

AN ECONOMIC SURVEY
OF NEW ZEALAND WHEATGROWERS:

FINANCIAL ANALYSIS

1980-81

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THE AGRICULTURAL ECONOMICS RESEARCH UNIT

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PREFACE

This Report is the fourth 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 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 1980-81 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 and analysis by Patrick McCartin, and the report compiled by Roger Lough and Patrick McCartin with assistance from Michael Rich.

P.D. Chudleigh
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 and made time and information freely available to field staff. Mr Derek Newman and Mr Tom Marks of the Farm Management Department, Lincoln College, provided constructive criticism on the draft report.

SUMMARY

No one single factor can adequately assess farm or interfarm profitability. It is therefore the intention of this report to evaluate the following 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
- c) Cash resources and farm liquidity

CAPITAL STRUCTURE AND ASSET GROWTH

1. Total farm capital for the average New Zealand survey farm amounted to \$482,962. However the working capital deficit of \$12,406 exceeded produce on hand by \$1665 resulting in total farm assets including working capital of \$481,297.
2. Total fixed liabilities for the average New Zealand survey farm were \$87,447 or 18.2 percent of total farm assets including net working capital.
3. The capital value of the average New Zealand survey farm increased from \$1841 per hectare to \$2148 per hectare in the 1980-81 period. Marginal increases in the value of plant and machinery offset a small decline in the value of capital stock allowing farm capital to increase by \$281 per hectare. This capital growth was offset by a \$19 per hectare increase in the working capital deficit and a \$26 per hectare increase in farm liabilities, resulting in farm equity increasing by \$252 per hectare.

ADJUSTED FARM INCOME AND EXPENDITURE

4. Gross farm profit for the average New Zealand survey farm was \$88,156. The principal components were livestock (55 percent), wheat (22 percent) and other crops including barley, peas and small seeds (20 percent).
5. Expenditure of \$76,214 for the average New Zealand survey farm was made up of farm working expenses (43 percent), tractor and vehicle expenses including depreciation (26 percent) and debt servicing (16 percent).

6. Net farm income for the average New Zealand survey farm was \$11,942 or nearly 14 percent of gross farm profit. The highest net farm income of \$68 per hectare was achieved on those farms where 25 to 49 percent of gross farm profit came from crop production.

CASH RESOURCES AND FARM LIQUIDITY

7. Available cash for the average New Zealand survey farm of \$36,588 came from direct farm trading (49 percent), increase in term liabilities (28 percent), sale of assets (12 percent) and non farm income (11 percent).
8. Average cash disposition for the average New Zealand survey farm of \$40,388 comprised capital expenditure (46 percent), personal expenditure (43 percent) and loan repayments (11 percent).
9. The average cash deficit of \$3800 was financed by a decrease in sundry debtors of \$252, a decrease in current account at the stock firm and bank of \$1,753, an increase in sundry creditors of \$1,675 and withdrawals from the Income Equalisation Scheme of \$120.
10. The adjusted cash surplus for the average New Zealand survey farm, that is, the cash surplus adjusted for unsold produce and change in livestock numbers was \$649. An increase in the value of livestock of \$935 and crop on hand of \$3514 were the principal reasons for the difference between the cash deficit and adjusted cash surplus.
11. The cash deficit of farms with less than 5 percent of gross farm income from crop was \$9,329 which, after adjusting for changes in produce on hand, fell to an adjusted cash deficit of \$8,352. Those farms with 5 to 24 percent of gross farm profit from crop had a cash deficit of \$59 but an inventory change of \$1941, resulted in an adjusted cash surplus of \$1,882. Farms with 25 to 49 percent and over 50 percent of gross farm profit from crop showed similar cash deficits of around \$5000 but an adjusted cash deficit of \$2604 and an adjusted cash surplus of \$4,520 respectively.

12. The return on total farm capital for the average New Zealand survey farm was 3.7 percent and the return on farm equity 1.4 percent. Farms with 5-49 percent of their gross farm profit from crop had a return on capital of 3.6 percent. When above 50 percent of gross farm profit came from crop the return on farm capital was 4.0 percent; farms with below 5 percent of their gross farm profit from crop showed a return on capital of 3.3 percent.
13. When adjusted for capital growth the return on farm capital varied from 12.3 percent in group 1 to 15.3 percent for group 4 farms. The return to farm equity adjusted for capital growth varied from 12.5 percent in group 1 to 15.2 percent in group 4 farms indicating that the growth in farm capital 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 1980-81 wheat enterprise survey¹. The analysis was based upon the annual financial statements prepared for wheatgrowers by their accountants.

Farm accounts for the 1980-81 financial year were collected following the farm visit in 1982. Those available for analysis were grouped, as shown in Table 1, according to the degree of cropping intensity which 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 174 farms in the 1980-81 New Zealand wheat enterprise survey, 60 percent provided financial statements suitable for analysis, 9 percent provided financial statements unsuitable for analysis because of insufficient information, while 31 percent either were unable, or refused, for various reasons to provide financial statements. All farms suitable for analysis were "owner-operator" properties.

In order to standardise the various financial measures used terminology and procedures have been altered from previous reports (1977-78 to 1979-80). Definitions of terminology and procedures used are detailed in Appendix A.

1.2 Physical Characteristics of Farms

The physical characteristics of the four 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 and 4.

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 the 1980-81 year are contained in Research Report No. 121 and for the 1981-82 year, in Research Report No. 131.

TABLE 1
Farm Groups

Group	Crop Income as Percentage of Gross Farm Profit		Number of Farms
	Range	Average	Number
1	Below 5	0.6	9
2	5-24	14.1	33
3	25-49	36.7	28
4	50 and above	68.7	34
All Farms		41.6	104

TABLE 2
Physical Farm Characteristics

Group	1	2	3	4	All Farms
Total Area (ha)	193.8	218.5	204.3	196.3	205.3
Effective Area (ha)	190.0	211.1	200.5	191.2	199.9
Stock Units (no) ^a	2,515	2,570	2,198	1,422	2,090
Wheat Area (ha)	1.0	11.2	24.4	40.6	23.5
Barley Area (ha)	0.0	3.9	7.7	21.4	10.3
Pea Area (ha)	0.0	0.8	2.0	12.2	4.8
Small Seeds Area (ha)	0.0	0.7	5.4	26.3	10.3
Other Crop Area (ha)	0.7	1.4	2.5	7.8	3.7
Crop Area (% of Effective Area)	0.9	8.5	21.0	50.3	26.3

^a Start of Year

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 1980-81 financial year². 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 \$493,703; 75 percent of total farm assets were invested in land and buildings, 23 percent in livestock and plant and 2 percent in crop on hand. Current liabilities exceeded current assets resulting in a working capital deficit of \$12,406. Total farm assets including working capital therefore amounted to \$481,297.

