 per hectare in 1983-84. This cash deficit was offset by an increase in the value of crop and livestock on hand estimated at \$28 per hectare. This resulted in an adjusted deficit of \$18 per hectare, significantly different from the \$11 per hectare surplus in 1982-83.

TABLE 12

Capital Structure Comparisons
(at start of year)

	1978-79 \$/ha ⁴	1980-81 \$/ha	1981-82 \$/ha	1982-83 \$/ha	1983-84 \$/ha	Change 1982-83 to 1983-84 (%)
Land & Buildings	1,337	1,841	2,407	3,103	3,840	22.9
Plant & Machinery	107	277	317	403	463	14.9
Livestock	232	298	278	254	228	-10.2
Total Farm Capital	1,676	2,416	3,002	3,760	4,531	20.5
Plus Crop on Hand	42	54	67	89	89	0
Working Capital	-49	-62	-86	-119	-106	10.9
Total Farm Capital inc. Working Capital	1,669	2,408	2,983	3,730	4,514	21.0
Total Farm Liabilities	313	441	542	703	769	9.4
Farm Equity	1,356	1,967	2,441	3,027	3,745	23.7
Non-Farm Assets	46	43	52	37	61	64.8
Net Worth	1,402	2,010	2,493	3,064	3,806	24.2

4 Effective hectares

TABLE 13

Gross Farm Profit and Expenditure Comparisons

	1978-79	1980-81	1981-82	1982-83	1983-84	Change 1982-83 to 1983-84
	\$/ha ⁴	\$/ha	\$/ha	\$/ha	\$/ha	\$/ha
<hr/>						
Gross Farm Profit						
Livestock	155	243	287	280	268	-4.3
Wheat	52	96	91	113	111	-1.8
Other Crops	57	86	125	181	207	14.4
Sundry	13	16	19	26	18	-30.8
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Total	277	441	522	600	604	0.7
Gross Farm Expenditure						
Farm Working Expenses	94	166	199	225	240	6.7
Repairs and Maintenance	16	24	36	33	25	-24.2
Tractor & Vehicle Expenses	30	51	58	73	79	8.2
Admin & Rates	17	26	29	37	37	0
Debt Servicing	39	63	78	106	114	7.6
Depreciation	24	51	59	74	84	13.5
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Total	220	381	459	548	579	5.7
Net Farm Profit	57	60	63	52	25	-51.9
Used as Follows						
Personal Drawings	38	51	64	68	73	
Taxation	18	24	28	24	20	
"Savings"	1	-15	-29	-40	-68	
<hr/>						

4 Effective hectares

TABLE 14

Cash Flow Statement Comparisons

	1978-79 \$/ha ⁴	1980-81 \$/ha	1981-82 \$/ha	1982-83 \$/ha	1983-84 \$/ha	Change 1982-83 to 1983-84 (%)
Total Cash Farm Income	314	470	583	651	625	-4.0
Total Cash Farm Expenses	240	380	459	538	544	1.1
Cash Surplus from Farming	74	90	124	113	81	-28.3
Non-Farm Income	15	21	24	22	33	50.0
Increase in Farm Liabilities	34	50	63	84	70	-16.7
Sale of Assets	22	22	32	21	46	119.0
Total Available Cash	145	183	243	240	230	-4.2
Capital Expenditure	65	92	115	96	122	27.1
Loan Repayments	23	23	25	38	50	31.6
Personal Expenditure	66	86	110	109	104	-4.6
Total Cash Disposition	154	201	250	243	276	13.6
Cash Surplus/ Deficit	-9	-18	-7	-3	-46	
Inventory Change	7	22	-3	14	28	
Adjusted Surplus/ Deficit	-2	4	-10	11	-18	

4 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 1983-84 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 1983-84 financial year: (Source: N.Z. Farmer Stock Report).

		North Island Canterbury and South Canterbury		Southland	
		Start	End	Start	End
		\$	\$	\$	\$
Sheep:	Ewes	19	24	19	26
	Hoggets	24	26	26	28
	Lambs	15	20	16	20
	Rams	50	75	50	75
Cattle:	Cows	340	420	400	450
	2 yr Cattle	350	550	350	550
	Yearlings	325	450	335	450
	Weaners	190	290	190	290
	Bulls	400	500	400	500

4. Values of crop on hand were obtained from the crop accounts for the 1983-84 year.
5. Off-farm assets were valued as presented in the 1983-84 financial statement.
6. Both fixed and current liabilities were as recorded in the balance sheet for the 1983-84 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 1983-84.

