

**Results from a 2015 survey of NZ
farm managers/owners covering
debt and related issues designed
to explore the impact of debt.**

Greig, B., Nuthall, P. and Old, K.

**Faculty of Agribusiness & Commerce Working
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ABSTRACT

With increasing debt levels across primary production businesses it is important to have contemporary knowledge of the levels of debt on NZ farms, including both past and present levels, but more importantly, have information on the difficulties debt levels might be creating and the human factors associated with these debt levels.

This report provides information and data from a random stratified survey across all farm types in all regions of New Zealand designed to answer the questions highlighted. In general the data is presented rather than deeply analysed as this will occur in a series of research articles to follow. The information contained in the report is available for everyone with an interest in debt matters to allow them to further analyse situations deemed to be important.

The information was obtained through an eight page questionnaire sent out to the sample which was stratified by farm type, farm area, and region. The strata percentages of the total sample of nearly 2300 farmers were based on the population percentages. The response rate was 19% with the responses not being significantly different from the sampled percentages.

The data is contained in 133 tables which divide the information according to farm type, total farm capital groupings, debt levels, and equity groups in most cases, but also by farmer age, education level and exam grades in other cases. Manager gender divisions are also presented where appropriate as well as labour unit level groupings.

It is clear debt levels vary widely with some farms having zero debt, but also some have small equity. Most farms are held in trusts and partnerships of some kind, though sole proprietorship is also important. Most debt is through fixed mortgages with interest only payments occurring.

In real terms capital gains are virtually non-existent, and the return on capital hovers round 3% making debt reduction difficult, though it is occurring as shown by the changing equity levels. Anxiety over debt issues, and many other issues, is also prevalent. Information on the farmers' objectives is also presented showing farmers seek many outcomes from their farms other than financial. If the latter was the main objective many farmers would sell up.

Also presented is data on farmers' management style as this could well impact on debt levels and repayments. The full list of questions asked and information obtained is listed in the appendix copy of the questionnaire.

Table of Contents

1 Introduction	1
2 Details of the farmer's responding and their farms	2
3 Farmers' experience and farm ownership arrangements	7
4 Total farm capital, debt levels and equity	10
5 The managerial style of the responding farmers	18
6 Farm debt levels when the farm was purchased relative to the present, sources of debt, and uses of debt funds	25
7 Types of debt used by the farmers.....	30
8 Debt ... repayment, restrictions and use	35
9 Explaining levels of assets, debt and equity through time	38
10 Debt ... interest, repayment and advice	44
11 Equity matters and outcomes from debt	47
12 Farmers' goals and aims	50
13 Farmers' anxiety levels for a range of stress sources.....	56
14 Difficulties in debt repayment and likely remedial actions	62
15 Farmer's spouse' anxiety levels and influence relative to debt levels.....	66
16 Farmers' self rated forecasting ability.....	68
17 Frequency of stress over debt and general farming issues	72
18 Farmers' views on various managerial approaches and attitudes (Locus of control).....	74
19 Farmers' sources of personal income.....	82
20 Farm income, expenditure and cash surplus levels	85
21 Return on capital for the farms	95
22 Physical production levels reported by the farmers	96
23 Farmers' attitude to three management situations.....	98
24 Farmers' biographical details	103
25 Concluding comments	110

LIST OF TABLES	PAGE
1 Number of properties in each class for both the population proportion and responding sample by farm size	4
2 Percentage of total population and responding sample in each farm type category	5
3 Distribution of labour units by farm type (includes the manager) ... number of farms in each category of labour unit number	6
4 Area of land leased/rented by farm type (hectares) relative to land owned	7
5 Managing experience and farm ownership	8
6 Percentage of farm assets held by the various ownership possibilities by farm type	9
7 Percentage of farm assets held by the various ownership possibilities by Total Farm Capital groups	9
8 Percentage of farm assets held by the various ownership possibilities by equity groups.....	10
9 Equity groups by farm type	10
10 Estimates of current market value of total farm and non-farm capital components ... NZ dollars	11
11 Debt levels by type of debt... NZ dollars.....	13
12 Total farm capital invested according to a range of divisors, by farm type	14
13 Percentage of farmers with total farm capital ranges by equity	14
14 Total farm debt (TFD) invested according to a range of divisors, by farm type	15
15 Percentage of farmers with total farm debt ranges by equity	16
16 Average \$Assets/debt/equity per labour unit by farm type and Total Farm Capital and \$debt per hectare by farm type, TFC and labour levels. All for 2015. (Data from Q D13)	17
17 Distribution of farmers' rating on the truth of managerial style questions. Rated on 1 (true) to 5 (not true) with 2-4 expressing degrees of truth to not true	18
18 Average score on the truth rating of managerial style questions by farm type (Score based on 1 (true) to 5 (not true). The first six farm types	19
19 Average score on the truth rating of managerial style questions by farm type (Score based on 1 (true) to 5 (not true). The last six farm types	20

20	Average truth rating score on managerial style questions by Total Farm Capital (\$) groups (Score based on 1 (true) to 5 (not true)	21
21	Average truth rating score on managerial style questions by Farm Debt level groups (\$) (Score based on 1 (true) to 5 (not true)	22
22	Average truth rating score on managerial style questions by equity percentage groups (Score based on 1 (true) to 5 (not true)	23
23	Results of significance probability testing for the differences across the columns using the F test for each managerial style question. Farm type, Total Farm Capital, debt and equity groups treatments (each in a column)	24
24	Percentage debt (debt as percentage of TFC) when the current property was purchased for a range of categories (farm type, total farm capital ranges, total debt ranges, and current equity ranges)	25
25	Sources of debt by farm type. Percentage of debt emanating from the listed possibilities for those farms with debt and answering the question	26
26	Sources of debt by Total Farm Capital. Percentage of debt emanating from the listed possibilities for those farms with debt and answering the question	27
27	Sources of debt by equity levels. Percentage of debt emanating from the listed possibilities for those farms with debt and answering the question	27
28	Use of borrowed funds. Percentage use of each source of funds	28
29	Use of borrowed funds relative to Total Farm Capital. Percentage of each TFC group using funds for the various uses	29
30	Use of borrowed funds relative to equity percentage. Percentage of each equity group using funds for the various uses	29
31	Use of borrowed funds relative to Total Farm Debt. Percentage of each TFD group using funds for the various uses	30
32	Various debt characteristics by farm type. Percentages of loans interest only, percentage paying interest on family loans, and percentage of farmers with family loans who are obliged to pay them back	31
33	Various debt characteristics by Total Farm Capital. Percentages of loans interest only, percentage paying interest on family loans, and percentage of farmers with family loans who are obliged to pay them back	32

34	Various debt characteristics by Equity groups. Percentages of loans interest only, percentage paying interest on family loans, and percentage of farmers with family loans who are obliged to pay them back	33
35	General type of debt by farm type. Percentage of farmers with each type of debt	33
36	Quantity of various types of debt held by farmers with debt. Total Farm Capital groups.....	34
37	Quantity of various types of debt held by farmers with debt. Equity groups.....	34
38	Percentage of farmers falling into debt level ranges by type of debt.....	35
39	Debt repayment method (%), management restriction caused by debt (1=minor restriction to 5=major restriction), and refusal to lend (%) ALL by farm type, Total Farm Capital and Equity %	36
40	Proportion of debt used in various categories by Farm Type, Total Farm Capital, and Equity levels. Average percentage for farmers answering in each category. And % of farmers who have defaulted on a debt payment by the same categories	37
41	Per year percentage change in assets, debt and equity from purchase of farm to 2015 by farm type, Total Farm Capital, labour unit groups and debt groups. Nominal figures ...	41
42	Per year percentage change in assets, debt and equity from purchase of farm to 2015 by farm type, Total Farm Capital, labour unit groups and debt groups. Real figures with 2016 base	42
43	Per year percentage change in assets, debt and equity from purchase of farm to 2015 ONLY for farms first purchased 1980 or after. By farm type, Total Farm Capital, labour unit groups and debt groups. Real figures with 2016 base	43
44	Payment of interest and principal on loans. Percentage of GROSS income devoted to each payment. By farm type, Total Farm Capital, debt level and labour units	44
45	Hours (average) per annum spent with the following people seeking help on financing and debt affairs. The figure in brackets is the rating on the degree of reliance placed on the person on a 1 to 5 scale (1= total reliance 5 = no reliance). All by farm type and Total Farm Capital	45
46	Hours (average) per annum spent with the following people seeking help on financing and debt affairs. The figure in brackets is the rating on the degree of reliance placed on the person on a 1 to 5 scale (1= total reliance 5 = no reliance). All by debt level and equity level	46
47	Percentage of farmers (a) experiencing the various categories of 'their lowest equity experienced', and (b) the percentage of farmers rating the outcomes from debt use in a range of categories	47