Total farm assets increased with increased cropping intensity as did the deficit in the working capital position.

2.2 Farm Liabilities

Total farm liabilities on the average New Zealand survey farm were valued at \$88,135. The two main sources of farm liabilities in order of importance were private lenders (52.6 percent of total farm liabilities) and the Rural Bank (24.7 percent of total farm liabilities).

Farm liabilities increased with increased cropping intensity. Group 4 farms had the highest level of farm liabilities at \$113,935, this being 66 percent higher than group 1.

² Plant and machinery were valued at historical cost ex the financial statements while market values were used for livestock.

TABLE 3
Capital Structure (at Start of Year)

Group	1	2	3	4	All Farms
<u>Farm Capital</u>	\$	\$	\$	\$	\$
Land and Buildings	291,139	344,459	358,880	419,052	368,113
Tractor, Truck, Header ^a	18,694	28,007	41,706	54,186	39,447
Other Plant	9,990	13,050	14,604	21,058	15,824
Sheep	66,775	62,339	58,228	36,758	53,254
Cattle	5,807	11,772	3,329	1,947	5,770
Other	0	32	905	917	554
Total Farm Capital:	392,405	459,668	477,652	533,918	482,962
<u>Produce on Hand</u>					
Wheat	828	2,136	6,038	8,968	5,307
Barley	0	592	949	1,561	954
Peas	0	0	0	2,086	682
Small Seeds	555	57	929	6,491	2,438
Other Crops	0	0	0	1,966	643
Wool	0	1,730	315	258	717
Total Produce:	1,383	4,515	8,231	21,330	10,741
Total Farm Assets	393,788	464,183	485,883	555,248	493,703
<u>Working Capital</u>					
Bank	-531	1,179	76	-11,448	-3,394
Stock Firm	4,020	-3,653	-8,061	-10,116	-6,289
Equalisation Deposits	1,111	152	736	1,059	688
Sundry Debtors	1,891	2,736	2,211	5,249	3,343
Sundry Creditors	5,722	6,476	4,172	9,422	6,754
Working Capital	769	-6,062	-9,210	-24,678	-12,406
Total Farm Assets Including Working Capital	394,557	458,121	476,673	530,570	481,297

(Table 3 Cont...)

TABLE 3 (Cont.)
Capital Structure

Group	1	2	3	4	All Farms
<u>Farm Liabilities</u>	\$	\$	\$	\$	\$
<u>Fixed Liabilities</u>					
Rural Bank	7,026	23,276	19,750	25,872	21,769
Commercial Bank	0	1,677	5,812	6,426	4,198
Insurance Company	118	5,767	12,203	8,012	7,745
Stock Firm	2,721	853	714	941	1,006
Private	46,242	36,199	39,734	58,910	45,445
County Council	0	437	796	1,869	964
Hire Purchase	0	1,126	1,273	2,982	1,675
Other	11,876	3,296	0	7,864	4,645
Sub Total:	67,983	72,631	80,282	112,876	87,447
Specific Reserves	1,111	152	736	1,059	688
Total Farm Liabilities	69,094	72,783	81,018	113,935	88,135
Farm Equity	325,463	385,338	395,655	416,635	393,162
<u>Non-Farm Assets</u>					
Personal Assets	0	182	1,395	942	741
Investments	5,593	8,182	7,650	8,145	7,802
Total Non-Farm Assets	5,593	8,364	9,045	9,087	8,543
Net Worth	331,056	393,702	404,700	425,722	401,705

^a Based on Historical Cost; figures used in previous surveys (1977-78 to 1979-80) have been based on book values.

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 1980-81 is given in Table 4. Total farm capital on the average New Zealand survey farm was \$2416 per hectare at the start of the financial year. This increased by \$281 per hectare during the year to \$2697 per hectare. The value of produce on hand increased by \$16 per hectare but the decline in the working capital position of \$19 per hectare offset this improvement with the result that total farm assets adjusted for working capital increased by \$278 per hectare to \$2686 per hectare over the twelve month period. Farm liabilities, however, increased by \$26 per hectare to \$467 per hectare with the result that farm equity increased from \$1967 per hectare to \$221⁰ per hectare over the twelve month period. Farm equity as a percentage of total farm assets including working capital increased from 81.7 percent at the start of the year to 82.6 percent by the end. However, the liquidity position, assessed as unsold produce less net working capital, declined from a deficit of \$8 per hectare at the start of the year to \$11 per hectare at the end of the year. Total farm capital per hectare, the working capital deficit per hectare, farm liabilities per hectare and farm equity per hectare all increased with increasing crop intensity. While the rate at which non-farm assets grew over the year varied, by the end of the year non-farm assets in farm groups 2,3 and 4 were constant at between \$45 to \$50 per hectare. Group 1 properties had non-farm assets of \$60 per hectare.

³ All figures are on a per effective hectare basis.

TABLE 4
Capital Structure Per Effective Hectare

Group	1	2	3	4	All Farms
	\$	\$	\$	\$	\$
<u>Start of the Year</u>					
Capital Value					
Land and Buildings	1,532	1,632	1,790	2,192	1,841
Livestock	382	351	312	207	298
Plant and Machinery ^a	151	195	281	394	277
Total Farm Capital	2,065	2,178	2,383	2,793	2,416
Produce on Hand	7	21	41	112	54
Working Capital	4	-29	-46	-129	-62
Total Farm Assets Including Working Capital	2,076	2,170	2,378	2,776	2,408
Total Farm Liabilities	364	345	404	596	441
Farm Equity	1,712	1,825	1,974	2,180	1,967
Non-farm Assets	29	40	38	48	43
Net Worth	1,741	1,865	2,012	2,228	2,010
<u>End of Year</u>					
Capital Value					
Land and Buildings	1,831	1,894	2,094	2,550	2,148
Livestock	329	320	286	176	267
Plant and Machinery ^a	166	204	281	398	282
Total Farm Capital	2,326	2,418	2,661	3,124	2,697
Produce on Hand	4	20	62	148	70
Working Capital	-45	-29	-71	-155	-81
Total Farm Assets Including Working Capital	2,285	2,409	2,652	3,117	2,686

TABLE 4 (Cont...)

