

AN ECONOMIC SURVEY
OF NEW ZEALAND WHEATGROWERS :
FINANCIAL ANALYSIS
1977-78

R.D. LOUGH
R.M. MacLEAN
P.J. McCARTIN
M.M. RICH

RESEARCH REPORT NO. 104

DECEMBER, 1979

ISSN 0069-3790

THE AGRICULTURAL ECONOMICS RESEARCH UNIT

Lincoln College, Canterbury, N.Z.

THE UNIT was established in 1962 at Lincoln College, University of Canterbury. Its major sources of funding have been annual grants from the Department of Scientific and Industrial Research and the College. These grants have been supplemented by others from commercial and other organisations for specific research projects within New Zealand and overseas.

The Unit has on hand a programme of research in the fields of agricultural economics and management, including production, marketing and policy, resource economics, and the economics of location and transportation. The results of these research studies are published as Research Reports as projects are completed. In addition, technical papers, discussion papers and reprints of papers published or delivered elsewhere are available on request. For list of previous publications see inside back cover.

The Unit and the Department of Agricultural Economics and Marketing and the Department of Farm Management and Rural Valuation maintain a close working relationship in research and associated matters. The combined academic staff of the Departments is around 25.

The Unit also sponsors periodic conferences and seminars on appropriate topics, sometimes in conjunction with other organisations.

The overall policy of the Unit is set by a Policy Committee consisting of the Director, Deputy Director and appropriate Professors.

UNIT POLICY COMMITTEE: 1979

Professor J. B. Dent, B.Sc., M.Agr.Sc., Ph.D.
(Farm Management and Rural Valuation)

Professor B. J. Ross, M.Agr.Sc.
(Agricultural Economics)

P. D. Chudleigh, B.Sc. (Hons), Ph.D.

UNIT RESEARCH STAFF: 1979

Director

Professor J. B. Dent, B.Sc., M.Agr.Sc., Ph.D.

Deputy Director

P. D. Chudleigh, B.Sc. (Hons), Ph.D.

Research Fellow in Agricultural Policy

J. G. Pryde, O.B.E., M.A., F.N.Z.I.M.

Research Economists

G. T. Harris, B.Com. (Hons), Dip.Ed., M.Ec.

L. J. Hubbard, B.Sc. (Hons)

R. D. Lough, B.Agr.Sc.

S. K. Martin, B.Ec., M.A. (Hons)

R. G. Moffitt, B.Hort.Sc., N.D.H.

M. M. Rich, Dip.V.F.M., B.Agr.Com., M.Ec.

R. L. Sheppard, B.Agr.Sc. (Hons)

A. M. M. Thompson, B.Sc. (Hons)

S. L. Young, M.A. (Hons)

Technical Officer

R. M. MacLean

Analyst/Programmer

S. A. Lines, B.Sc.(Hons)

Post Graduate Fellow

L. J. Wilson, B.A.

Secretary

V. A. Mathieson

CONTENTS		<u>Page</u>
LIST OF TABLES		(ii)
PREFACE		(iii)
SUMMARY		(iv)
CHAPTER 1	INTRODUCTION	
	1.1 Background	1
	1.2 Survey Description	1
	1.3 Physical Characteristics	3
CHAPTER 2	CAPITAL STRUCTURE	
	2.1 Assets	5
	2.2 Liabilities and Net Worth	5
	2.3 Capital Structure Per Hectare	8
CHAPTER 3	INCOME AND EXPENDITURE	
	3.1 Gross Farm Income	11
	3.2 Farm Expenditure	14
	3.3 Net Farm Income	15
	3.4 Economic Indicators	17
CHAPTER 4	CASH FLOW STATEMENT	
	4.1 Source and Disposition of Cash	19
	4.2 Inventory Changes	22
ACKNOWLEDGEMENTS		24
APPENDIX A	Survey Definitions and Treatment of Data	25

LIST OF TABLES

<u>No.</u>		<u>Page</u>
1.	Farm Groups	2
2.	Wheatgrowing Farm Characteristics	2
3.	Physical Farm Characteristics	3
4.	Capital Structure	6
5.	Capital Structure Per Hectare	9
6.	Income and Expenditure	12
7.	Gross Farm Income	14
8.	Farm Expenditure Per Hectare	15
9.	Net Farm Income Disposition Per Hectare	16
10.	Economic Indicators	18
11.	Cash Flow Statement	20

PREFACE

This report is the first in a new series of economic surveys on New Zealand wheatgrowing farms. Until now, the surveys, undertaken by the Agricultural Economics Research Unit at Lincoln College on behalf of the Wheatgrowers Sub-section of Federated Farmers of NZ (Inc.), have concentrated on the enterprise cost and return aspects of wheatgrowing. Three enterprise surveys over the years have now been reported and refer to the 1976-77, 1977-78 and 1978-79 wheat years. This series of surveys and reports will continue as in the past.

The principal objective of the new series of surveys is to establish, from farm accounts and personal interviews, financial data pertaining to wheatgrowing farms. 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 first report in this new series refers to the 1977-78 financial year.

The accounts analysis was carried out by Roger Lough and Robyn MacLean, computer analysis aided by Patrick McCartin, and the Report compiled by Roger Lough and Michael Rich.