48	(a) Lowest equity percentage experienced by farmers, and (b) the farmers' rating on the outcomes from debt use in a range of categories based on a 5 point scale with 1 = very good through to 5 = not at all good. All by farm type and Total Farm Capital	48
49	(a) Lowest equity percentage experienced by farmers, and (b) the farmers' rating on the outcomes from debt use in a range of categories based on a 5 point scale with 1 = very good ... through to 5 = not at all good. All by debt levels and number of children..	49
50	Distribution of farmers' rating on the truth of goals and aims statements. Rated on 1 (true) to 5 (not true) with 2-4 expressing degrees of truth to not true	50
51	Average score on the truth rating of goals and aims statements by farm type (Score based on 1 (true) to 5 (not true). The first six farm types	51
52	Average score on the truth rating of goals and aims statements by farm type (Score based on 1 (true) to 5 (not true). The last six farm types	52
53	Average truth rating score on goals and aims statements by Total Farm Capital (\$) groups (Score based on 1 (true) to 5 (not true)	53
54	Average truth rating score on aims and goals by Farm Debt level groups (\$) (Score based on 1 (true) to 5 (not true)	54
55	Average truth rating score on goals and aims statements by equity percentage groups (Score based on 1 (true) to 5 (not true)	55
56	Results of significance probability testing for the differences across the columns using the F test for each goals and aims statement. Farm type, Total Farm Capital, debt and equity groups treatments	56
57	Distribution of the level of anxiety experienced for a range of anxiety creating factors. Scale based on 1 to 10 with 1 representing little anxiety and 10 representing great anxiety	57
58	Average score on anxiety level for a variety of anxiety creating factors, by farm type. Scale of 1 to 10 with 1 representing little anxiety and 10 representing great anxiety	58
59	Average score on anxiety level for a variety of anxiety creating factors, by Total farm capital. Scale of 1 to 10 with 1 representing little anxiety and 10 representing great anxiety	58
60	Average score on anxiety level for a variety of anxiety creating factors, by level of debt. Scale of 1 to 10 with 1 representing little anxiety and 10 representing great anxiety	59
61	Average score on anxiety level for a variety of anxiety creating factors, by equity %. Scale of 1 to 10 with 1 representing little anxiety and 10 representing great anxiety	60

62	Average score on anxiety level for a variety of anxiety creating factors, by number of children. Scale of 1 to 10 with 1 representing little anxiety and 10 representing great anxiety	61
63	Average score on anxiety level for a variety of anxiety creating factors, by age of farmer. Scale of 1 to 10 with 1 representing little anxiety and 10 representing great anxiety	62
64	Average score on anxiety level for a variety of anxiety creating factors, by highest level of education. Scale of 1 to 10 with 1 representing little anxiety and 10 representing great anxiety	63
65	Average score on anxiety level for a variety of anxiety creating factors ... by gender. Scale of 1 to 10 with 1 representing little anxiety and 10 representing great anxiety	64
66	Distribution of a 1 to 5 score on the likelihood of taking of the potential actions listed should money owing could not be paid. A score of one means 'never' use the option through to a score of 5 meaning definitely would use the option	65
67	Mean score on the likelihood of taking the potential actions listed should money owing could not be paid ... by equity levels. The scoring is based on 1=never use to 5= definitely use	65
68	Mean score on the likelihood of taking the potential actions listed should money owing could not be paid ... by Total Farm Capital levels. The scoring is based on 1=never use to 5= definitely use	66
69	Mean score on the likelihood of taking the potential actions listed should money owing could not be paid ... by debt levels. The scoring is based on 1=never use to 5= definitely use	66
70	Mean score on the likelihood of taking the potential actions listed if money owing could not be paid ... by farm type. The scoring is based on 1=never use to 5= definitely use ..	67
71	Mean score on the likelihood of taking the potential actions listed if money owing could not be paid ... by farmer age. The scoring is based on 1=never use to 5= definitely use	67
72	Mean score on the likelihood of taking the potential actions listed if money owing could not be paid ... by farmer's highest level of formal education. The scoring is based on 1=never use to 5= definitely use	68
73	Mean score on the likelihood of taking the potential actions listed if money owing could not be paid ... by number of children. The scoring is based on 1=never use to 5= definitely use	
74	Frequency distribution of the farmer's view of the spouses concern on the farm debt level AND whether the spouse significantly influences the debt level. Scoring based on a 1=never through to 5= frequently scale	68

75	Mean score of the farmer's view of the spouses concern on the farm debt level (1=never 5 = frequently) AND whether the spouse significantly influences the debt level (1=never..... 5=frequently) for a range of categories (TFC, Debt, Equity and No. of children)	69
76	Mean score of the farmer's view of the spouses concern on the farm debt level (1=never 5 = frequently) AND whether the spouse significantly influences the debt level (1=never..... 5=frequently) for a range of categories (Farmer age, highest formal education, gender)	70
77	Distribution of a farmer's self-rated ability for a range of skills based on a five point scale with 1=excellent ability and 5= poor ability. Percentage of respondents in each category	71
78	Mean scores on the farmer's self-rating of their 'ability to forecast/knowledge of' various factors important in farm and debt management. The rating was based on a scale 1=excellent to 5=poor. Values according to equity levels on each farm	72
79	Mean scores on the farmer's self-rating of their 'ability to forecast/knowledge of' various factors important in farm and debt management. The rating was based on a scale 1=excellent to 5=poor. Values according to farm type	72
80	Mean scores on the farmer's self-rating of their 'ability to forecast/knowledge of' various factors important in farm and debt management. The rating was based on a scale 1=excellent to 5=poor. Values according to level of farm labour (including the manager)	73
81	Mean scores on the farmer's self-rating of their 'ability to forecast/knowledge of' various factors important in farm and debt management. The rating was based on a scale 1=excellent to 5=poor. Values according to the age of the manager	73
82	Mean scores on the farmer's self-rating of their 'ability to forecast/knowledge of' various factors important in farm and debt management. The rating was based on a scale 1=excellent to 5=poor. Values according to the highest formal education level of the manager	74
83	Mean scores on the farmer's self-rating of their 'ability to forecast/knowledge of' various factors important in farm and debt management. The rating was based on a scale 1=excellent to 5=poor. Values according to the manager's gender	74
84	Distribution of the rating scores for the frequency with which significant anxiety was experienced for debt as well as general farming issues. Scale based on 1=often through to 5=seldom	75
85	Mean rating scores for the frequency with which significant anxiety was experienced for debt as well as general farming issues. Scale based on 1=often through to 5=seldom. Means for farm type, debt levels, equity levels, and number of children	76

86	Mean rating scores for the frequency with which significant anxiety was experienced for debt as well as general farming issues. Scale based on 1=often through to 5=seldom. Means for farmer age (years), highest formal education level, and gender	76
87	Distribution of farmers' rating on the truth of 'managerial approaches' questions. Rated on 1 (true) to 5 (not true) with 2-4 expressing degrees of truth to not true. Row based percentages. 'Ave.' is the average score for the question (out of 5)	78
88 a	(First half) Mean scores of farmers' rating on the truth of 'managerial approaches' questions. Rated on 1 (true) to 5 (not true) with 2-4 expressing degrees of truth to not true according to farm types	79
88 b	(Second half) Mean scores of farmers' rating on the truth of 'managerial approaches' questions. Rated on 1 (true) to 5 (not true) with 2-4 expressing degrees of truth to not true according to farm types	80
89	Mean scores of farmers' rating on the truth of 'managerial approaches' questions. Rated on 1 (true) to 5 (not true) with 2-4 expressing degrees of truth to not true according to Total Farm Capital	81
90	Mean scores of farmers' rating on the truth of 'managerial approaches' questions. Rated on 1 (true) to 5 (not true) with 2-4 expressing degrees of truth to not true according to debt levels (\$)	82
91	Mean scores of farmers' rating on the truth of 'managerial approaches' questions. Rated on 1 (true) to 5 (not true) with 2-4 expressing degrees of truth to not true according to equity levels (%)	83
92	Mean scores of farmers' rating on the truth of 'managerial approaches' questions. Rated on 1 (true) to 5 (not true) with 2-4 expressing degrees of truth to not true according to the farmers' age (years) and highest level of formal education	84
93	F test significance probabilities for the 'treatment' listed at the head of each column for the 'managerial approaches' questions	85
94	Percentage of farmers in each farm type category receiving income from the listed categories	86
95	Percentage of farmers in each equity and total farm capital category receiving income from the listed categories	87
96	Percentage of farmers in each Age and Education category receiving income from the listed categories	88
97	Items of income, expenditure and annual cash surplus for the whole sample	88