TABLE 4 (Cont...)
Capital Structure Per Effective Hectare

Group	1	2	3	4	All Farms
	\$	\$	\$	\$	\$
Total Farm Liabilities	422	374	412	627	467
Farm Equity	1,863	2,035	2,240	2,490	2,219
Non-farm Assets	60	45	50	47	48
Net Worth	1,923	2,080	2,290	2,537	2,267
<u>Changes in</u>					
Total Farm Capital	261	240	278	348	281
Produce on Hand	-3	-1	21	36	16
Working Capital	-49	0	-25	-26	-19
Total Farm Assets Including Working Capital	209	239	274	358	278
Total Farm Liabilities	58	29	8	31	26
Farm Equity	151	210	266	327	252
Non-farm Assets	31	5	12	-1	5
Net Worth	182	215	278	326	257
<u>Capital Ratios</u>					
Farm Equity as percentage of Total Farm Assets including Working Capital					
Start of Year(%)	82.5	84.1	83.0	78.5	81.7
End of Year (%)	81.5	84.5	84.5	79.9	82.6
Produce on Hand less Working Capital					
Start of Year(\$)	11	-8	-5	-17	-8
End of Year (\$)	-41	-9	-9	-7	-11

^a Based on historical cost; figures used in previous surveys (1977-78 to 1979-80) have been based on book values.

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 \$88,156 of which 55 percent came from livestock production. The other sources of income were wheat (22 percent) and other crops including barley, peas and small seeds (20 percent). Gross farm profit increased with increasing crop intensity; gross farm profit of \$110,935 for group 4 farms was 87 percent greater than group 1 farms.

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

1. Gross farm profit per hectare increased with increased cropping intensity.
2. Livestock gross farm profit per stock unit in groups 1 and 2 was similar at around \$26.50 per stock unit. Group 3 farms had a livestock gross profit per stock unit of \$29.56 while on group 4 properties it fell to \$21.30 per stock unit.
3. Increased cropping intensity was associated with increased wheat gross profit per total farm hectare. However, when wheat gross profit was expressed on a per hectare of wheat grown basis, wheat gross profit peaked on group 3 farms and then fell by nearly 7 percent on group 4 farms.
4. Other crop income per hectare of other crops grown increased with increasing cropping intensity if group 1 farms were excluded (only 0.5 percent of total farm income came from other crop income on group 1 farms). In group 2 other crop income was similar to livestock income per hectare but less than wheat income per hectare of wheat grown. In groups 3 and 4, other crop income was higher than livestock gross income but lower than wheat income per hectare.

TABLE 5
Gross Farm Profit and Expenditure

Group	1	2	3	4	All Farms
	\$	\$	\$	\$	\$
<u>Gross Farm Profit</u>					
Gross Farm Revenue					
Wool	28,334	26,686	24,251	13,720	21,934
Sheep	31,228	34,785	36,497	25,791	31,998
Cattle	6,102	7,511	4,214	2,410	4,834
Wheat	38	8,363	21,232	32,876	19,121
Barley	0	1,474	4,685	15,352	6,748
Peas	0	214	1,415	6,998	2,737
Small Seeds	161	203	1,825	15,248	5,555
Other Crops	141	472	1,662	5,692	2,470
Rebates & Subsidies	515	880	876	632	766
Produce, Milk, Pigs	0	1,740	135	2,048	1,258
Sundry, Hay, Grazing	294	408	524	1,799	885
Sub Total:	66,812	82,736	97,318	122,566	98,306
Less Livestock Purchases					
Sheep	4,554	4,550	10,574	8,819	7,568
Cattle	2,916	2,184	2,626	1,773	2,232
Other	0	12	24	1,039	350
Total Purchases	7,469	6,746	13,224	11,631	10,150
Gross Farm Profit	59,343	75,990	84,094	110,935	88,156

(Table 5 Cont...)

TABLE 5 (Cont.)
 Cross Farm Profit and Expenditure

Group	1	2	3	4	All Farms
	\$	\$	\$	\$	\$
<u>Gross Farm Expenditure</u>					
Farm Working Expenses					
Wages	7,525	8,561	9,653	10,202	9,302
Animal Health	1,692	1,770	1,621	1,491	1,632
Seed and Fertiliser	3,977	5,946	8,012	12,691	8,537
Freight	1,151	1,760	1,928	2,487	1,990
Other	7,180	8,169	10,677	16,850	11,594
Repairs & Maintenance	3,724	6,058	3,990	4,398	4,757
Tractor & Vehicle Expenses					
Repairs & Maintenance	2,233	4,465	4,872	7,417	5,347
Fuel & Oil	3,281	3,851	4,307	6,580	4,817
Admin., Rates, Insurance	3,906	4,909	4,790	6,166	5,201
Debt Servicing	7,535	10,081	10,077	18,328	12,556
Total Cash Expenditure	42,205	55,570	59,927	86,610	65,733
Depreciation					
Buildings	1,491	805	812	919	903
Motorised Plant ^a	3,739	5,602	8,341	10,837	7,890
Non Motorised Plant ^a	999	1316	1,477	2,406	1,688
Gross Farm Expenditure	48,434	63,293	70,556	100,772	76,214
<u>Net Farm Profit</u>					
- \$	10,909	12,697	13,538	10,163	11,942
- % Gross Farm Profit	18.4	16.7	16.1	9.2	13.6
<u>Used as Follows</u>					
Personal Drawings	8,936	9,798	10,486	10,543	10,152
Taxation	3,739	5,226	5,249	4,233	4,837
"Savings"	-1,766	-2,327	-2,197	-4,613	-3,047

^a Based on historical cost; figures used in previous surveys (1977-78 to 1979-80) have been based on book value.