J.B. Dent
Director

SUMMARY

1. The average value of total assets was \$311,395; 90 per cent was invested in farm capital, 3 per cent in crop on hand and 7 per cent in off farm assets.
2. Total liabilities per farm of \$79,284 amounted to 25 per cent of total assets. Current liabilities were 24 per cent of total liabilities and increased with increasing cropping intensity.
3. Average gross farm income for all surveyed farms of \$55,418 came principally from livestock (51 per cent), wheat (22 per cent) and other crops including barley and small seeds (23 per cent).
4. Expenditure per farm of \$41,776 was made up of mostly farm working expenses (43 per cent), tractor and vehicle expenses including depreciation (25 per cent) and debt servicing (18 per cent).
5. Average net farm income was \$13,642 or 25 per cent of gross farm income. Net farm income per hectare before debt servicing was similar irrespective of cropping intensity.
6. Available cash per farm of \$31,106 came from direct farm trading (53 per cent), increase in term liabilities (22 per cent), sale of assets (13 per cent) and non farm income (9 per cent).
7. Average cash expenditure for all surveyed farms of \$33,199 was made up of capital expenditure (45 per cent), personal drawings and taxation (37 per cent), loan

repayments (12 per cent) and sundry investments (5 per cent).

8. On those farms where 25 to 50 per cent of gross farm income was from crops, the increase in liabilities was three times greater than loan repayments. Therefore these farms will face a large increase in future debt servicing charges. On those farms where the contribution of crop income to gross farm income was either less than 25 per cent or greater than 50 per cent, increases in liabilities were similar to loan repayments. Therefore future debt servicing on these farms should not change significantly.
9. The average cash deficit per farm of \$2,093, the increase in sundry debtors of \$556 and income equalisation deposit of \$543 were financed by a \$2,522 reduction in cash held in the current accounts plus a \$670 increase in sundry creditors.
10. The average adjusted cash deficit per farm, that is the cash deficit with allowances for inventory changes was \$715. The principal inventory change was an increase in the value of livestock of \$1,150.
11. Farms with greater than 50 per cent of gross income from crops experienced the greatest liquidity problem because cash expenditure exceeded total available cash by \$6,494. This was largely due to the retention of livestock with an estimated market value exceeding \$3,000 and an increase in the value of crop carried over of \$1,701.

CHAPTER 1

INTRODUCTION

1.1 Background

During 1978 the Wheatgrowers Sub Section of Federated Farmers requested the Agricultural Economics Research Unit at Lincoln College to undertake a financial analysis of those farms in the New Zealand Wheatgrowers Survey. The analysis was based upon the annual financial statements prepared for the wheatgrowers by their accountants. The purpose of the analysis was to provide financial data related to New Zealand wheatgrowing farms and was therefore complementary to the existing wheat enterprise survey conducted on the same properties.

1.2 Survey Description

Farm accounts for the 1977-78 financial year were collected following the autumn visit in 1979. 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 income. Crop income included income from wheat, barley, small seeds and other crops.

Of the 146 farms which grew wheat in the 1977-78 New Zealand wheat enterprise survey, 54 per cent provided financial statements suitable for analysis, 15 per cent

provided financial statements unsuitable for analysis because of insufficient information, 20 per cent either were unable or refused to provide financial statements for various reasons and in 10 per cent of cases accountants failed to reply to the request for information. All farms suitable for analysis were "owner-operator" properties.

TABLE 1
Farm Groups

Group	Crop Income	Average Crop Intensity	Number of Farms
	% Gross Farm Income	%	
1	Below 25	14.7	22
2	25 - 50	37.6	30
3	Above 50	71.2	23
All Farms		44.6	75

Table 2 compares the characteristics of those farms where accounts were analysed and of those wheat survey farms where accounts were not analysed.

TABLE 2
Wheatgrowing Farm Characteristics

	Survey Farms where accounts were	
	(i) analysed	(ii) not analysed
Wheat Area (ha)	26.9	24.2
Wheat Yield (t/ha)	3.7	3.6
Gross Margin per hectare less Machinery Overhead Cost (\$)	216.49	210.29

1.3 Physical Characteristics

The physical characteristics of the three farming groups are summarised in Table 3. The table shows the emphasis on livestock production in group 1 and an increased area devoted to cropping in groups 2 and 3.

TABLE 3
Physical Farm Characteristics

Group	1	2	3	All Farms
Total Area (ha)	213.4	173.7	233.6	203.7
Stock Units (no)	2877	1735	1595	2027
Lambing percentage (%)	110.5	102.7	103.0	105
Wheat Area (ha)	11.4	20.5	39.4	23.6
Barley Area (ha)	3.4	7.4	17.8	9.4
Pea Area (ha)	0.7	2.1	18.7	6.8
Small Seeds Area (ha)	-	2.1	17.0	6.0
Other Crop Area (ha)	2.5	5.1	10.4	6.0
Crop Area (% of Total Area)	8.4	21.4	44.2	25.4

CHAPTER 2

CAPITAL STRUCTURE

The capital structure of wheatgrowing farms in New Zealand is detailed in Table 4; valuations apply as of the end of the 1977-78 financial year.

2.1 Assets

Total assets on the average New Zealand survey farm were valued at \$311,395; 73 per cent were invested in land and buildings, 17 per cent in livestock and plant, 3 per cent in crop on hand and 7 per cent in off farm assets.

Total assets per farm in group 3 of \$385,734 were almost 40 per cent higher than either group 1 or group 2. This was because average farm size in group 3 was nearly 20 per cent larger than the other groups and also the value of land and buildings per hectare was nearly 50 per cent higher.

Total investment in plant, machinery and livestock per farm in groups 1 and 3 was around \$58,000 which was 23 per cent higher than in group 2. The value of livestock, as a proportion of plant, machinery and livestock per farm was 72 per cent in group 1, 63 per cent in group 2 and 53 per cent in group 3.