98	Distribution of income and expense variables. Percentage falling into each category ...	90
99	Distribution of further income and expense variables. Percentage falling into each category	91
100	Means for a range of per labour unit income and expense categories per farm type. First half	92
101	Means for a range of per labour unit income and expense categories per farm type. Second half	93
102	Means for a range of per labour unit income and expense categories according to debt levels. Table 103 contains further categories	94
103	Means for a range of per labour unit income and expense categories according to debt levels. Table 102 contains further categories	94
104	Means for a range of per labour unit income and expense categories according to equity levels. Table 105 contains further categories	95
105	Means for a range of per labour unit income and expense categories according to equity levels. Table 104 contains further categories	95
106	Means for a range of per labour unit income and expense categories according to labour levels. Table 107 contains further categories	96
107	Means for a range of per labour unit income and expense categories according to labour levels. Table 106 contains further categories	96
108	Means for a range of per labour unit income and expense categories according to farmer's age (years). Table 109 contains further categories	97
109	Means for a range of per labour unit income and expense categories according to the farmer's age (years). Table 108 contains further categories	97
110	Means for a range of per labour unit income and expense categories according to farmer's highest formal education level. Table 111 contains further categories	98
111	Means for a range of per labour unit income and expense categories according to the farmer's highest formal education level. Table 110 contains further categories	98
112	Return on capital for a series of categories. The return was calculated from the H11 series of questions (see appendix). Only 94 respondents provided this income and expenditure information to the detail requested	99
113	Distribution of a number of physical production outputs. Percentage of farmers falling in each range (column percentages)	100

114	Distribution of Solids not Fat for dairy farms ... per hectare and per cow. Percentage of farmers falling in each range (column percentages)	101
115	Physical production levels ... Kgs milk solids and stock units (Note... this table is based on data from question D7 (vi). The remaining tables on physical production are based on questions H4 to H10	102
116	Distribution of farmers' management attitudes. Percentage of farmers falling in each scale value (column percentages)	103
117	Mean values on a 1 to 5 truth scale (1=true 5=not true) for statements reflecting farmers' management attitudes for Total Farm Capital groups	104
118	Mean values on a 1 to 5 truth scale (1=true 5=not true) for statements reflecting farmers' management attitudes for debt groups	104
119	Mean values on a 1 to 5 truth scale (1=true 5=not true) for statements reflecting farmers' management attitudes for equity groups	105
120	Mean values on a 1 to 5 truth scale (1=true 5=not true) for statements reflecting farmers' management attitudes for a range of final year education grades	105
121	Mean values on a 1 to 5 truth scale (1=true 5=not true) for statements reflecting farmers' management attitudes relative to the farmer's age (years)	106
122	Mean values on a 1 to 5 truth scale (1=true 5=not true) for statements reflecting farmers' management attitudes relative to the farmer's highest level of formal education	106
123	Distribution of a number of farmers' biographical data. Percentage of farmers falling in each range	107
124	Means for a range of farmers' biographical variables according to farm type	108
125	Means for a range of farmers' biographical variables according to total farm capital levels	109
126	Means for a range of farmers' biographical variables according to farms' equity levels	109
127	Means for a range of farmers' biographical variables according to farms' age groups	110
128	Means for a range of farmers' biographical variables according to farmers' education level	110
129	Distributions of the number of children farmers' have in each age grouping	111

130	Mean number of children within each age grouping by farm type	112
131	Mean number of children within each age grouping by farmer age group	112
132	Mean number of children within each age grouping by farmer highest level of formal education groups	113
133	Mean number of children within each age grouping by farmers' average grading in the farmer's last year of formal education	113

1 Introduction

Despite debt funding being an essential part of modern farming, the growing debt on many NZ farms can potentially cause significant problems given the inherent volatility of product prices. Currently, the human side of this debt situation has not been researched, yet the human factor (manager/owner) is responsible for all decision making, including debt related decisions. Understanding managers and their approach to debt decision making is critical to comprehending the human side of debt.

Furthermore, the decisions collectively have a major impact on how well the NZ economy performs. The objective of this work is to better understand the farmers' views, attitudes and concerns, methods of analysing their debt situation and approaches to debt on their farms. This data will enable modelling the debt situation and allow prediction of outcomes, as prices, yields and government regulations vary. The implications for liquidity, solvency and profitability also needs to be explored.

The main encompassing hypothesis in this study is that the returns from using debt are dependent on the nature and ability of the farm manager/owner and need to be fully explored. Discovering the components of managers' that are effective in their use and control of debt has implications for all farmers who will need alerting to how their individual situations can be improved.

Sub-objectives of the study also include:

- 1) discovering the farm and farmer situations associated with different debt levels to determine the risk and vulnerability situation on NZ farms,
- 2) testing whether farmer's financial knowledge is correlated with debt levels and vulnerability to debt crises,
- 3) assessing whether farmer's personal and family attributes are correlated with stress causing debt levels,
- 4) discovering whether the farmer's inability to accurately analyse each debt situation leads to high debt levels,
- 5) finding out whether high debt levels are associated with farmers who tend to be overly optimistic over future conditions, and other related and similar issues.

While a lot of information is known about total debt and servicing costs, and average debt levels, little is known about the situation on individual farms and the human side of the use, benefits, abuse, and stress caused by farm debt. This study aims to rectify this situation.

This report reviews all the data collected for further analyses providing a synopsis of all the information. It is presented using a series of tables with brief commentary. Subsequently, in depth analyses will be conducted and presented in the form of much shorter research papers.

A mail survey was used to obtain the information using a random sample of all types of NZ farms. Selection ensured dairy farms were well represented as considerable debt occurs on these farms (average debt on dairy farms is approx. \$2.8 million, whereas on sheep and beef farms the figure is more like \$0.62 million). The sample was stratified according to farm size, regional location, and farm type.

This report proceeds through describing the debt and personal situation of the respondents using tables and statistical analyses. The personal characteristics of the farmers relative to their debt levels is highlighted, as are the stress levels experienced by the sample. The data enables determining the background of farmers who have had financial problems and are heavily indebted.

In addition, the tables describe the history of the farms' debt levels showing the growth pattern of the debt, and the investments which the debt was used for. This allows examining whether debt has been used for consumption.

Some 2300 randomly selected farmers were stratified by region, farm type, and hectareage. Only full time farmers were included. Survey schedules were pretested on a small sample.

While there has been a lot of statistical investigation about bank lending and farmer borrowing (NZ Stats, Dairy NZ, and Beef and Lamb surveys), there is no knowledge of the personal factors associated with the reported debt and lending. In that it is the farm manager and their families/backers, in conjunction with their bankers and relatives that actually make the decisions on borrowing, and take the responsibility of the outcomes, a study of these factors is long overdue.

This monograph reports on all the data collected and provides a base line for considering 2015 debt issues. It is important to have a complete record for current and future analyses. This report provides this record. As noted, using the data presented in this report, several additional studies are to be undertaken and reported in the literature. The emphasis in this report is on providing the core data of general interest to people involved in primary production.

The questionnaire used is presented in the appendix.

2 Details of the farmer's responding and their farms

The survey was posted in the winter of 2015 utilizing the fact that farmers are more likely to answer surveys over their less busy time. The schedule was eight pages (see appendix) which experience has shown is a reasonable length for farmers to respond to. The survey used numbered fully paid return envelopes enabling reminder letters to be sent and eventually another copy of the schedule once reply postings waned.

The survey schedule requested farm information, debt and asset information, farmer information (objectives, education and training, management style), stress level assessments, use of debt (property purchase, property development, machinery and

building development, maintenance, consumption...), profitability information and production levels.

In contrast to other possibilities, a postal survey was used to obtain the financially stringent data for as wide a range of farmers as possible in terms of type, size and regions. While interview surveys can gather extra data, the funds available did not allow this approach. Answering the questions required entering numbers or ticking options (see the appendix).

The questionnaire was developed from studying past surveys, relevant literature, and consulting with experts. The questionnaire was vetted by the LU Human Ethics committee which resulted in some changes to ensure approval. This version was then tested by asking some 20 farmers to complete it and subsequently make suggestions on improvements. These were all included before final printing and posting.

While 2300 schedules were posted, the inevitable non completed returns occurred due to deaths and ineffectual addresses (wrong, shifted). After the reminder and a posting of another questionnaire, 414 completed schedules were received giving an effective response rate of nearly 19%. This is greater than many postal surveys particularly given the sensitive nature of some of the questions (income and expense data for example). The anonymity of the replies was stressed and strictly adhered to. The data base of the results does not have any identifying information.

Table 1 contains a comparison of the numbers of schedules returned relative to the numbers posted. The latter was based on a percentage of the population statistics.

The farm classification system used in the questionnaire was not totally identical to the official data base categories leading to some cross overs. For example, the data base had a category 'sheep and beef' which was assumed to be the 'same' as the extensive sheep category in the survey schedule. This is unlikely to be totally correct as some would undoubtedly be 'intensive'.

For other than the horticultural categories, the sample did not, in theory, contain any properties less than 50 hectares. However, some respondents managed smaller farms suggesting the population data base was incorrect in some cases.