TABLE 6
Gross Farm Profit-Enterprise Analysis

Group	1	2	3	4	All Farms
Gross Farm Profit:					
Livestock (\$/ha)	308	295	358	158	243
Wheat (\$/ha)	0	40	106	172	96
Other Crops (\$/ha)	2	11	48	226	86
Sundry (\$/ha)	4	14	8	23	16
Total Gross Farm Profit (\$/ha)	353	392	486	640	492
Livestock (\$/stock unit)^a					
Livestock (\$/ha Pasture)	349	356	396	277	309
Wheat (\$/ha wheat grown)	0	747	870	810	814
Other crops (\$/ha other crops grown)	431	348	545	639	602

^a Stock units as at the start of the year.

3.2 Gross Farm Expenditure

Table 5 shows gross farm expenditure for the average New Zealand survey farm to be \$76,214; the main components being farm working expenses (43 percent), tractor and vehicle expenses including depreciation (26 percent) and debt servicing (16 percent).

Table 7 gives a summary of gross farm expenditure on a per hectare basis. Gross farm expenditure per hectare increased with increasing cropping intensity. In group 4, farm working expenses were twice the farm working expenses on group 1 farms, while tractor and vehicle expenses were two and a half 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 \$11,942 or nearly 14 percent of gross farm profit. Personal drawings and taxation exceeded this net farm profit thereby resulting in a deficit per farm of \$3,047.

Table 8 gives a summary of the disposal of net farm profit on a per hectare basis. Gross farm expenditure increased with increasing cropping intensity thereby offsetting the increased gross farm profit characteristic of the more intensively cropped properties. This resulted in the average New Zealand survey farm having a net farm profit per hectare of \$60 which though similar to group 1 and 2 farms was \$8 per hectare lower than Group 3 but \$8 per hectare greater than group 4.

Personal expenditure and taxation which on the average New Zealand survey farm amounted to \$75 per hectare exceeded net farm profit per hectare, a factor common to all farm groups. The loss was greatest on the most intensively cropped properties.

Table 7
Gross Farm Expenditure Per Effective Hectare

Group	1	2	3	4	All Farms
	\$/ha	\$/ha	\$/ha	\$/ha	\$/ha
Farm Working Expenses:					
Wages	40	41	48	53	47
Animal Health	9	8	8	8	8
Seed & Fertiliser	21	28	40	66	43
Freight	6	8	10	13	10
Other	38	39	53	88	58
Repairs & Maintenance	20	29	20	23	24
Tractor & Vehicle Expenses:					
Repairs & Maintenance	12	21	24	39	27
Fuel & Oil	17	18	21	34	24
Admin., Rates, Insurance	21	23	24	32	26
Debt Servicing	40	48	50	96	63
Total Cash Expenditure	224	263	298	452	330
Depreciation ^a	31	37	54	75	51
Gross Farm Expenditure	255	300	352	527	381

^a Based on historical cost; figures used in previous surveys (1977-78 to 1979-80) have been based on book values.

TABLE 8
Net Farm Profit Disposition Per Effective Hectare

Group	1	2	3	4	All Farms
	\$/ha	\$/ha	\$/ha	\$/ha	\$/ha
Gross Farm Profit	314	360	420	579	441
Less Gross Farm Expenditure	255	300	352	527	381
Net Farm Profit	59	60	68	52	60
Used as Follows:					
Personal Drawings	47	46	52	55	51
Taxation	23	25	26	22	24
"Savings"	-11	-11	-10	-25	-15

CHAPTER 4

CASH FLOW STATEMENT

The cash flow position of wheat growing farms in New Zealand for the 1980-81 season is given in Table 9

4.1 Source and Disposition of Cash

Table 9 shows that the available cash on the average New Zealand survey farm was \$36,588, 49 percent of which came from direct farm trading. The other sources of available cash were an increase in farm liabilities (27.5 percent), sale of assets (12 percent) and non farm income (11 percent). Total cash disposition on the average New Zealand survey farm was \$40,388. The components of this expenditure were capital expenditure (46 percent), personal expenditure (43 percent) and loan repayments (11 percent). The cash deficit of \$3800 was associated with an increase in the value of produce and livestock on hand at the end of the year. Livestock on hand increased by \$935 while crop on hand increased by \$3514 giving a total inventory change of \$4449 and resulting adjusted cash surplus of \$649.

In group 1 the cash surplus from farming covered personal drawings, taxation and 37 percent of sundry investments. The balance of the sundry investments, existing loan repayments and capital expenditure amounting to \$30,794 was financed by an increase in farm liabilities (\$12,732), sale of assets (\$4,292) and non farm income (\$4,381), leaving a cash deficit of \$9,329. This cash deficit was partly offset by an increase in unsold produce on hand of \$977 leaving an adjusted cash deficit of \$8352. The increase in farm liabilities (\$12,732) was greater than loan repayments (\$1,596), therefore an increase in future debt servicing is expected.

In group 2 the cash surplus from farming covered personal drawings, taxation, sundry investments and 30 percent of the loan repayments. The balance of the loan repayments and the capital expenditure amounting to \$16,833 was financed by an increase in farm liabilities of \$9,225, sale of assets of \$4,501 and non farm income of \$3,048, leaving a cash deficit of \$59. This cash deficit was offset by an increase in livestock and crop on hand estimated to be \$1,941. The increase in farm liabilities exceeded loan repayments by \$232.