2.2 Liabilities and Net Worth

Total liabilities on the average New Zealand survey

TABLE 4
Capital Structure

Group	1		2		3		All Farms	
	\$	%	\$	%	\$	%	\$	%
<u>Farm Capital</u>								
Land and Buildings	201,685	72.4	197,493	70.9	294,436	76.3	228,452	73.4
Tractor, Truck, Header	10,039	3.5	10,502	3.8	20,845	5.4	13,538	4.3
Other Plant	6,069	2.2	5,751	2.1	10,018	2.6	7,153	2.3
Sheep	40,361	14.5	26,600	9.6	25,106	6.5	30,179	9.7
Cattle	1,911	0.7	1,752	0.6	1,531	0.4	1,731	0.6
	-----	-----	-----	-----	-----	-----	-----	-----
Total	260,065	93.4	242,098	87.0	351,936	91.2	281,053	90.3
<u>Crop on Hand</u>								
Wheat	2,326	0.8	3,219	1.2	9,343	2.4	4,835	1.6
Other	129	-	781	0.3	9,894	2.6	3,385	1.1
	-----	-----	-----	-----	-----	-----	-----	-----
Total	2,455	0.8	4,000	1.5	19,237	5.0	8,220	2.7
<u>Off-Farm Assets</u>								
Cash	4,532	1.6	6,516	2.3	3,510	0.9	5,012	1.6
Sundry Debtors	654	0.2	3,029	1.1	2,524	0.7	2,177	0.7
Income Equalisation	272	0.1	900	0.2	1,000	0.3	746	0.2
Other Assets (incl. car)	2,795	1.0	2,479	0.9	4,118	1.0	3,074	0.9
Sundry Investments	7,780	2.9	19,464	7.0	3,409	0.9	11,113	3.6
	-----	-----	-----	-----	-----	-----	-----	-----
Total	16,033	5.8	32,388	11.5	14,561	3.8	22,122	7.0
Total Assets	278,553	100.0	278,486	100.0	385,734	100.0	311,395	100.0

TABLE 4 Cont.,
Capital Structure

Group	1		2		3		All Farms	
	\$	%	\$	%	\$	%	\$	%
<u>Fixed Liabilities</u>								
Rural Bank/Marginal								
Lands Board	17,928	24.0	12,686	21.3	19,540	17.9	16,326	20.6
Commercial Bank	1,924	2.5	1,948	3.4	1,598	1.5	1,833	2.3
Insurance Company	5,755	7.7	6,384	10.7	10,358	9.5	7,418	9.4
Stock Firm	2,409	3.2	793	1.3	2,956	2.7	1,930	2.4
Private	33,822	45.4	22,530	37.7	38,590	35.3	30,767	38.8
County Council	-	-	578	1.0	617	0.6	420	0.5
Other	1,943	2.5	796	1.3	2,454	2.2	1,641	2.1
Total	63,781	85.3	45,715	76.7	76,113	69.7	60,335	76.1
<u>Current Liabilities</u>								
Commercial Banks	898	1.2	2,844	4.8	7,216	6.6	3,614	4.6
Stock Firms	5,376	7.4	4,118	6.8	10,547	9.6	6,459	8.2
Hire Purchase Firms	340	0.5	1,606	2.7	2,620	2.4	1,545	1.9
Sundry Creditors	3,623	4.9	4,984	8.3	7,472	6.8	5,348	6.7
Other	545	0.7	416	0.7	5,404	4.9	1,983	2.5
Total	10,782	14.7	13,968	23.3	33,259	30.3	18,949	23.9
Total Liabilities	74,563	100.0	59,693	100.0	109,372	100.0	79,284	100.0
Net Worth - (\$)	203,990		218,793		276,362		232,111	
- (% of Total Assets)	73.2		78.6		71.6		74.5	

farm were valued at \$79,284, 76 per cent of which were fixed liabilities and 24 per cent were current liabilities. The two main sources of fixed liabilities in order of importance were Private (39 per cent of total liabilities) and Rural Bank/Marginal Lands Board (21 per cent of total liabilities). The main sources of current liabilities in order of importance were Stock firms and Commercial Banks.

Group 3 farms had the highest level of total liabilities. For all three groups, fixed liabilities were 18 to 24 per cent of total assets. Between groups, current liabilities increased with greater cropping intensity and this was principally due to the more intensive cropping farms having higher levels of crops on hand.

Net Worth on the average New Zealand survey farm was \$232,111 or 74 per cent of total assets. Between the three groups, net worth ranged from 72 to 79 per cent of total assets.

3.2 Capital Structure Per Hectare

A summary of capital structure per hectare is given in Table 5. The table shows total farm capital and the value of crop on hand increasing with increased cropping intensity. Group 2 farms had higher levels of off farm assets, relative to group 3, which offset the lower level of total farm capital and value of crop on hand. This resulted in both groups having a similar level of total

assets per hectare.

Total assets per hectare in groups 2 and 3 were almost \$300 and \$350 respectively higher than total assets in group 1. Total liabilities per hectare were highest in group 3 and similar for groups 1 and 2, and this resulted in group 2 having the highest net worth per hectare.

TABLE 5
Capital Structure Per Hectare

Group	1	2	3	All Farms
	\$/ha	\$/ha	\$/ha	\$/ha
Total Farm Capital	1218.67	1393.77	1506.57	1358.40
Crop on Hand	11.50	23.02	82.35	39.72
Off Farm Assets	75.13	186.45	62.33	106.92
Total Assets	1305.30	1603.24	1651.25	1505.04
Total Liabilities	349.40	343.59	468.20	383.19
Net Worth	955.90	1259.65	1183.05	1121.85

CHAPTER 3

INCOME AND EXPENDITURE

Gross farm income and expenditure details along with the disposition of net farm income are given in Table 6.