Table 1

Number of properties in each class for both the population proportion* and responding sample by farm size (hectares owned)

Property type+	Total	<= 50 hect's	> 50 hect's	>150 hect's	>250 hect's	>400 hect's	>550 hect's	>700 hect's	>1000 hect's
Int. sheep ppn	204	0	61	48	38	17	10	7	23
Int. sheep smp	94	0	26	14	19	9	10	5	11
Ext. sheep ppn	609	0	116	103	103	76	45	53	113
Ext sheep smp	48	1	3	7	4	8	3	7	15
Deer ppn	52	0	32	11	6	1	1	0	1
Deer smp	10	1	2	3	1	2	0	0	1
Beef ppn	312	0	186	62	34	12	5	5	8
Beef smp	65	6	28	12	4	7	1	2	5
Dairy ppn	707	0	411	161	84	29	11	8	3
Dairy smp	121	1	38	32	23	9	6	4	8
Other anim ppn	10	6	3	1	0	0	0	0	0
Other anim smp	4	1	1	1	0	1	0	0	0
Fruit/vit ppn	94	82	11	1	0	0	0	0	0
Fruit/vit smp	16	12	3	0	0	1	0	0	0
Arable ppn	43	0	18	12	7	3	1	1	1
Arable smp	11	1	2	2	4	2	0	0	0
Nur/flrs. ppn	45	45	0	0	0	0	0	0	0
Nur/flrs. smp	5	4	1	0	0	0	0	0	0
Veges. ppn	46	41	5	0	0	0	0	0	0
Veges. smp	4	3	0	0	0	0	1	0	0
Grazing ppn	86	0	50	24	10	2	0	0	0
Grazing smp	20	4	11	3	1	0	1	0	0
Other ppn	24	0	17	6	1	0	0	0	0
Other smp	7	2	3	0	1	1	0	0	0
Totals smp	405	36	118	74	46	40	22	18	40
Totals ppn	2232	174	910	429	273	140	73	74	149
% actual sample to popn. sample	18.1	20.7	13.0	17.2	16.8	28.6	30.1	24.3	26.8

* Based on a potential sample of 2300 being 6.4038% of the total population in each class

+ Abbreviations - ppn=population; smp=sample; Int. = intensive; Ext. = extensive (sheep and beef); anim = animal; vit = viticulture; Nur/flrs = nursery and flowers; Veges. = vegetables.
Note ... 'other' is mainly dry stock.

The Wilcoxon Signed Ranks test showed the differences between the population numbers (after adjusting for totals in each group according to the response rate) and sample group numbers was NOT significant ($p=.223$), AND similarly for the Marginal Homogeneity test ($p=.906$).

Table 2 summarizes the percentage of the responding sample falling into each farm type relative to the national statistics percentages.

Table 2

Percentage of total population and responding sample in each farm type category

Farm type	% in the population	% in the responding sample
Intensive sheep	9.14	23.21
Extensive sheep	27.28	11.85
Deer	2.33	2.47
Beef	13.98	16.05
Dairy	31.68	29.88
Other animal	0.45	0.99
Fruit/viticulture	4.21	3.95
Arable	1.93	2.72
Nursery/flowers	2.02	1.23
Vegetables	2.06	0.99
Grazing	3.85	4.94
Other	1.07	1.73

Despite the sheep type differences, the two columns are not significantly different (Wilcoxon Signed Ranks test $p=0.774$).

Overall, given the comparisons presented in the tables, and the statistical tests, it is clear the sample was a largely representative set of respondents.

To further describe the responding farmers and their farms Table 3 presents the distribution of the number of labour units on each farm. These figures include the manager who, on NZ farms, contributes virtually a full time unit of physical input. Statistical significance information is given at the end of the table showing which groupings are statistically different. This largely shows the labour situation across farm types is different.

The other important component to the farm inputs is the land leased and/or rented adding to the total area available for production. Table 4 contains this information indicating the base size of the farms in the survey.

Table 3

Distribution of labour units by farm type (includes the manager) ... number of farms in each category of labour unit number (first number). The second figure in each cell is the row percentage.

Farm type/ labour units	<= 1	<= 2	<= 3	<= 4	<= 5	<= 6	<= 7	<= 8	<=9	<= 10	> 10	Ma x	Ave
Intensive sheep	41 45	39 42	7 8	4 4	0 0	0 0	0 0	0 0	0 0	0 0	1 1	47	2.0
Extensive sheep	4 9	28 61	6 13	2 4	2 4	1 2	1 2	0 0	1 2	1 2	0 0	9.5	2.5
Deer	5 50	3 30	2 20	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3	1.5
Beef	32 52	24 39	4 6	0 0	0 0	1 2	1 2	0 0	0 0	0 0	0 0	7	1.4
Dairy	4 3	31 26	22 19	21 18	13 11	5 4	4 3	5 4	2 2	3 2	8 8	33	4.7
Other animal	0 0	4 10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	2	1.7
Fruit/viticulture	4 33	3 25	1 8	1 8	0 0	0 0	1 8	0 0	0 0	0 0	2 17	20	4.8
Arable	4 4	4 4	1 9	2 18	0 0	0 0	0 0	0 0	0 0	0 0	0 0	4	1.8
Nursery/flower	4 80	1 20	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	2	0.9
Vegetables	1 25	2 50	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 25	30	8.7
Grazing	13 65	7 35	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	2	1.1
Other	5 71	0 0	1 14	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 14	18	3.6

An F test with the farm types as treatments gives a F of 4.786 with 390 df which is a significance probability of .000 showing the 'treatments' are significantly different.

A t test of the differences between the cell averages shows the following farm type pairs are significantly different (* 20% or less, ** 10% or less, *** 5% or less, **** 1% or less) 1 & 5 ****; 1 & 7 **; 1 & 10 ***; 1 & 3 *; 1 & 4 ****; 1 & 5 ****; 1 & 7 ***; 1 & 9 **; 1 & 10 ****; 1 & 11 ****; 3 & 5 ***; 3 & 7 *; 3 & 9 *; 3 & 10 *; 3 & 11 **; 4 & 5 ****; 4 & 7 ****; 4 & 10 ****; 4 & 12 ***; 5 & 8 **; 5 & 9 **; 5 & 11 ****; 6 & 9 **; 6 & 11 ***; 7 & 8 *; 7 & 11 **; 8 & 9 *; 8 & 10 *; 8 & 11 ***; 10 & 11 ***; 11 & 12 **. This means 31 cells were not significantly different (many of the cells had zero farms, particularly for horticultural properties, giving rise to many of these non-significant combinations. Thirty two combinations were significantly different.

Table 4

Area of land leased/rented by farm type (hectares) relative to land owned

Farm type	Mean (has)+	Minimum (hectares)	Maximum (hectares)	No of farms leasing /renting	% of farms leasing /renting	Land owned (has)	Total Land (has)*
Intensive sheep	114.0	1.6	440	25	26.6	827.30	928.8
Extensive sheep	190.9	12.0	760	18	37.5	1450.00	1582.2
Deer	43.0	3.0	100	3	30.0	307.2	350.2
Beef	83.5	5.0	298	17	26.1	341.3	408.9
Dairying	106.8	2.0	650	69	47.9	344.0	433.8
Other animal	341.0	341	341	1	25.0	194.0	364.5
Fruit/viticulture	15.7	9.6	22	2	12.5	48.2	58.7
Arable	46.0	6.0	93	5	45.4	249.4	295.4
Nursery/flower	0.5	0.5	0.5	2	40.0	21.2	21.7
Vegetables	227.0	2.0	900	4	100.0	163.2	390.2
Grazing	41.4	8.0	149	6	30.0	133.2	174.6
Other	306.5	13.0	600	2	28.6	155.6	462.1

+ Area averaged across only the farms leasing/renting.

* Includes leased/rented land averaged across ALL farms.

Overall, 35.3% of all farms lease or rent an additional, on average, 110.4 hectares of land.

3 Farmers' experience and farm ownership arrangements

A farmer's experience is an important soft asset in decision making and may well influence debt decisions and any problems caused by debt. Anxiety may also relate to not only the ownership level held by the farmer, but also the percentage of the decisions the farmer is responsible for. Accordingly experience and ownership information was collected and is presented in Table 5 as well as the number of farms held on average by each manager. There are significant differences across farm types in some cases as shown by the F statistic probabilities.

Table 5

Managing experience and farm ownership

Farm type	Yrs. of farm management experience	Yrs. of farm asset ownership	% of decisions by manager	No. of farms held, at least in part, by farmers	Farmers % holding of farm assets
Intensive sheep	34.9	31.2	95.1	1.35	77.9
Extensive sheep	37.9	34.0	88.0	1.47	76.0
Deer	35.9	33.8	91.5	1.10	82.0
Beef	36.5	33.9	95.4	1.20	87.3
Dairy*	34.2	28.7	80.6	2.12	77.2
Other animal	33.2	24.0	81.2	1.00	68.7
Fruit/viticulture	34.6	34.5	93.9	1.87	85.3
Arable	40.7	39.0	93.64	1.09	64.1
Nursery/flowers	24.8	24.8	98.0	1.00	90.0
Vegetable	39.0	39.0	87.5	1.00	62.5
Grazing	41.8	34.2	92.7	1.55	95.8
Other	32.3	30.6	85.7	2.57	100.0
F probability	.247	.100	.000	.001	.018

* The number of share milker dairy farmers was 9, being 7.4% of the dairy respondents

Similarly, ownership arrangements may well influence the debt situation, and similarly may related to anxiety levels. This information is covered in Table 6. It is clear sole trader, partnership and trust ownership is dominant. The situation across farm types is largely similar other than for the equity partnership and company situations. When it comes to the ownership type percentages across the total farm capital groups (Table 7) there are significant differences across TFC groupings. It seems ownership structures have been set up differently, perhaps under advice, under different investment levels. There is a shift to more sophisticated ownership as the TFC increases.