TABLE 9
Cash Flow Statement

Group	1		2		3		4		All Farms	
	\$	%	\$	%	\$	%	\$	%	\$	%
Cash Sales										
Wool	27,742		27,866		23,961		13,749		22,189	
Sheep	25,637		32,696		38,298		24,107		30,785	
Cattle	10,148		7,326		4,242		2,570		5,185	
Wheat	866		7,226		18,457		29,741		17,059	
Barley	0		1,832		4,898		13,437		6,293	
Small Seeds	494		203		1,030		12,990		4,631	
Peas	0		214		935		7,523		2,779	
Other Crops	140		404		1,591		5,457		2,353	
Rebates and Subsidies	515		880		876		632		766	
Sundry - Produce	0		1,740		137		1,040		929	
- Hay, Grazing	293		408		527		1,799		885	
1 Total Cash Farm Income	65,835		80,795		94,952		113,045		93,854	
Stock Purchases	7,469		6,745		13,224		11,631		10,150	
Cash Farm Expenditure	42,205		55,570		59,927		86,610		65,733	
2 Total Cash Expenditure	49,674		62,315		73,151		98,241		75,883	
Cash Surplus from Farming (1-2)	16,161	43.0	18,480	52.4	21,801	67.3	14,804	36.0	17,971	49.1
Non Farm Income:										
Contracting	0		979		750		2,805		1,429	
Interest, Fees etc.	527		1,165		1,527		994		1,151	
Insurance Claims etc.	3,854		809		517		1,904		1,352	
Tax Refunds	0	11.7	95	8.7	163	9.1	290	14.6	170	11.2
Increase in Farm Liabilities:										
Fixed Liabilities	3,808		3,475		774		4,880		3,236	
Hire Purchase	7,396		761		1,452		4,459		2,730	
Other	1,528	33.9	4,989	26.2	3,509	17.7	4,338	33.3	4,078	27.5
Sale of Assets:										
Mechanised Plant	2,186		3,160		1,240		4,829		3,104	
Non Mechanised Plant	236		67		265		450		260	
Investments	1,870	11.4	1,274	12.7	377	5.9	1,343	16.1	1,107	12.2
3 Total Available Cash	37,566	100.0	35,254	100.0	32,375	100.0	41,096	100.0	36,588	100.0

(Table 9 Cont...)

TABLE 9 (Cont.)
Cash Flow Statement

Group	1		2		3		4		All Farms	
	\$	%	\$	%	\$	%	\$	%	\$	%
Capital Expenditure:										
Buildings	14,303		2,398		5,082		3,075		4,372	
Mechanised Plant	6,385		8,993		5,127		14,439		9,507	
Other Plant	947		1,574		3,803		3,975		2,905	
Car	2,666	51.8	1,581	41.2	2,397	43.9	986	48.8	1,700	45.8
Loan Repayments:										
Rural Bank	645		661		549		1,220		812	
Private	584		1,087		1,489		510		963	
Other	367	3.4	1,495	9.2	1,825	10.3	5,785	16.3	2,889	11.6
Personal Expenditure:										
Personal Drawings	8,936		9,798		10,486		10,544		10,152	
Taxation	4,410		5,226		5,249		4,233		4,837	
Sundry Investments	7,652	44.8	2,500	49.6	1,336	45.8	1,333	34.9	2,251	42.6
4 Total Cash Disposition	46,895	100.0	35,313	100.0	37,343	100.0	46,100	100.0	40,388	100.0
5 Cash Surplus/Deficit (3-4)	-9,329		-59		-4,968		-5,004		-3,800	
Change in Produce on Hand:										
Livestock:										
Sheep	5,591		2,089		-1,802		1,685		1,212	
Cattle	-4,045		185		-28		-159		-351	
Other	0		0		-2		1,009		329	
Wool	592		-1,180		289		-30		-255	
Crop:										
Wheat	-828		1,137		2,774		3,135		2,061	
Barley	0		-358		-213		1,915		455	
Peas	0		0		480		-525		-42	
Small Seeds	-333		0		795		2,257		923	
Other	0		68		71		234		117	
6 Total Inventory Change	977		1,941		2,364		9,521		4,449	
7 Adjusted Cash Surplus/Deficit (5+6)	-8,352		1,882		-2,604		4,517		649	

In group 3 the cash surplus from farming covered personal expenditure, loan repayments and 5 percent of the capital expenditure. The balance of the capital expenditure amounting to \$15,542 was financed by an increase in farm liabilities (\$5,735), non farm income (\$2,957) and the sale of assets (\$1,882) resulting in a cash deficit of \$4,968. This cash deficit was partly offset by an increase in the value of produce on hand estimated to be \$2,364. The increase in farm liabilities exceeded loan repayments by \$1,872.

In group 4 the cash surplus from farming covered personal drawings, taxation and 2 percent of the sundry investments. The balance of the sundry investments, existing loan repayments, plus capital expenditure amounting in total to \$31,296, was financed by an increase in farm liabilities (\$13,677), sale of assets (\$6,622) and non farm income (\$5,993). The resulting cash deficit was \$5,004. This cash deficit was offset by a \$9,521 increase in the value of crop on hand. The increase in farm liabilities exceeded loan repayments by \$6,162.

4.2 Financing the Cash Deficit

Table 10 shows that the increase in working capital deficit on the average New Zealand survey farm resulted in a \$1,753 decrease in cash resources held in the Bank and Stock Firm current accounts, a decrease of \$120 in Income Equalisation deposits, a decrease of \$252 in sundry debtors and an increase of \$1,675 in sundry creditors.

TABLE 10
Financing the Change in Working Capital

Group	1	2	3	4	All Farms
	\$	\$	\$	\$	\$
Change of Funds in					
Current Account:					
Bank	68	930	-1,149	-531	-182
Stock Firm	-7,940	-2,411	1,217	-1,365	-1,571
Sundry Debtors	24	122	1,240	-1,915	-252
Income Equalisa-					
tion Deposits	0	212	-357	-279	-120
Sundry Creditors ^a	-1,481	1,088	-5,919	-914	-1,675
Cash Surplus/Deficit	-9,329	-59	-4,968	-5,004	-3,800

^a A negative sign indicates an increase in Sundry Creditors; a positive sign indicates a decrease in Sundry Creditors.

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 three 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 \$441 per hectare, when adjusted for unconsidered revenue items gave a gross farm income of \$465 per hectare. Gross farm expenditure assessed at \$381 per hectare (unconsidered expenditure items have been included) when adjusted for debt servicing gave total farm expenses of \$318 per hectare. Economic farm surplus (gross farm income less total farm expenses) was assessed therefore at \$147 per hectare.

The economic farm surplus increased with increasing crop intensity being \$126 per hectare for Group 1 farms increasing to \$171 per hectare for Group 4 farms. The expenditure ratio also increased with increasing cropping intensity.

5.1.2 Return to Land

The average New Zealand survey farm specific land rent return was 1.5 percent which increased to 16.9 percent when adjusted for the capital increment associated with land and buildings. While groups 2 and 3 farms had similar land rent returns of 1.2 percent, group 1 land rent return was 0.6 percent while in group 4 it was 2.0 percent. When the land rent was adjusted for capital growth the land rent return increased from 15.2 percent on group 1 farms to 17.6 percent on group 4 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 operators equity in an

investment returning 14.8 percent per annum.