3.1 Gross Farm Income

Table 6 shows gross farm income for the average New Zealand survey farm was \$55,418, 51 per cent of which came from livestock production. The other main sources were wheat (22 per cent) and other crops including barley and small seeds (23 per cent). Gross farm income between groups was highest in group 3 and lowest in group 2.

Table 7 shows gross farm income details on a per hectare and per stock unit basis. It is seen that:

1. Total income per hectare in groups 1 and 2 were similar but lower than in group 3.
2. Livestock income per stock unit in groups 1 and 2 were similar but higher than in group 3.
3. Livestock income per livestock hectare fell with increasing cropping intensity especially between groups 2 and 3.
4. Increased cropping intensity was associated with increased wheat income per hectare, however when this income was expressed on a per hectare of wheat grown basis a decrease occurred.

TABLE 6
Income and Expenditure

Group	1		2		3		All Farms	
	\$	%	\$	%	\$	%	\$	%
<u>Gross Farm Income</u>								
Wool	20,224	38.9	11,740	25.8	7,033	9.8	12,785	23.1
Sheep	21,074	40.5	13,257	29.1	9,670	13.5	14,450	26.1
Cattle	1,246	2.4	893	2.0	1,579	2.2	1,207	2.2
Wheat	6,248	12.0	10,991	24.1	19,424	27.2	12,186	22.0
Barley	948	1.8	2,375	5.2	6,256	8.7	3,146	5.7
Small Seeds	31	0.1	803	1.8	9,982	14.0	3,391	6.2
Other Crops	425	0.8	2,938	6.5	15,199	21.3	5,961	10.7
Rebates & Subsidies	747	1.4	477	1.0	217	0.3	476	0.8
Contracting	623	1.2	302	0.7	318	0.4	401	0.7
Produce, Milk, Pigs	203	0.4	1,146	2.5	1,259	1.8	904	1.6
Sundry, Hay, Grazing	271	0.5	616	1.3	604	0.8	511	0.9
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Total	52,040	100.0	45,538	100.0	71,541	100.0	55,418	100.0

TABLE 6 Cont..
Income and Expenditure

Group	1		2		3		All Farms	
	\$	%	\$	%	\$	%	\$	%
<u>Farm Expenditure</u>								
Farm Working Expenses	15,978	44.5	13,813	39.6	24,829	44.0	17,826	42.7
Repairs and Maintenance	2,029	5.6	2,059	5.9	4,089	7.3	2,673	6.4
Tractor and Vehicle Expenses	5,690	15.8	4,849	13.9	7,771	13.8	5,992	14.3
Admin., Rates, Insurance	2,958	8.2	2,877	8.2	3,653	6.5	3,139	7.5
Debt Servicing	5,782	16.1	7,645	21.9	9,030	16.0	7,523	18.0
Depreciation	3,486	9.8	3,623	10.5	7,002	12.4	4,623	11.1
Total	35,923	100.0	34,866	100.0	56,374	100.0	41,776	100.0
<hr/>								
<u>Net Farm Income</u> - \$	16,117		10,672		15,167		13,642	
- % Gross Farm Income	30.8		23.4		21.2		24.6	
<u>Used as follows:</u>								
Personal Drawings	6,888	42.7	6,644	62.2	9,569	63.1	7,612	55.8
Taxation	5,425	33.6	4,683	43.8	4,239	27.9	4,762	34.9
Savings	3,804	23.7	-655	-6.0	1,359	9.0	1,268	9.3

5. Other crop income per hectare of other crop grown, in group 1, is similar to livestock income per hectare but less than wheat income per hectare of wheat grown. In group 2, this income is higher than livestock income per hectare but less than wheat income per hectare of wheat grown. In group 3, this income is higher than livestock income per hectare and similar to wheat income per hectare of wheat grown.

TABLE 7
Gross Farm Income

Group	1	2	3	All Farms
Livestock (\$/ha)	199.36	149.05	78.26	139.63
Wheat (\$/ha)	29.27	63.27	83.15	59.82
Other Crops (\$/ha)	6.57	35.21	134.57	61.35
Sundry (\$/ha)	8.60	14.60	10.30	11.25
Total (\$/ha)	243.80	262.13	306.28	272.05
Livestock (\$/Stock unit)	14.78	14.92	11.46	14.05
Livestock (\$/livestock ha)	216.39	184.92	126.95	180.10
Wheat (\$/ha wheat grown)	548.07	536.14	492.99	516.35
Other crops (\$/ha other crops grown)	212.72	345.53	491.97	443.19

3.2 Farm Expenditure

Table 6 shows farm expenditure for the average New Zealand survey farm to be \$41,776; the main components were farm working expenses (43 per cent), tractor and vehicle expenses including depreciation (25 per cent), and debt servicing (18 per cent).

Table 8 gives a summary of farm expenditure on a per hectare basis. The main reason group 2 farms had a higher farm expenditure per hectare than group 1 was because of higher debt servicing. Group 3 farms had the highest farm expenditure per hectare. In this group farm working expenses were 42 per cent higher than group 1, tractor and vehicle expenses were 25 per cent higher and depreciation was 83 per cent higher.

TABLE 8
Farm Expenditure Per Hectare

Group	1	2	3	All Farms
	\$/ha	\$/ha	\$/ha	\$/ha
Farm working expenses	74.90	79.50	106.30	87.51
Repairs and maintenance	9.50	11.90	17.50	13.12
Tractor and Vehicle Expenses	26.70	27.90	33.30	29.42
Admin., Rates, Insurance	13.70	16.70	15.60	15.41
Debt Servicing	27.10	44.00	38.70	36.93
Depreciation	16.40	20.90	30.00	22.70
Total	168.30	200.90	241.40	205.09

3.3 Net Farm Income

Table 6 shows net farm income on the average New Zealand survey farm to be \$13,642 or 24.6 per cent of gross farm income. This net farm income was used on

personal drawings (56 per cent), taxation (35 per cent) and savings (9 per cent). Net farm incomes for group 1 and 3 were similar while in group 2 the figure was significantly lower.