Somewhat similar comments apply across the farms when grouped according to their equity levels (Table 8). Trusts and companies decline as equity declines. Probably these ownership systems are correlated with owners willing to take greater risk given their personal risk is reduced.

Table 6

Percentage of farm assets held by the various ownership possibilities by farm type

Farm type	Sole trader	Partnership Spouse/ family	Held in trusts	Equity partnership	Private company	Public company	Other
Intensive sheep	14.16	41.12	23.99	2.34	15.83	0	0.42
Extensive sheep	11.58	42.49	36.19	0.52	9.19	0	0
Deer	20.00	30.5	39.5	0	10.00	0	0
Beef	34.11	31.85	23.34	0.77	6.08	0.77	0
Dairy	6.07	26.57	34.23	7.44	23.64	1.16	0.07
Other animal	0	50.00	25.00	0	25.00	0	0
Fruit/viticulture	26.87	31.25	6.25	0	35.62	0	0
Arable	10.91	33.64	26.36		29.09	0	0
Nursery/flowers	20.00	30.00	50.00	0	0	0	0
Vegetables	0	25.00	25.00	0	50.00	0	0
Grazing	21.00	42.50	28.00	3.50	5.00	0	0
Other	14.29	50.00	21.43	0	14.29	0	0
Column mean	14.92	36.24	28.27	1.32	18.64	0.16	0.04
Column signif (Chi sq test)	NS	NS	NS	.045	NS	.001	.001

The only categories that are significantly different from the expected value (14.92) across farm types are equity partnerships, public companies and 'other'. None of these categories are particularly important.

Table 7

Percentage of farm assets held by the various ownership possibilities by Total Farm Capital groups*

Total farm capital Million \$	Sole trader	Partnership Spouse/ family	Held in trusts	Equity partnership	Private company	Public company	Other
<= 2	36.60	40.49	16.90	0	3.86	2.14	0
>2 and <=4	18.41	43.38	26.14	0.81	11.46	0	0
>4 and <=6	6.97	38.88	28.46	1.49	23.60	0	0.60
>6 and <=8	6.78	35.94	30.94	3.33	23.00	0	0
>8 and <=10	8.00	33.29	47.86	0.14	10.71	0	0
>10 and <=12	0.42	37.46	43.04	8.33	10.75	0	0
>12 and <=20	5.00	28.23	25.00	7.94	33.00	0.59	0.23
>20	3.00	9.71	37.37	11.86	37.49	0.57	0
Col average	10.65	33.42	31.96	4.24	19.23	0.41	0.10

* Note that the Chi sq test shows the column components are significantly different each with a sign prob of .000

Table 8

Percentage of farm assets held by the various ownership possibilities by equity groups*

Percentage Equity	Sole trader	Partnership Spouse/ family	Held in trusts	Equity partnership	Private company	Public company	Other
100 %	24.19	45.45	19.69	1.24	8.60	0.83	0
100 to > 90 %	11.99	38.97	34.48	0	14.45	0	0.10
90 to > 80 %	8.64	35.39	28.52	1.59	23.82	1.14	0.91
80 to > 70 %	8.87	39.85	29.70	3.12	18.45	0	0
70 to > 60 %	6.98	22.61	38.36	5.23	26.82	0	0
60 to > 50 %	11.21	18.96	22.69	18.62	27.83	0.69	0
< 50%	8.29	18.75	46.36	1.79	24.11	0.71	0
Col average	11.45	31.43	31.40	4.51	20.58	0.48	0.14

* Note that the Chi sq test shows the column components are significantly different each with a significance probability of 0.000

4 Total farm capital, debt levels and equity

Equity levels are a critical farm statistic representing part of the risk a farmer is confronted with, and similarly a figure determining borrowing potential for development or simply to cover cash deficits. Related to equity, of course, is the total capital levels on a farm and the debt levels. The following tables provides information on all this data across farm types, debt levels and other farm characteristics. They also present various categories of assets and debt relating this data to farm types and other characteristics.

Table 9

Equity group by farm type ... row percentages

Farm type Equity % range	No. of farms	100%	100-90 %	90-80 %	80-70 %	70-60 %	60-50 %	< 50 %	Ave Equity %
Intensive sheep	90	45.5	20.0	16.7	3.3	8.9	2.2	3.3	89.4
Extensive sheep	47	17.0	25.5	14.9	23.4	6.4	6.4	6.4	82.0
Deer	9	22.2	55.5	11.1	11.1	0	0	0	91.3
Beef	61	44.3	24.6	11.5	3.3	4.9	6.6	4.9	87.5
Dairy*	119	10.9	15.1	9.2	15.1	19.3	15.1	15.1	71.2
Other animal	4	50.0	0	0	0	50.0	0	0	81.9
Fruit/viticulture	16	62.5	0	6.2	12.5	6.2	6.2	6.2	87.6
Arable	11	18.2	54.5	0	9.1	18.2	0	0	89.0
Nursery/flowers	5	60.0	40.0	0	0	0	0	0	98.0
Vegetable	4	50.0	25.0	25.0	0	0	0	0	95.1
Grazing	19	47.4	26.3	10.5	10.5	0	5.3	0	93.4
Other	7	57.1	14.3	0	0	28.6	0	0	89.2
Sign probability	.000 F								.000 F

Table 10 Estimates of current market value of total farm and non-farm capital components (the figure in brackets is the number of farms offering the particular information). The third figures is the average assuming ALL farms had answered so assuming a non-answer was indeed a zero. If the third figure is missing this means all farmers answered.

Farm type	Land and buildings	Livestock	Plant and machinery	Working capital	Co-op shares	Non farm assets
Intensive sheep	5,725,170 (90)	661,750 (88) 647,040	166,400 (90)	7,480 (66) 5,480	47,980 (47) 25,060	615,560 (32) 218,860
Extensive sheep	7,280,720 (47)	1,026,590 (46) 1,004,750	237,060 (47)	58,060 (35) 43,240	121,760 (24) 62170	963,710 (17) 348,570
Deer	5,938,890 (9)	700,000 (9)	341,110 (9)	60,000 (4) 26,670	26,200 (5) 14,550	1,216,670 (6) 811,110
Beef	3,089,070 (61)	378,380 (54) 334,960	149,890 (54) 132,690	40,580 (36) 23,950	24,160 (19) 7,520	857,020 (22) 309,090
Dairy	11,032,390 (118)	1,344,220 (112) 1,275,870	367,210 (109) 329,870	46,030 (77) 30,040	1,158,450 (108) 1,060,280	658,850 (64) 357,340
Other animal	1,462,500 (4)	67,330 (3) 50,500	76,500 (4)	66,750 (4)	0 (0)	102,000 (1) 25,500
Fruit/viticulture	5,656,875 (16)	10,000 (4) 2,500	2,037,690 (13) 1,655,620	1,333,780 (9) 750,250	65,690 (4) 16,420	613,800 (10) 383,620
Arable	9,320,450 (11)	156,670 (9) 128,180	380,500 (10) 345,910	316,870 (8) 230,450	105,330 (6) 57,450	2,106,620 (7) 1,340,580
Nursery/flowers	875,200 (5)	26,500 (2) 10,600	18,200 (5)	27,660 (2) 11,060	500 (1) 100	207,500 (2) 83,000
Vegetables	11,750,000 (4)	1,650,000 (2) 825,000	2,012,500 (4)	1,082,500 (4)	75,000 (2) 37500	1,150,000 (4)
Grazing	6,341,050 (19)	515,470 (16) 434,080	186,000 (17) 166,420	156,500 (10) 82,370	531,000 (8) 223,580	500,000 (6) 157,890
Other	6,300,000 (7)	6,685,000 (6) 5,730,000	267,500 (6) 229,290	55,000 (4) 31,430	5,000 (2) 1,430	8,300,000 (6) 7,114,290
Mean across all properties answering	7,202,060 (391)	958,870 (351) 860,770	328,310 (368) 309,000	110,990 (259) 73,520	602,580 (226) 348,290	952,140 (175) 426,150

Across farm types equity levels are significantly different with $p=.000$ (Chi sq). Some of the horticultural properties exhibit the highest equity, while dairy farmers have by far the lowest.

Table 10 shows the total farm/property investment, on average, is \$8,793,640. In addition, non-farm assets are somewhere between \$952,140 and \$426,150. This investment gives rise to the non-farm income figures presented later.