The average New Zealand survey farm owners surplus was \$41,497 less than if he had invested his equity in another form of investment returning 14.8 per cent. If the opportunity cost of the owners labour is valued at \$11,360 (wages of management) then the owners excess, that is, the return to the owners management, was \$52,857 less than the opportunity cost of an alternative form of investment. However, if the capital increment was also included this total return was only \$1031 less than the alternative form of investment. The owners excess decreased with increasing crop intensity, but when adjusted for capital increment the trend was reversed. The owners excess adjusted for capital increment increased from a \$7,601 deficit in group 1 to a \$1,600 surplus in group 4.

5.1.4 Return to Capital

The average New Zealand survey farm's return to capital was 3.7 percent and return to farm equity was 1.4 percent. This would indicate that debt servicing amounting to \$63 per hectare exceeded incremental production resulting from this level of borrowing by \$46 per hectare (Basis of assessment given in Appendix A12). Group 1 farms showed a 3.3 percent return to capital and a 1.6 percent return to farm equity thereby indicating that the debt servicing of \$40 per hectare exceeded incremental production resulting from this level of borrowing by \$29 per hectare. Group 2 farms showed a 3.6 percent return to capital and a return to farm equity of 1.6 percent thereby indicating that the debt servicing of \$48 per hectare exceeded incremental production from this level of borrowing by \$36.50 per hectare.

Group 3 farms showed a 3.6 percent return to capital and a return to farm equity of 1.8 percent. Debt servicing of \$50 per hectare therefore exceeded incremental production resulting from this level of borrowing by \$35.50 per hectare. Group 4 farms showed a 4.0 percent return to capital and a return to farm equity of 0.7 percent. Debt servicing of \$96 per hectare therefore exceeded incremental production resulting from this level of borrowing by nearly \$72 per hectare.

When adjusted for capital increment, return to capital for the average New Zealand survey farm was 14.4 percent while the return to farm equity was 14.5 percent indicating that capital growth compensated

for 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 1981.

5.2.1 Capital Growth

The average New Zealand survey farm showed a growth in farm capital of \$281 per hectare. This was offset by a \$3 per hectare decline in the net working capital position and a \$26 per hectare increase in farm liabilities resulting in farm equity increasing by \$252 per hectare.

5.2.2 Liquidity

Despite the increase in farm liabilities financial gearing for the average survey farm improved from 18.3 percent at the start of the year to 17.4 percent at the end of the year. Between groups 2, 3 and 4 financial gearing increased with increased cropping intensity. Group 1 was the only group where the level of financial gearing increased 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 only 10 percent at the start of the year and by 11 percent at the end of the year, indicating only a marginal change in the net working capital position. However, this situation was largely achieved with high levels of unsold produce and sundry debtors. The liquidity ratio indicates that the cash resources available to cover current account liabilities was only 7 cents in the dollar at the start of the year and that this fell to 5 cents in the dollar at the end of the year.

Working capital ratios were similar for groups 2, 3 and 4 farms with Group 4 showing a 7 percent improvement between the start and the end of the year. However liquidity ratios declined with increasing crop intensity indicating the greater liquidity problems faced by intensively cropped properties.

TABLE 11
ECONOMIC INDICATORS

Group	1	2	3	4	All Farms
<u>Financial Productivity</u>					
Gross Farm Profit \$/ha	314	360	420	579	441
+ Unconsidered Revenue \$/ha	27	23	25	23	24
= Gross Farm Income	341	383	445	602	465
Gross Farm Expenditure \$/ha	255	300	352	527	381
- Debt Servicing \$/ha	40	48	50	96	63
= Total Farm Expenses	215	252	302	431	318
Economic Farm Surplus \$/ha	126	131	143	171	147
Expenditure Ratio	0.63:1	0.66:1	0.68:1	0.72:1	0.68:1
<u>Returns to Factors of Production</u>					
<u>Return To Land (%)</u>					
Specific Land Rent Return	0.6	1.2	1.2	2.0	1.5
Land Rent Return Including Capital Increment of Land and Buildings	15.2	16.8	16.8	17.6	16.9
<u>Return to Labour and Management (\$)</u>					
Owners Surplus	-32,226	-39,576	-40,067	-46,996	-41,497
Wages of Management	10,732	11,155	11,359	11,727	11,360
Owners Excess	-42,958	-50,731	-51,426	-58,723	-52,857
Owners Excess Return Including Capital Increment	-7,601	-2,320	-597	1,600	-1,031
<u>Return to Capital (%)</u>					
Return to Capital	3.3	3.6	3.6	4.0	3.7
Return to Farm Capital Including Capital Increment	12.3	14.1	14.2	15.3	14.4
<u>Return to Equity (%)</u>					
Return to Farm Equity	1.6	1.6	1.8	0.7	1.4
Return to Farm Equity Including Capital Increment	12.5	14.2	14.7	15.2	14.5

(Table 11 Cont...)

TABLE 11 (Cont...)

Group	1	2	3	4	All Farms
<u>Financial Stability</u>					
Capital Increment:					
Total Farm Capital (\$/ha)					
Start of Year	2,065	2,178	2,383	2,793	2,416
End of Year	2,326	2,418	2,661	3,124	2,697
Working Capital (including Produce on hand) (\$/ha)					
Start of Year	11	-8	-5	-17	-8
End of Year	-41	-9	-9	-7	-11
Total Farm Liabilities (\$/ha)					
Start of Year	364	345	404	596	441
End of Year	422	374	412	627	467
Farm Equity (\$/ha)					
Start of Year	1,712	1,825	1,974	2,180	1,967
End of Year	1,863	2,035	2,240	2,490	2,219
Liquidity:					
Financial Gearing (%)					
Start of Year	17.5	15.9	17.0	21.5	18.3
End of Year	18.5	15.5	15.5	20.1	17.4
Working Capital Ratio					
Start of Year	1.34:1	0.85:1	0.92:1	0.89:1	0.90:1
End of Year	0.33:1	0.83:1	0.90:1	0.96:1	0.89:1
Liquidity Ratio					
Start of Year	0.66:1	0.36:1	0.10:1	0.05:1	0.07:1
End of Year	0.25:1	0.41:1	0.05:1	0.03:1	0.05:1

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. A direct comparison is made between the period 1980-81 and the previous year 1979-80. The base year figures (1977/78) 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 increased 35.8 percent to \$2,408 per hectare, while total farm liabilities increased by 20.5 percent to \$441 per hectare. This resulted in farm equity increasing from \$1,407 to \$1,967 per hectare. The major factor affecting the increase in total farm assets was a 32.5 percent increase in the value of land and buildings. The net working capital declined by 26.5 percent to a deficit of \$62 per hectare.