Table 9 gives a summary of the disposal of net farm income on a per hectare basis. Between groups, net farm income before debt servicing showed no significant difference despite the larger capital investment and increasing cropping intensity associated with group 3 farms. These group 3 farms had the highest level of personal drawings and the lowest taxation. Group 2 farms had the second lowest level of personal drawings per hectare but the lowest level of personal drawings per farm (see Table 6). The level of savings was inversely related to the level of debt servicing. For example, group 2 farms had the lowest savings and the highest debt servicing commitment, while, group 1 farms had the highest savings and the lowest debt servicing.

TABLE 9

Net Farm Income Disposition Per Hectare

Group	1	2	3	All Farms
	\$/ha	\$/ha	\$/ha	\$/ha
Net Farm Income Before Debt Servicing	102.70	105.30	103.60	103.90
-Debt Servicing	27.10	44.00	38.70	36.93
Net Farm Income	75.60	61.30	64.90	66.97
Used as follows:				
Personal Drawings	32.30	38.20	41.00	37.37
Taxation	25.40	26.90	18.10	23.38
Savings	17.90	-3.80	5.80	6.22

3.4 Economic Indicators

Table 10 shows the average New Zealand survey farm to have a rate of return on total farm capital of 4.1 per cent, and a return on equity capital of 6.5 per cent. By rewarding equity capital a market interest rate of 10 per cent, a labour and management residual of \$-7254 is obtained.

Definitions of terms used are given in Appendix A.

TABLE 10

Economic Indicators

Group	1	2	3	All Farms
	\$	\$	\$	\$
1. Cash Expenditure	32,440	31,240	49,373	37,153
2. Managerial Reward	<u>8,600</u>	<u>8,421</u>	<u>9,352</u>	<u>8,811</u>
3. Adjusted Working Expenses	41,040	39,661	58,725	45,964
4. Working Capital (0.5 x 3)	20,520	19,830	29,363	22,982
5. Farm Capital	260,065	242,098	351,936	281,053
6. Total Farm Capital	<u>280,585</u>	<u>261,928</u>	<u>381,299</u>	<u>304,035</u>
7. Net Farm Income	16,117	10,663	15,167	13,642
8. Debt Servicing	5,782	7,645	9,030	7,523
9. Less Managerial Reward	<u>8,600</u>	<u>8,421</u>	<u>9,519</u>	<u>8,811</u>
10. Economic Farm Surplus	13,299	9,887	14,678	12,354
11. Rate of Return % (10/6)	4.7	3.8	3.9	4.1
12. Farm Capital	260,065	242,098	351,936	281,053
13. Off-Farm Cash	4,532	6,516	3,510	7,189
14. Less Fixed Liabilities	63,781	45,715	76,113	60,335
15. Less Current Liabilities	10,782	13,968	33,259	18,949
16. Farm Equity Capital	<u>190,034</u>	<u>188,931</u>	<u>246,074</u>	<u>208,958</u>
17. Rate of Return % (7/16)	8.5	5.6	6.2	6.5
18. Net Farm Income	16,117	10,663	15,167	13,642
19. Less 10% Farm Equity Capital	<u>19,003</u>	<u>18,893</u>	<u>24,607</u>	<u>20,896</u>
20. Labour & Management Residual	-2,886	-8,230	-9,440	-7,254

CHAPTER 4

CASH FLOW STATEMENT

The cash flow position of wheat growing farms in New Zealand is given in Table 11.

4.1 Sources and Disposition of Cash

Table 11 shows that the available cash on the average New Zealand survey farm was \$31,106; 53 per cent of which came from farming. The other main sources were an increase in term liabilities (25 per cent), sale of assets (13 per cent) and non farm income (9 per cent). Total cash expenditure on the average New Zealand survey farm was \$33,199. The components of this expenditure were capital expenditure (45 per cent), personal drawings and taxation (37 per cent), loan repayments (12 per cent) and sundry investments (5 per cent). The cash deficit of \$2,093 was financed principally by a fall in cash reserves held in current accounts of \$2,522.

In group 1 the cash farm surplus was enough to cover personal drawings, taxation, loan repayments and 34 per cent of capital expenditure and sundry investments. The remaining capital expenditure was financed by an increase in term liabilities (\$2,635), sale of assets (\$2,535) and non farm income plus refunds (\$2,664). The increase in liabilities was marginally greater than loan repayments therefore no significant increases in future debt servicing is expected. Non farm