Note that for some property types a particular category may not be relevant. For example, horticultural operations will, mainly, not have livestock. Also note many farmers did not offer an estimate of working capital as, no doubt, it fluctuated throughout the year. And it must be remembered that many non-dairy farms do not hold co-operative shares.

Table 11 Debt levels by type of debt... NZ dollars (the figure in brackets is the number of farms offering the particular information). The third figures is the average assuming ALL farms had answered so assuming a non-answer was indeed a zero.

Farm type	Long term mortgages	Bank overdraft	Supplier/ HP credit	Family loans	Non-farm debt	Ave total debt	Total no. of farms
Intensive sheep	752270 (80) 654150	118480 (69) 88860	9150 (41) 4080	137040 (54) 80440	10360 (42) 4730	809900	92
Extensive sheep	1841750 (40) 1534790	180520 (31) 116580	48600 (10) 10120	1047690 (13) 283750	0 (5)	1945250	48
Deer	687500 (8) 550000	30000 (6) 18000	10000 (4) 4000	35000 (4) 14000	0 (3)	586000	10
Beef	321760 (51) 252460	88780 (41) 56000	25320 (31) 12080	82190 (32) 40460	0 (26)	361000	65
Dairy	4554590 (112) 4215820	681330 (67) 377260	14770 (22) 2680	341630 (35) 98820	50220 (18) 7470	4694580	121
Other animal	175760 (4)	14070 (4)	13330 (3) 9998	0 (2)	0 (2)	199830	4
Fruit/viticulture	1140000 (14) 997500	22000 (13) 17870	45910 (11) 31560	1000000 (11) 687500	0 (10)	1734440	16
Arable	1425870 (8) 1037000	191000 (5) 86820	25000 (2) 4540	1500000 (2) 272730	0 (1)	1401090	11
Nursery/flowers	19130 (4) 15300	3750 (4) 3000	0 (3)	0 (3)	0 (3)	18310	5
Vegetables	2833330 (3) 2125000	0 (2)	125000 (3) 93750	33330 (3) 25000	50000 (2) 25000	2243750	4
Grazing	2580770 (13) 1677500	82610 (14) 57830	0 (7)	24440 (9) 11000	0 (7)	1746320	20
Other	2230000 (6) 1911430	105330 (6) 90280	0 (3)	3000000 (4) 1714280	0 (3)	3716000	7
Mean across all properties answering	2184990 (343) 1850500	253210 (262) 163800	21290 (140) 7360	360850 (172) 153250	11790 (122) 3550	2174910	405

Debt levels are significantly higher on dairy farms with a big drop down to 'vegetables' and 'other' though the numbers in these categories is relatively low reflecting their importance in the total primary producing population. Extensive sheep also have quite high debt.

Table 12 gives total farm capital divided by a number of productive factors. The range across farm types in the TFC per ha is quite extensive with horticulture leading the way closely followed by dairy. This is to be expected. The ranges are quite extensive on a per labour unit basis which is somewhat surprising.

Table 12

Total farm capital invested according to a range of divisors, by farm type

Farm type	Total farm Capital (\$)	TFC/ha (\$)	TFC/labour unit (\$)	TFC/ kg MS (dairy)	TFC/SU For non dairy
Intensive sheep	6,569,500	7,940.9	3,284,750	-	1974.01
Extensive sheep	8,627,940	5,453.1	3,451,180	-	1280.49
Deer	7,021,220	20,049.2	4,680,810	-	NA*
Beef	3,588,190	8,775.2	2,562,990	-	627.52
Dairying	13,728,450	31,645.5	2,920,950	51.90	-
Other animal	1,656,250	4,543.3	974,260	-	NA*
Fruit/viticulture	8,081,660	137,654.0	1,683,680	-	-
Arable	10,082,440	34,136.1	5,601,350	-	4290.40+
Nursery/flowers	915,160	42,095.7	1,016,840	-	-
Vegetables	15,707,500	40,249.8	1,805,460	-	-
Grazing	7,247,500	41,509.2	6,588,640	-	NA*
Other	7,891,580	17,078.7	2,192,100	-	-

* S Units were not provided by the deer/other animal/grazing farmers

+ Stock numbers will reflect that only a proportion of the land is allocated to animals

Table 13 Percentage of farmers with total farm capital ranges by equity. Row percentages.

Equity % * TFC groups	< 2 mill	2 – 4 mill	4 – 6 mill	6 – 8 mill	8 – 10 mill	10 – 12 mill	12 – 20 mill	> 20 mill
100 %	33.3	35.8	15.4	4.1	3.2	3.2	0.8	4.1
100 to > 90 %	19.3	21.7	21.7	10.8	9.6	6.0	7.2	3.6
90 to > 80 %	6.7	35.5	8.9	8.9	17.8	4.4	11.1	6.7
80 to > 70 %	5.0	17.5	27.5	10.0	15.0	10.0	7.5	7.5
70 to > 60 %	13.6	11.4	13.6	11.4	11.4	6.8	13.6	18.2
60 to > 50 %	6.9	3.4	13.8	6.9	6.9	10.3	27.6	24.1
< 50%	10.7	10.7	17.9	3.6	7.1	10.7	17.9	21.4
Col average	13.6	19.4	17.0	8.0	10.1	7.3	12.2	12.2

* The Friedman's test shows the distribution of the columns is not 'significantly' different between columns (but with a probability .175 they are not far from being conclusively different)

Table 13 provides information showing the wide range of investments occurring with 12% of farms involving greater than \$20 million, and at the other end 14% less than \$2 million. The farms with greater investment tend to have lower equity.

It is clear that dairying does have the highest debt levels on average across farm types (Table 14). The same applies for the debt per labour unit. Per productive unit, it is surprising that extensive sheep farming has the highest debt.

Table 14

Total farm debt (TFD) invested according to a range of divisors, by farm type

Farm type	Total debt (\$)	TFD/ha (\$)	TFD/labour unit (\$)	TFD/ kg MS (dairy)	TFD/SU For non dairy
Intensive sheep	809900	979.3	355730	-	142.7
Extensive sheep	1945250	1341.5	653020	-	257.5
Deer	586000	1908.8	326170	-	NA*
Beef	361000	1058.6	435450	-	133.3
Dairying	4694580	13647.0	1116010	13.97	-
Other animal	199830	1030.0	99910	-	NA*
Fruit/viticulture	1734440	35984.2	199030	-	-
Arable	1401090	5626.9	700300	-	+8903.6
Nursery/flowers	18310	871.9	16810	-	-
Vegetables	2243750	13765.3	86460	-	-
Grazing	1746320	13130.2	1591310	-	NA*
Other	3716000	23820.5	281520	-	-

* S Units were not provided by the beef/deer/other animal/grazing farmers

+ Stock numbers will reflect that only a proportion of the land is allocated to animals

Table 15

Percentage of farmers with total farm debt ranges by equity. Row percentages.

Equity % * TFD groups	Zero	<= 250000	251-500000	501-750000	750001-1 mill	1-2 mill	2-3 mill	3-5 mill	5-8 mill	> 8 mill
100 %	100	0	0	0	0	0	0	0	0	0
100 to > 90 %	0	60.2	18.1	10.8	4.8	6.0	0	0	0	0
90 to > 80 %	0	6.7	26.7	17.8	2.2	31.1	6.7	2.2	2.2	4.4
80 to > 70 %	0	0	5.0	10.0	10.0	35.0	25.0	7.5	0	7.5
70 to > 60 %	0	2.2	11.4	0	9.1	15.9	15.9	15.9	11.4	18.2
60 to > 50 %	0	0	3.4	3.4	0	3.4	17.2	17.2	31.0	24.1
< 50%	0	0	0	0	7.1	3.6	17.9	14.3	21.4	35.7
Col average	14.3	9.9	9.2	6.0	4.7	13.6	11.8	8.2	9.4	12.8

* The Friedman's test shows the distribution of the columns is not 'significantly' different between columns (with a probability .517 they are far from being different).

As would be expected, the data more or less fills out the diagonal.

Table 15 contains the debt level distributions for different equity levels. The data is clustered around the higher debt/lower equity area of the table.

Table 16 summarizes the asset/debt/equity data both per labour unit and per hectare.

These are both productive units. In the table, NA signifies 'not available'.