TABLE 12
Capital Structure Comparisons

	1977-78	1979-80	1980-81	Change 1979-80 to 1980-81
	\$/ha	\$/ha	\$/ha	%
Land and Buildings	1,120	1,390	1,841	32.5
Plant and Machinery ^a	116	145	277	91.1
Livestock	156	250	298	19.2
Total Farm Capital	1,392	1,785	2,416	35.4
Plus Crop on Hand	40	37	54	46.0
Working Capital	-46	-49	-62	-26.5
Total Farm Assets Including Working Capital	1,386	1,773	2,408	35.8
Total Farm Liabilities	304	366	441	20.5
Farm Equity	1,082	1,407	1,967	39.8
Non-Farm Assets	55	45	43	-4.4
Net Worth	1,137	1,452	2,010	38.4

^a Plant and Machinery values were based on Book value in 1977-78 to 1979-80, but at Historical Cost 1980-81.

6.2 Gross Farm Profit and Expenditure

Table 13 shows that a 84.6 percent increase in gross profit from wheat plus a 30.3 percent increase in the gross profit from other crops were the major factors which contributed to the total gross farm profit increasing by 32.0 percent to \$441 per hectare. Gross farm expenditure increased by 51.2 percent to \$381 per hectare. These movements caused net farm profit to decrease by 26.8 percent from \$82 per hectare to \$60 per hectare.

TABLE 13
Gross Farm Profit and Expenditure Comparisons

	1977-78	1979-80	1980-81	Change 1979-80 to 1980-81
	\$/ha	\$/ha	\$/ha	%
Gross Farm Profit:				
Livestock	140	204	243	19.1
Wheat	60	52	96	84.6
Other Crops	61	66	86	30.3
Sundry	9	12	16	33.3
Total	270	334	441	32.0
Gross Farm Expenditure:				
Farm Working Expenses	88	110	166	50.9
Repairs & Maintenance	13	18	24	33.3
Tractor & Vehicle Expenses	29	36	51	41.7
Administration & Rates	15	18	26	44.4
Debt Servicing	37	42	63	50.0
Depreciation ^a	23	28	51	82.1
Total	205	252	381	51.2
Net Farm Profit	65	82	60	-26.8
Used as Follows:				
Personal Drawings	37	43	51	
Taxation	23	20	24	
Savings	5	19	-15	

^a Plant and machinery values were based on Book values 1977-78 and 1979-80 but at Historical Cost 1980-81.

6.3 Cash Flow Statement

Table 14 shows that a 29.8 percent increase in cash farm income to \$470 per hectare was offset by a 40.2 percent increase in cash farm

expenditure. The cash surplus from farming decreased by 2.2 percent to \$90 per hectare. Non farm income increased by 40 percent, farm liabilities by 66.6 percent and the sale of assets by 37.5 percent resulting in a 19.6 percent increase in total available cash of \$183 per hectare.

The total disposition of cash resources increased by nearly 33 percent to \$201 per hectare. The major factors contributing to this situation were a 48.4 percent increase in capital expenditure, a 21.1 percent increase in loan repayments and a 22.9 percent increase in personal expenditure. The 1979-80 cash surplus of \$2 per hectare was reduced to a cash deficit of \$18 per hectare in 1980-81. This cash deficit was offset by an increase in the value of crop and livestock on hand estimated at \$22 per hectare. This resulted in an adjusted surplus of \$4 per hectare, significantly lower than the \$20 per hectare in 1979-80.

TABLE 14
Cash Flow Statement Comparisons

	1977-78	1979-80	1980-81	Change 1979-80 to 1980-81
	\$/ha	\$/ha	\$/ha	%
Total Cash Farm Income	291	362	470	29.8
Total Cash Farm Expenses	210	271	380	40.2
Cash Surplus from Farming	81	92	90	-2.2
Non Farm Income	18	15	21	40.0
Increase in Farm				
Liabilities	34	30	50	66.6
Sale of Assets	20	16	22	37.5
Total Available Cash	153	153	183	19.6
Capital Expenditure	74	62	92	48.4
Loan Repayments	20	19	23	21.1
Personal Expenditure	69	70	86	22.9
Total Cash Disposition	163	151	201	33.1
Cash Surplus/Deficit	-10	2	-18	
Inventory Change	7	18	22	
Adjusted Surplus/Deficit	-3	20	4	

APPENDIX A
SURVEY DEFINITIONS AND DATA TREATMENT

Capital Structure

1. Value of land and buildings was taken from the latest Government valuation figures and updated using the "Farmland Sales Price Index".
2. Plant and machinery valuations were taken at historical cost from the depreciation schedule of the 1980-81 financial statement. 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 1980-81 financial year:

		Canterbury and South Canterbury		Southland	
		Start	End	Start	End
Sheep:	Ewes	\$25	\$20	\$25	\$25
	Hoggets	\$28	\$25	\$30	\$30
	Lambs	\$15	\$12	\$15	\$12
Cattle	Cows	\$240	\$240	\$240	\$240
	2 yr Cattle	\$320	\$335	\$300	\$335
	Yearlings	\$280	\$290	\$250	\$300
	Weaners	\$210	\$175	\$190	\$200
	Bulls	\$300	\$300	\$300	\$300

4. Values of crop on hand were obtained from the crop accounts for the 1980-81 year.
5. Off-farm assets were valued as presented in the 1980-81 financial statement.
6. Both fixed and current liabilities were as recorded in the balance sheet at the end of the 1980-81 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, sheen, 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
=	Sub Total

- Purchases
- = Gross Farm Profit

9. Rebates, subsidies and contracting are as presented in the financial statements for 1980-81.

Gross Farm Expenditure

10. Gross farm expenditure is as presented in the financial statement for 1980-81 with the following adjustments if applicable:

- (i) Appropriation of private car expenses.
- (ii) Deletion of managerial salaries.
- (iii) Deletion of special depreciation allowances.