TABLE 11

Cash Flow Statement

Group	1		2		3		All Farms	
	\$	%	\$	%	\$	%	\$	%
<u>1. Cash Farm Income</u>								
Wool	19,575	35.1	11,792	23.1	6,913	9.4	12,579	21.2
Sheep	23,366	41.9	16,075	31.5	14,036	19.1	17,588	29.6
Cattle	3,055	5.5	3,773	7.4	1,419	1.9	2,840	4.8
Wheat	7,273	13.0	10,565	20.8	18,380	25.0	11,996	20.2
Barley	1,048	1.9	2,459	4.8	6,749	9.2	3,361	5.7
Small Seeds	31	0.1	1,172	2.3	9,018	12.3	3,243	5.5
Other Crops	301	0.5	2,909	5.7	15,013	20.4	5,856	9.9
Rebates, subsidies	747	1.3	477	0.9	217	0.3	476	0.8
Sundry	405	0.7	1,788	3.5	1,787	2.4	1,382	2.3
Total	55,801	100.0	51,010	100.0	73,532	100.0	59,321	100.0
<u>2. Source of Cash Farm Surplus</u>								
Cash Farm Income	55,801		51,010		73,532		59,321	
Less Stock Purchases	4,634		5,427		7,125		5,715	
Less Cash Farm Expenses	32,440		31,240		49,373		37,153	
Cash Farm Surplus	- \$		14,343		17,034		16,453	
- (% Cash Farm Income)	33.6		28.1		23.2		27.7	
<u>3. Available Cash</u>								
Cash Farm Surplus	18,727	70.5	14,343	42.8	17,034	52.8	16,453	52.9
<u>Non farm income:</u>								
Contracting, Wages	766	2.9	702	2.1	420	1.3	634	2.0
Interest, dividends, fees	744	2.9	1,715	5.1	675	2.1	1,120	3.6
Insurance claims, gifts	155	0.4	1,905	5.7	1,405	4.6	1,227	3.9
<u>Increase in liabilities:</u>								
Term liabilities	2,635	9.9	8,690	25.9	5,135	15.9	5,827	18.7
Hire purchase	-	-	1,371	4.1	1,508	4.7	1,011	3.3
Livestock incentive scheme	-	-	19	0.1	-	-	7	-
<u>Refunds:</u>								
Taxation	166	0.6	47	0.1	168	0.4	119	0.4
Wool retention	480	1.8	501	1.5	293	0.9	431	1.4
Income equalisation	363	1.5	200	0.6	173	0.4	240	0.8
<u>Sale of assets:</u>								
Plant & Machinery	2,100	7.9	2,010	6.0	4,451	13.8	2,785	9.0
Sundry investments	435	1.6	2,034	6.0	1,014	3.1	1,252	4.0
Total Available Cash	26,571	100.0	33,537	100.0	32,276	100.0	31,106	100.0

TABLE 11 Cont..
Cash Flow Statement

Group	1		2		3		All Farms	
	\$	%	\$	%	\$	%	\$	%
<u>4. Cash Expenditure</u>								
<u>Capital Expenditure:</u>								
Land & Buildings	2,084	8.0	7,176	21.1	4,314	11.1	4,805	14.5
Mechanised Plant	3,892	14.9	6,326	18.6	9,301	24.0	6,525	19.7
Other Plant	1,955	7.5	2,043	6.0	3,766	9.7	2,545	7.7
Car	2,068	7.9	701	2.1	862	2.2	1,151	3.5
<u>Loan Repayments:</u>								
Term Loans	2,461	9.4	2,836	8.3	3,888	10.0	3,049	9.2
Hire Purchase	71	0.3	530	1.6	2,352	6.2	954	2.9
<u>Other</u>								
Sundry Investments	1,329	5.0	3,149	9.2	479	1.2	1,796	5.4
Personal Drawings	6,885	26.3	6,645	19.5	9,569	24.7	7,612	22.9
Taxation	5,422	20.7	4,680	13.6	4,239	10.9	4,762	14.2
Total Cash Expenditure	26,167	100.0	34,086	100.0	38,770	100.0	33,199	100.0
<u>5. Source of Cash Surplus</u>								
Available Cash	26,561		33,537		32,276		31,106	
Less Cash Expenditure	26,167		34,086		38,770		33,199	
Cash Surplus - \$	394		-549		-6,494		-2,093	
- % Available Cash	1.5		0.6		20.1		6.7	
<u>6. Effect of Cash Surplus on Working Capital Position</u>								
Funds in current Account	699		-2,160		-6,076		-2,522	
Sundry Debtors	120		1,880		-759		556	
Income Equalisation Deposits	272		391		1,000		543	
Less Sundry Creditors	697		660		659		670	
	394		-549		-6,494		-2,093	
<u>7. Adjusted Cash Surplus</u>								
Cash Surplus	394		-549		-6,494		-2,093	
Livestock Inventory Change	1,182		-323		3,039		1,150	
Wheat Inventory Change	-1,025		426		1,044		190	
Other Crops Inventory Change	24		-424		657		38	
Total Adjusted Cash Surplus	575		-870		-1,754		-715	

income together with sale of assets amounted to nearly 16 per cent of total available cash.

In group 2 the cash farm surplus covered personal drawings, taxation, and 90 per cent of loan repayments. This surplus made no contribution towards capital expenditure and sundry investments amounting in total to \$19,395. The increase in liabilities of \$10,080 was three times larger than loan repayments and this will result in future debt servicing charges being large. Non farm income and sale of assets amounted to nearly 25 per cent of total available cash.

In group 3 the cash surplus from farming covered drawings, taxation, and 52 per cent of loan repayments. This surplus made no contribution towards capital expenditure plus sundry investments amounting in total to \$18,722. Increase in liabilities (\$6,643) marginally exceeded loan repayments, therefore no significant increases in future debt servicing is expected. Non farm income together with sale of assets amounted to nearly 25 per cent of total available cash. This still left a cash deficit of \$6,494, which was financed principally by a reduction of cash in current account.

4.2 Inventory Changes

Table 11 shows that the cash deficit, on the average New Zealand survey farm, was \$2,093. This deficit plus the increase in sundry debtors of \$556 and income equalisation deposit of \$543 were financed by a \$2,522 reduction in cash held in the current account plus a \$670 increase in sundry creditors. The cash deficit reduced to an

adjusted cash deficit of \$715 after allowances had been made for inventory changes. The principal inventory change was a \$1,150 increase in the value of livestock.

The main inventory changes for the different farm groups included:

1. In group 1, a decrease in the value of wheat carried over which almost offset an increase in the value of livestock.
2. In group 2 an increase in the value of wheat carried over which almost offset a decrease in the value of other crops carried over. The small decrease in livestock values suggests that livestock numbers were marginally reduced.
3. In group 3, an increase in livestock values of \$3,039 and an increase in the value of crop carried over of \$1,701.