Table 16

Average \$Assets/debt/equity per labour unit by farm type and Total Farm Capital.
And \$debt per hectare by farm type, TFC and labour levels. All for 2015. (Data from Q D13)

FARM TYPE	\$ Assets per person	\$ Debt per person	\$ Equity per person	\$ Assets per hectare	\$ Debt per hectare	\$ Equity per hectare
Int. sheep	3243090	414030	2664870	19281	1301	14328
Ext. sheep	3243790	706710	2552250	8265	1032	7166
Deer	4287080	381460	3905620	20850	591	20259
Beef	3551670	386070	3202460	19994	2238	17404
Dairy	2914540	100695 0	2051250	40297	13343	28779
Other animal	1129110	50670	1078440	23987	0	23987
Fruit/viticulture	1796820	190190	1587070	195331	11337	182769
Arable	5603950	116481 0	4425260	41806	6692	32883
Nursery/flowers	1547200	1500	1545700	100868	0	100868
Vegetables	1947060	104440	1842610	NA	0	NA
Grazing	4487120	666630	3812020	42698	3163	38665
Other	2474000	120000	2294000	105801	4174	99954
Sign prob.(F)	.100	.245	.000	.000	.000	.000
TOTAL FARM CAPITAL						
< 2 million	1787720	107280	1459120	73599	3466	64793
2 - 4 million	2872670	289426	2615170	23582	1293	22430
4 - 6 million	3067490	556960	2499190	25208	4418	20509
6 - 8 million	3573430	659350	2914080	28387	5860	22017
8 - 10 million	3563900	759070	2803470	41717	6178	23391
10 - 12 mill'n	5016830	952320	4237420	37771	10034	33079
12 - 20 mill'n	3592220	120872 0	2775880	45825	15649	27266
> 20 million	4588795 0	164029 0	2946640	37416	16295	28850
Sign prob.(F)	.018	.001	.000	.000	.000	.000
LABOUR UNITS						
<= 1	3817220	395440	3292160	47690	3280	41330
1 - 2	3087990	619130	2567980	29100	4520	25550
2 - 3	2798830	597270	2201620	37160	8160	29010
3 - 4	3273300	104649 0	2357600	40790	12240	28940

4-5	2662690	1140900	1698310	29320	13520	18740
5 - 6	2864680	1050130	1814550	30640	11590	19050
7 - 9	2982330	1086890	1892760	31220	11610	19570
> 9	2365180	761300	1602210	49980	16180	32250
Sign prob.(F)	.614	.010	.135	.432	.000	.440

5 The managerial style of the responding farmers

It is very likely that farmer attitudes influence the use and impact of debt. Accordingly information was obtained on each farmers 'managerial style' which expresses the impact of personality on how a farmer operates... and thus the farmers' 'managerial style'.

Table 17

Distribution of farmers' rating on the truth of managerial style questions. Rated on 1 (true) to 5 (not true) with 2-4 expressing degrees of truth. Row based percentages.

Question precis* Question truth degree...	True (1)	Rank 2	Rank 3	Rank 4	Not true(5)	Ave
Mull over decisions	32.9	28.2	22.4	9.0	7.5	2.30
Contacting strangers easy	19.2	20.4	23.4	17.2	19.9	2.98
Consult widely before change	15.9	27.1	19.2	20.4	17.4	2.96
Family/colleague discussion helps	33.6	31.6	20.4	7.2	7.2	2.23
Many jobs to hand creates anxiety	16.9	21.4	21.6	17.9	22.1	3.07
Tolerate employee/contractor errors	13.7	22.2	26.9	20.2	17.0	3.04
Share successes/failures with others	14.5	16.2	24.4	20.7	24.2	3.24
Extensive records important	30.3	24.9	20.4	14.7	9.7	2.49
Admire financial logic and stability	34.2	29.4	24.4	7.0	5.0	2.19
Worry at night over decisions	11.9	18.9	17.9	21.4	29.9	3.38
New methods are exhilarating/exciting	27.2	32.2	25.9	8.2	6.5	2.35
Calculate \$'s before making decision	34.1	30.6	15.2	10.7	9.5	2.31
Worry over others' views of methods	3.2	5.2	18.9	23.4	49.3	4.10
Make do with material to hand	35.1	30.8	20.9	9.0	4.2	2.16
Discussion stimulates/excites/enthuses	32.3	36.3	22.9	4.0	4.5	2.12
Changing established systems a pain	17.0	35.9	26.2	21.9	16.0	3.01
Don't rest till job is done	24.4	30.1	24.6	14.2	6.7	2.49
Enjoy involvement in producer groups	14.4	19.9	30.8	15.9	18.9	3.05
Check and double check everything	6.8	18.0	30.0	26.0	19.3	3.33
Get cross and short under pressure	18.5	24.5	21.8	17.5	17.8	2.92
Use experience over hunches	32.9	37.4	25.1	3.3	1.3	2.13
Let employees/contractors have head	14.3	29.0	26.3	18.3	12.3	2.85
Enjoy talking at farmer meetings	16.8	19.3	26.3	16.8	20.8	3.06
Let principles guide decisions	15.0	28.5	37.3	12.3	7.0	2.68

Happier if plan ahead	37.3	36.6	18.8	4.3	3.0	1.99
Significance probabilities (Chi square)	.317	.564	.317	.083	.564	

* See the appendix for the questionnaire giving the complete questions (Section C)
Friedman's two way analysis shows the columns are significantly different

The table shows the most agreed with statement is 'happier if plan ahead' which is an important approach. Of course, whether this happens in practice is another question. But at least the statement 'don't rest till the job is done' is not far off being the most correct. Somewhat encouragingly is that the least truthful statement is 'worry over others' views of my methods'. When factorised, this data enables classifying farmers into managerial style groups.

Table 18

Average score on the truth rating of managerial style questions by farm type (Score based on 1 (true) to 5 (not true). The first six farm types.

Question precis* Farm type ...	Int. sheep	Ext. sheep	Deer	Beef	Dairy	Oth'r anim	Row+ mean
Mull over decisions	2.01	2.25	2.60	2.65	2.36	3.25	2.30
Contacting strangers easy	3.00	2.83	3.60	3.51	2.79	2.00	2.98
Consult widely before change	2.85	2.73	3.00	3.38	2.92	2.75	2.96
Family/colleague discussion helps	2.22	1.88	2.80	2.54	2.18	1.25	2.23
Many jobs to hand creates anxiety	3.12	3.00	3.70	3.17	2.88	3.25	3.07
Tolerate employee/contractor errors	3.11	2.83	2.90	3.18	3.02	3.50	3.04
Share successes/failures with others	2.90	3.25	3.40	3.44	3.29	2.50	3.24
Extensive records important	2.34	2.48	2.80	2.48	2.69	2.25	2.49
Admire financial logic and stability	2.09	2.08	2.70	2.46	2.11	1.75	2.19
Worry at night over decisions	3.30	3.15	3.10	3.59	3.25	3.50	3.38
New methods are exhilarating/exciting	2.40	2.52	2.70	2.51	2.13	2.75	2.35
Calculate \$'s before making decision	2.17	2.75	2.20	2.25	2.19	3.00	2.31
Worry over others' views of methods	4.02	4.13	4.20	4.44	3.95	3.50	4.10
Make do with material to hand	2.02	2.23	2.20	2.08	2.18	1.75	2.16
Discussion stimulates/excites/enthuses	2.11	2.13	2.30	2.46	2.02	2.00	2.12
Changing established systems a pain	3.10	3.06	2.70	3.11	2.80	3.75	3.01
Don't rest till job is done	2.42	2.38	3.00	2.37	2.68	2.25	2.49
Enjoy involvement in producer groups	3.10	3.25	2.80	3.49	2.79	3.50	3.05
Check and double check everything	3.31	3.54	3.50	3.30	3.24	3.75	3.33
Get cross and short under pressure	2.95	2.96	2.80	2.84	2.73	3.50	2.92
Use experience over hunches	2.07	2.13	1.90	2.13	1.89	2.25	2.03
Let employees/contractors have head	2.82	2.54	3.30	3.00	2.83	2.75	2.85
Enjoy talking at farmer meetings	2.95	3.38	2.60	3.27	3.09	2.50	3.06
Let principles guide decisions	2.41	3.19	3.10	2.90	2.56	2.75	2.68
Happier if plan ahead	1.82	1.94	1.90	2.21	2.07	2.50	1.99

* See the appendix for the questionnaire giving the complete questions (Section C)

+ Row mean across ALL farm types

Tables 18 and 19 divide the managerial style data into farm types enabling determining if farm type influences style. The following tables divide the answers according to TFC, debt level and equity groups with the final table, Table 23, presenting the F test significance probabilities indicating whether the data differences across these groups are significantly different. It will be noted some rows are largely different (F probabilities below 0.1), others not. For example, the attitude to the statement 'new methods are exhilarating/exciting' is different across all classifications other than farm type.

Table 19

Average score on the truth rating of managerial style questions by farm type (Score based on 1 (true) to 5 (not true). The last six farm types.