11. Breakdown of farm expenditure items can be summarised as follows:

- (i) Repairs and maintenance includes that done to buildings, fences, tracks, culverts etc. plus any 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.
- (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 A 8.

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
- Farm produce used on 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 A10) 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 basic married couples wage reflecting the return to labour
- 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 owners surplus and owners excess expressed in dollar terms.

Owners Surplus: Is taken as the economic farm surplus less debt servicing less the opportunity cost of investing the owners equity in the next most profitable form of investment (taken to be the weighted average of interests charged on current account deficits). In brief the return to labour and management (owners surplus) should be at least as great as the opportunity cost of the owners labour and management in a non-farming occupation.

Owners Excess: Owners surplus less wages of management, where wages of management reflects the opportunity cost of the owners labour. The residual after subtracting the opportunity cost of labour and capital represents the return to the owners 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 is equivalent to the difference between the return on capital and return on equity expressed as a percentage of total farm equity. For example:

Return to Capital	%	3.7
Return to Equity	%	1.4
Total Farm Capital Including Working Capital	\$/ha	2,408
Farm Liabilities	\$/ha	441
Total Farm Equity	\$/ha	1,967
Farm Liabilities % Total Farm Capital	%	18.3
Economic Farm Surplus	\$/ha	147
less Wages of Management	\$/ha	57
Interest Surplus	\$/ha	90
Interest Surplus attributed to cover Farm Liabilities = 18.3% of \$90	\$/ha	16
less Debt Servicing	\$/ha	63
= Equity Surplus (Deficit)	\$/ha	-47
Equity Surplus as % Total Farm Equity	%	-2.3
Return on Capital less Return on Equity	%	2.3

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): Current account overdraft plus sundry creditors (current liabilities)

Liquidity Ratio: Cash reserves including Equalisation deposits (cash assets) : 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
- (ii) All current assets subject to valuation, that is, livestock and crop on hand.

APPENDIX B

PROFITABILITY ANALYSIS

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

Land : Land, buildings, and improvements.

Labour : Owners labour and management responsibilities.

Capital: Total Farm Capital and equity capital

TABLE 15
RETURN TO LAND

Group	1	2	3	4	All Farms
	\$	\$	\$	\$	\$
Economic Farm Surplus	23,477	27,534	28,567	32,994	29,247
-Wages of Management	10,732	11,155	11,359	11,727	11,360
-Stock and Plant Rent ^a	10,884	12,413	12,859	12,899	12,560
=Specific Land Rent	1,861	3,966	4,349	8,368	5,327
Capital Growth in					
Land and Buildings	56,820	55,426	60,960	68,486	61,307
-Development Expenses	14,303	2,398	5,081	3,076	4,372
=Capital Increment					
Land and Buildings	42,517	53,028	55,879	65,412	56,935
Specific Land Rent Including					
Capital Increment of					
Land and Buildings	44,378	56,994	60,228	73,780	62,262
Value Land and Buildings	291,139	344,459	358,880	419,052	368,113
Land Rent Return (%)	0.6	1.2	1.2	2.0	1.5
Land Rent Return Including					
Capital Increment of					
Land and Buildings (%)	20.2	17.2	18.2	18.3	18.1

^a For stock and plant rent assessment see Appendix A13

TABLE 16
RETURN TO LABOUR AND MANAGEMENT

Group	1	2	3	4	All Farms
	\$	\$	\$	\$	\$
Economic Farm Surplus	23,477	27,534	28,567	32,994	29,247
-Opportunity Cost of Equity at 14.8%	48,168	57,029	58,557	61,662	58,188
-Debt Servicing	7,535	10,081	10,077	18,328	12,556
=Owners Surplus	-32,226	-39,576	-40,067	-46,996	-41,497
-Wages of Management	10,732	11,155	11,359	11,727	11,360
=Owners Excess	-42,958	-50,731	-51,426	-58,723	-52,857
Growth Total Farm Capital	49,660	50,809	55,910	63,397	56,198
-Development Expenses	14,303	2,398	5,081	3,074	4,372
=Capital Increment	35,357	48,411	50,829	60,323	51,826
=Owners Excess including Capital Increment	-7,601	-2,320	-597	1,600	-1,031

TABLE 17
RETURN TO CAPITAL

Group	1	2	3	4	All Farms
	\$	\$	\$	\$	\$
Economic Farm Surplus	23,477	27,534	28,567	32,994	29,247
-Wages of Management	10,732	11,155	11,359	11,727	11,360
=Interest Surplus	12,745	16,379	17,208	21,267	17,887
Growth Total Farm Capital	49,660	50,809	55,910	63,397	56,198
-Development Expenses	14,303	2,398	5,081	3,074	4,372
=Capital Increment	35,357	48,411	50,829	60,323	51,826
Interest Surplus including Capital Increment	48,102	64,790	68,037	81,590	69,713
Total Farm Capital	392,404	459,667	477,652	533,917	482,962
Return to Farm Capital (%)	3.3	3.6	3.6	4.0	3.7
Return to Farm Capital including Capital Increment (%)	12.3	14.1	14.2	15.3	14.4

TABLE 18
RETURN TO FARM EQUITY

Group	1	2	3	4	All Farms
	\$	\$	\$	\$	\$
Economic Farm Surplus	23,477	27,534	28,567	32,994	29,247
-Wages of Management	10,732	11,155	11,359	11,727	11,360
-Debt Servicing	7,535	10,081	10,077	18,328	12,556
=Equity Surplus	5,210	6,298	7,131	2,939	5,331
Growth Total Farm Capital	49,660	50,809	55,910	63,397	56,198
-Development Expenses	14,303	2,398	5,081	3,074	4,372
=Capital Increment	35,357	48,411	50,829	60,323	51,826
Equity Surplus including Capital Growth	40,567	54,709	57,960	63,262	57,157
Total Farm Equity	325,459	385,336	395,655	416,634	393,165
Return to Farm Equity (%)	1.6	1.6	1.8	0.7	1.4
Return to Farm Equity including Capital Increment (%)	12.5	14.2	14.7	15.2	14.5

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