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 Murray Clark of the Farm Management Department, Lincoln College and Mr Warren Johnson, Accountant, Christchurch provided constructive criticism on the draft report. Miss Vicki Mathieson typed both the draft and final reports.

APPENDIX A

Survey Definitions and Treatment of DataCapital Structure

1. Value of land and buildings is taken from the latest Government valuation figures and up-dated using the Farmland Sales Price Index.
2. Plant and machinery valuations are taken from the depreciation schedule for the 1977-78 financial statement but exclude car, boats and caravans.
3. The following per head figures have been used to assess the value of livestock on hand at the end of the 1977-78 financial year:

Sheep	\$15
Cows	\$120
2 yr Cattle	\$90
Yearlings	\$50
Bulls	\$200
4. Values of crop on hand are obtained from the crop accounts for the 1977-78 year.
5. Off-farm assets are valued at the end of the 1977-78 financial year.
6. Both fixed and current liabilities are as recorded in the balance sheet at the end of the 1977-78 year.
7. Net worth is total assets less total liabilities and reflects the level of the farmer's investment.

Gross Farm Income

1. Gross Income for wool, sheep, cattle, wheat, barley, small seeds, other crops, produce and sundry income, is assessed as follows:

Gross Income	=	Cash Sales
	+	Stock on hand at end of year
	-	Purchases
	-	Stock on hand at start of year

2. Rebates, subsidies and contracting are as presented in the financial statements for 1977-78.

Gross Farm Expenditure

1. Gross Farm Expenditure is as presented in the financial statement for 1977-78 with the following adjustments if applicable:
 - (i) Appropriation of private car expenses
 - (ii) Deletion of managerial salaries
 - (iii) Deletion of special depreciation allowances.
2. Breakdown of Farm Expenditure can be summarised as follows:
 - (i) Farm Working Expenses includes wages, animal health, seeds, fertilisers, freight, weed and pest control.
 - (ii) Repairs and maintenance includes that done to buildings, fences, tracks, culverts etc. plus any development expenditure.
 - (iii) Tractor and vehicle expenses includes all expenses associated with both mechanised and

non-mechanised plant and machinery.

- (iv) Administration, rates, insurance include all administrative, power, telephone and overhead expenses.
- (v) Debt Servicing includes all interest and rent charges.

- 6. Savings is the residual after personal drawings and taxation have been deducted from net farm income.

Economic Indicators

- 1. Managerial reward is assessed as \$6,000 plus 1 per cent of total farm capital.

Cash Flow Statement

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

- 1. All non-cash transactions
- 2. All current assets subject to valuation, that is, livestock and crop on hand.

RECENT PUBLICATIONS

RESEARCH REPORTS

70. *A Practical Guide to Tax Planning using Procedures for Income Equalisation*, P. J. Charlton, 1975.
71. *Studies in Costs of Production: Process Peas and Beans, 1974-75*, W. O. McCarthy, R. G. Moffitt, P. W. Cosgriff and P. D. Chudleigh, 1975.
72. *Location of Farm Advisory Officers in New Zealand—an Application of Facility Location Analysis*, Joan R. Rodgers, Owen McCarthy and Vicki Mabin, 1975.
73. *The Ambulance Facility Location Problem—a Survey of Methods and a Simple Application*, Janet Gough and W. O. McCarthy, 1975.
74. *Studies in Costs of Production: Town Milk Supply Farms 1973-74*, R. J. Gillespie, 1976.
75. *Stabilising Post-Tax Incomes of New Zealand Sheep Farms*, P. D. Chudleigh, M. J. Blackie and J. B. Dent, 1976.
76. *Studies in Costs of Production: Town Milk Supply Farms, 1974-75*, R. J. Gillespie, 1976.
77. *Studies in Costs of Production: Town Milk Supply Farms, 1975-76*, R. J. Gillespie, 1977.
78. *Response Patterns to a Mail Survey of New Zealand Farmers*, T. I. Ambler, 1977.
79. *Wine: A Consumer Survey of Christchurch Households*, R. J. Brodie and M. J. Mellon, 1977.
80. *The Energy Requirement of Farming in New Zealand*, W. A. N. Brown and R. G. Pearson, 1977.
81. *Survey of New Zealand Farmer Intentions, Expectations, and Opinions, April-May 1977*, J. G. Pryde, 1977.
82. *Meat: A Consumer Survey of Christchurch Households*, R. J. Brodie, 1977.
83. *Marketing Costs for New Zealand Wool: 1970-71 to 1975-76*, P. D. Chudleigh, 1977.
84. *National Wheatgrowers' Survey No. 1, 1976-77*, R. G. Moffitt and L. E. Davey, 1977.
85. *Shipping New Zealand's Agricultural Exports: Background and Issues*, P. D. Chudleigh, 1978.
86. *Current Cost Depreciation Methods and the Valuation of Farm Tractors and Headers*, L. E. Davey, 1978.
87. *Optimum-Seeking Designs for Simulation Experiments with Models of Agricultural Systems*, S. R. Harrison, 1978.
88. *Production and Supply Relationships in the New Zealand Beef and Sheep Industries*, K. B. Woodford and L. D. Woods, 1978.
89. *Computer Simulation Models of Pasture Production in Canterbury: Description and User's Manual*, G. W. Fick, 1978.
90. *A Transport Survey of South Island Farmers*, S. L. Young, T. I. Ambler, S. J. Filan, 1979.
91. *Bread: A Consumer Survey of Christchurch Households*, R. J. Brodie and M. J. Mellon, 1978.
92. *An Economic Survey of New Zealand Wheatgrowers. Survey No. 2. 1977-78*, 1978.
93. *An Economic Survey of New Zealand Town Milk Producers, 1976-77*, 1978.
94. *Marketing Costs for New Zealand Meat Exports, 1970/71 to 1975/76*, P. D. Chudleigh, M. Clemes, L. D. Woods, 1978.
95. *Interfibre Relationships and Textile Marketing in Japan*, G. W. Kitson, 1978.
96. *Survey of New Zealand Farmer Intentions, Expectations, and Opinions, June-August 1978*, J. G. Pryde, 1978.
97. *Peak Wool Flows through the Marketing System*, S. K. Martin, 1979.
98. *An Economic Survey of New Zealand Town Milk Producers, 1977-78*, R. G. Moffitt, 1979.
99. *The Regional Impacts of Irrigation Development in the Lower Waitaki*, L. J. Hubbard, W. A. N. Brown, 1979.
100. *Recent Trends in the Argentinian Wool Industry*, S. K. Martin, 1979.
101. *An Economic Survey of New Zealand Wheatgrowers: Enterprise Analysis, Survey No. 3, 1978-79*, 1979.