Gross Farm Expenditure

10. Gross farm expenditure is as presented in the financial statements for 1983-84 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	853,562		705,664		147,898
Percentage Distribution	100.00		82.7		17.3
Economic Farm Surplus	43,236		35,756		7,480
- Wages of Management					
Basic	15,000		15,000		0
Reward	2,511		2,076		435
= Interest Surplus	25,725		18,680		7,045
Return to Total Farm Capital (%)	3.0		2.7		4.8
+ Capital Increment	-26,322		-21,768		-4,553
= Interest Surplus including Capital Increment	-597		-3,088		2,492
Return to Total Farm Capital including Capital Increment	0		-0.4		1.7
Interest Surplus	25,725		18,680		7,045
- Debt Servicing	21,290		0		21,390
= Equity Surplus	4,335		18,680		-14,345
+ Capital Increment	-26,322		-21,768		-4,553
= Equity Surplus including Capital Increment	-21,987		-3,088		-18,898

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

<u>Economic Farm Surplus</u>						
Group	1	2	3	4	5	All Farms
	\$	\$	\$	\$	\$	\$
Net Farm Profit	10,482	4,499	8,673	-3,998	14,499	4,691
+ Unconsidered Revenue	6,096	5,546	6,202	5,888	5,589	5,844
= Gross Farm Income	16,578	10,045	14,875	1,890	20,088	10,535
+ Labour and Management Fee	13,981	8,045	6,150	11,112	15,291	10,018
+ Debt Servicing	30,155	15,740	16,468	23,567	30,165	21,390
+ Development Expenses	1,445	1,921	1,007	1,513	75	1,293
= Economic Farm Surplus	62,159	35,751	38,500	38,082	65,619	43,236

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	62,159	35,751	38,500	38,082	65,619	43,236
- Wages of Management	17,995	16,948	17,345	17,135	19,337	17,511
- Stock and Plant Rent	17,185	10,591	10,032	12,197	12,566	11,545
= Specific Land Rent	26,979	8,212	11,123	8,750	33,716	14,180
Capital Growth in Land and Buildings	-42,867	-29,038	-30,999	-41,611	-48,707	-37,125
- Development Expenses	1,445	1,921	1,007	1,513	75	1,293
= Capital Increment and Buildings	-44,312	-30,959	-32,006	-43,124	-48,782	-38,418
Specific Land Rent including Capital Increment of Land and Buildings	-17,333	-22,747	-20,883	-34,374	-15,066	-24,238
Value Land and Buildings	779,827	635,539	657,424	766,184	863,844	723,366
Land Rent Return (%)	3.5	1.3	1.7	1.1	3.9	2.0
Land Rent Return including Capital Increment of Land and Buildings (%)	-2.2	-3.6	-3.2	-5.6	-1.7	-3.4

TABLE 17

Return to Labour and Management

Group	1	2	3	4	5	All Farms
	\$	\$	\$	\$	\$	\$
Economic Farm Surplus	62,159	35,751	38,500	38,082	65,619	43,236
- Opportunity Cost of Equity at 14.1%	102,226	91,082	93,085	102,721	116,336	99,498
- Debt Servicing	30,155	15,740	16,468	23,567	30,165	21,390
= Owner's Surplus	-70,222	-71,071	-71,053	-88,206	-80,882	-77,652
- Wages of Management	17,995	16,948	17,345	17,135	19,337	17,511
= Owner's Excess	-88,217	-88,019	-88,398	-105,341	-100,219	-95,163
Growth Total Farm Capital	-10,986	-14,614	-13,102	-38,765	-39,955	-25,029
- Development Expenses	1,445	1,921	1,007	1,513	75	1,293
= Capital Increment	-12,431	-16,535	-14,109	-40,278	-40,030	-26,322
Owner's Excess including Capital Increment	-100,648	-104,554	-102,507	-145,619	-140,249	-121,485

TABLE 18

Return to Capital

Group	1	2	3	4	5	All Farms
	\$	\$	\$	\$	\$	\$
Economic Farm Surplus	62,159	35,751	38,500	38,082	65,619	43,236
- Wages of Management	17,995	16,948	17,345	17,135	19,337	17,511
= Interest Surplus	44,164	18,803	21,155	20,947	46,282	25,725
Growth Total Farm Capital-10,986	-14,614	-13,102	-38,765	-39,955	-25,029	
- Development Expenses	1,445	1,921	1,007	1,513	75	1,293
= Capital Increment	-12,431	-16,535	-14,109	-40,278	-40,030	-26,322
Interest Surplus including Capital Increment	31,733	2,268	7,046	-19,331	-75	-597
Total Farm Capital	958,275	749,257	775,220	902,819	1,005,027	853,562
Return to Farm Capital (%)	4.6	2.5	2.7	2.3	4.6	3.0
Return to Farm Capital including Capital Increment (%)	3.3	0.3	0.9	-2.1	0	-0.1

TABLE 19

Return to Farm Equity

Group	1	2	3	4	5	All Farms
	\$	\$	\$	\$	\$	\$
Economic Farm Surplus	62,159	35,751	38,500	38,082	65,619	43,236
- Wages of Management	17,995	16,948	17,345	17,135	19,337	17,511
- Debt Servicing	30,155	15,740	16,468	23,567	30,165	21,390
= Equity Surplus	14,009	3,063	4,687	-2,620	16,117	4,335
Growth Total Farm Capital	-10,986	-14,614	-13,102	-38,765	-39,955	-25,029
- Development Expenses	1,445	1,921	1,007	1,513	75	1,293
= Capital Increment	-12,431	-16,535	-14,109	-40,278	-40,030	-26,322
Equity Surplus including Capital Growth	1,578	-13,472	-9,422	-42,898	-23,913	-21,987
Total Farm Equity	725,011	645,973	660,182	728,518	825,081	705,664
Return to Farm Equity (%)	1.9	0.5	0.7	-0.4	1.9	0.6
Return to Farm Equity including Capital Increment (%)	0.2	-2.1	-1.4	-5.9	-2.9	-3.1

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