102. *Cheese: A Consumer Survey of Christchurch Households*, R. J. Brodie, M. J. Mellon, 1979.
103. *A Study of Excess Livestock Transport Costs in the South Island of New Zealand*, R. D. Inness, A. C. Zwart, 1979.
104. *An Economic Survey of New Zealand Wheatgrowers: Financial Analysis, 1977-78*, 1979.

MARKET RESEARCH REPORTS

4. *The Japanese Distribution System and Implications for New Zealand Traders*, G. W. Kitson, 1973.
 5. *Prospects and Strategies in Promoting Tourism Between Japan and New Zealand*, G. W. Kitson, 1973.
 6. *Market Assessment*, W. O. McCarthy (ed.), 1973.
 7. *Optimum Site, Number and Location of Freezing Works in the South Island, New Zealand — A Spatial Analysis*, R. J. Brodie and W. O. McCarthy, 1974.
 8. *The Japanese Food Market and Implications for New Zealand*, G. W. Kitson, 1975.
 9. *Structure and Corporate Relationships in the Japanese Wool and Wool Textile Industries*, G. W. Kitson, 1976.
- In 1977, this separate report series was discontinued—Market Research Reports are now included in the Research Report series.

DISCUSSION PAPERS

29. *Christchurch Tomorrow—A discussion of the future development of Christchurch as a Regional Centre*, J. W. Wood, 1975.
30. *Use made of Transport by Farmers: A Pilot Survey with Findings Relating to Ashburton County, New Zealand*, T. I. Ambler, 1975.
31. *A Postal Sample Survey of Sheep Farmer Attitudes to Incentives and Obstacles to increasing Farm Output and other Agricultural Policy Issues*, J. G. Pryde, 1975.
32. *Proceedings of a Seminar on Costs Beyond the Farm Gate, 12th March 1976*, J. G. Pryde, W. O. McCarthy, D. L. Fyfe (eds.), 1976.
33. *A Postal Survey of the Opinions of a Group of Farm Management Society Members on Incentives and Obstacles to Increasing Farm Output*, J. G. Pryde, 1976.
34. *A Statistical Analysis of Sources of Variance of Income on Sheep Farms in New Zealand*, P. D. Chudleigh and S. J. Filan, 1976.
35. *Rate Regulation and Economic Efficiency in Rural Road Goods Transport*, T. I. Ambler, 1976.
36. *Proceedings of a Seminar on Wool Marketing in the 1980's—Held at Lincoln College 21 October, 1976*, W. O. McCarthy and J. G. Pryde (eds.), 1976.
37. *Some Economic Aspects of Conference and Non-Conference Wool Shipping*, P. D. Chudleigh, 1976.
38. *A Comment on Fisheries and Agricultural Trade Relationships between New Zealand and Japan*, G. W. Kitson, 1978.
39. *A Survey of Mid Canterbury Farmers' Attitudes to Growing Sugar Beet*, D. Leitch, P. D. Chudleigh and G. A. G. Frengley, 1978.
40. *New Zealand Agriculture and Oil Price Increases*, P. D. Chudleigh, S. L. Young, W. A. N. Brown, 1979.
41. *Proceedings of a Seminar on The Development of Rational Policies for Agricultural Trade between New Zealand and Japan*, A. C. Zwart, L. J. Wilson (eds), 1979.
42. *A Review of the New Zealand Goat Industry*, R. L. Sheppard, D. K. O'Donnell, 1979.
43. *Goats: A Bibliography*, D. K. O'Donnell, R. L. Sheppard, 1979.
44. *Proceedings of a Seminar/Workshop on the New Zealand Goat Industry*, R. J. Brodie, R. L. Sheppard, P. D. Chudleigh (eds), 1979.
45. *An Evaluation of the Southland Flood Relief Temporary Employment Programme*, G. T. Harris, T. W. Stevenson, 1979.
46. *Economic Factors Affecting Wheat Areas Within New Zealand*, M. M. Rich, A. C. Zwart, 1979.
47. *Japanese Food Policy and Self Sufficiency—An Analysis with Reference to Meat*, R. L. Sheppard, N. J. Beun, 1979.

Additional copies of Research Reports, apart from complimentary copies, are available at \$4.00 each. Discussion Papers are usually \$2.00 but copies of Conference Proceedings (which are usually published as Discussion Papers) are \$4.00. Remittance should accompany orders addressed to: Bookshop, Lincoln College, Canterbury, New Zealand. Please add \$0.50 per copy to cover postage.