Question precis* Farm type ...	Fruit /vitic	Arable	Nur/ flrs	Veget	Graze	Other	Row+ mean
Mull over decisions	2.31	2.27	2.00	2.25	2.05	2.29	2.30
Contacting strangers easy	2.56	3.45	3.80	1.75	3.00	2.29	2.98
Consult widely before change	3.19	2.73	3.40	3.00	3.10	2.29	2.96
Family/colleague discussion helps	2.88	2.18	2.40	2.50	1.95	1.71	2.23
Many jobs to hand creates anxiety	3.50	2.73	3.60	3.75	3.25	2.57	3.07
Tolerate employee/contractor errors	3.06	3.36	2.80	3.25	3.00	2.43	3.04
Share successes/failures with others	3.56	3.64	4.20	4.00	3.15	2.86	3.24
Extensive records important	2.19	2.64	2.40	2.00	2.45	1.57	2.49
Admire financial logic and stability	2.38	2.64	1.00	2.50	2.20	2.43	2.19
Worry at night over decisions	4.12	3.82	4.40	3.50	3.35	3.86	3.38
New methods are exhilarating/exciting	2.13	2.36	2.20	2.00	2.45	2.57	2.35
Calculate \$'s before making decision	2.44	2.36	2.80	2.25	2.40	2.43	2.31
Worry over others' views of methods	4.13	4.18	4.40	4.75	3.95	4.43	4.10
Make do with material to hand	2.56	2.64	1.20	2.50	2.20	3.00	2.16
Discussion stimulates/excites/enthuses	1.94	1.64	1.80	1.50	2.15	2.29	2.12
Changing established systems a pain	3.12	3.45	2.60	3.25	3.20	2.86	3.01
Don't rest till job is done	2.44	2.09	2.80	2.00	2.40	2.43	2.49
Enjoy involvement in producer groups	2.75	2.82	3.20	2.75	3.10	2.71	3.05
Check and double check everything	3.93	2.70	3.80	3.00	3.25	3.14	3.33
Get cross and short under pressure	3.53	2.70	2.40	3.75	3.30	3.71	2.92
Use experience over hunches	2.00	2.30	1.80	2.25	2.11	1.71	2.03
Let employees/contractors have head	3.07	3.20	2.80	3.25	3.10	2.14	2.85
Enjoy talking at farmer meetings	2.60	2.80	3.20	2.75	2.80	2.86	3.06
Let principles guide decisions	2.73	2.40	3.00	2.75	2.40	2.86	2.68
Happier if plan ahead	2.20	1.50	1.80	1.75	1.95	1.86	1.99

* See the appendix for the questionnaire giving the complete questions (Section C)

+ Row mean across ALL farm types

Table 20

Average truth rating score on managerial style questions by Total Farm Capital (\$) groups
(Score based on 1 (true) to 5 (not true).

Question precis* Total farm capital (\$)....	<=2 mil	2-4 mil	4-6 mil	6-8 mil	8-10 mil	10-12 mil	12-20 mil	>20 mil	Row ave
Mull over decisions	2.33	2.33	2.03	2.43	2.17	2.54	2.35	2.54	2.31
Contacting strangers easy	3.32	2.94	2.99	3.23	2.94	2.96	2.59	2.31	2.95
Consult widely before change	3.35	3.04	2.94	3.03	2.71	2.92	2.41	2.60	2.95
Family/colleague discussion helps	2.51	2.28	2.24	2.10	2.26	2.04	1.79	2.11	2.23
Many jobs to hand creates anxiety	2.99	3.25	2.90	2.93	2.63	2.83	3.09	3.60	3.05
Tolerate employee/contractor errors	3.17	3.03	2.90	3.07	2.94	2.83	3.38	3.09	3.05
Share successes/failures with others	3.51	3.12	3.25	3.07	3.17	2.63	3.26	3.44	3.23
Extensive records important	2.40	2.56	2.55	2.50	2.43	2.29	2.44	2.71	2.50
Admire financial logic and stability	2.44	2.24	2.27	2.23	1.83	2.33	2.09	1.82	2.20
Worry at night over decisions	3.58	3.54	3.21	3.10	3.31	2.88	3.32	3.66	3.39
New methods are exhilarating/exciting	2.64	2.35	2.43	2.80	2.29	2.21	1.70	1.86	2.34
Calculate \$'s before making decision	2.82	2.24	2.21	2.33	2.20	2.46	1.85	2.00	2.30
Worry over others' views of methods	4.10	4.22	4.13	4.03	3.69	3.88	4.18	4.20	4.09
Make do with material to hand	1.92	2.08	2.34	2.27	2.49	2.37	2.18	2.14	2.18
Discussion stimulates/excites/enthuses	2.56	2.12	2.21	1.97	1.69	2.00	1.68	1.83	2.09
Changing established systems a pain	2.82	3.08	3.18	2.77	2.97	2.96	2.71	3.43	3.01
Don't rest till job is done	2.60	2.40	2.45	2.13	2.83	2.25	2.21	2.89	2.48
Enjoy involvement in producer groups	3.58	3.13	3.10	2.97	2.49	2.76	2.59	2.86	3.04
Check and double check everything	3.54	3.47	3.18	3.07	3.26	3.25	3.12	3.46	3.34
Get cross and short under pressure	3.00	3.20	2.85	2.90	2.54	2.50	2.65	2.97	2.91
Use experience over hunches	2.13	2.02	2.01	2.00	2.09	2.00	1.94	1.86	2.02
Let employees/contractors have head	2.65	2.90	2.72	3.00	2.66	3.38	2.94	2.86	2.84
Enjoy talking at farmer meetings	3.23	3.22	3.24	3.03	2.69	3.17	2.53	2.51	3.03
Let principles guide decisions	2.65	2.85	2.81	2.77	2.49	2.79	2.41	2.51	2.69
Happier if plan ahead	1.99	2.16	2.04	1.67	1.91	1.75	1.91	2.06	1.99
Percentage of properties in each group	18.5	23.8	17.2	7.7	9.0	6.1	8.7	9.0	100

* See the appendix for the questionnaire giving the complete questions (Section C)

Table 21

Average truth rating score on managerial style questions by Farm Debt level groups (\$)
(Score based on 1 (true) to 5 (not true).

Question precis* Farm debt level (\$)....	Nil	< 0.25 mil	0.25 -0.5 mil	0.5- 0.75 mil	0.75 -1.0 mil	1-2 mil	2-3 mil	3-5 mil	5-8 mil	> 8 mil	Row ave
Mull over decisions	2.3	2.1	2.3	2.3	2.7	2.4	2.2	2.5	1.9	2.6	2.30
Contacting strangers easy	3.2	3.2	3.0	2.8	2.5	2.7	3.0	3.4	2.3	2.5	2.98
Consult widely before change	3.2	3.3	2.9	2.8	3.2	2.6	3.0	2.4	2.1	2.7	2.96
Family/colleague discussion helps	2.3	2.4	2.1	1.9	2.6	2.2	2.4	1.9	1.8	2.1	2.23
Many jobs to hand creates anxiety	3.3	3.0	2.6	3.0	3.9	3.0	2.6	2.5	2.5	3.5	3.07
Tolerate employee/contractor errors	3.0	3.2	3.0	2.9	2.7	3.1	2.8	2.8	3.2	3.2	3.04
Share successes/failures with others	3.4	3.4	2.9	2.9	3.6	3.4	3.1	3.1	2.7	3.1	3.24
Extensive records important	2.5	2.4	2.5	2.5	2.9	2.5	2.3	2.4	2.5	2.6	2.49
Admire financial logic and stability	2.4	2.5	2.0	1.9	2.5	2.2	1.8	2.5	1.7	1.7	2.19
Worry at night over decisions	3.6	3.3	3.1	3.2	4.0	3.2	2.9	2.8	3.3	3.7	3.38
New methods are exhilarating	2.7	2.4	2.3	2.4	2.5	2.2	2.1	1.9	1.8	1.9	2.35
Calculate \$'s before making decision	2.6	2.4	2.1	2.0	2.2	2.1	2.2	1.8	2.0	2.1	2.31
Worry over others' views of methods	4.2	4.1	3.9	4.1	4.6	4.1	4.0	3.5	3.9	4.0	4.10
Make do with material to hand	2.0	2.2	2.4	1.7	2.3	2.5	2.3	2.2	1.9	2.3	2.16
Discussion stimulates/excites	2.4	2.2	1.8	1.9	2.1	2.1	1.9	1.7	1.6	1.8	2.12
Changing established systems a pain	3.0	3.1	2.9	2.9	2.9	3.4	2.8	2.6	2.5	3.5	3.01
Don't rest till job is done	2.4	2.6	2.6	2.4	2.1	2.6	2.2	2.5	2.4	3.0	2.49
Enjoy producer groups	3.3	3.4	3.4	2.8	3.5	2.7	2.4	3.1	2.7	2.4	3.05
Check and double check everything	3.4	3.1	3.7	3.7	3.6	3.0	3.3	3.3	2.9	3.4	3.33
Get cross and short under pressure	3.2	3.0	2.4	2.8	3.7	2.8	2.8	2.1	2.6	2.8	2.92
Use experience over hunches	2.1	1.9	2.2	2.0	2.5	1.9	2.1	1.9	1.8	1.8	2.03
Let employees/contractors have head	2.9	3.2	2.4	2.7	2.6	2.7	2.9	2.3	3.0	3.2	2.85
Enjoy talking at farmer meetings	3.3	3.2	3.3	2.8	3.5	2.8	2.6	2.9	3.0	2.2	3.06
Let principles guide decisions	2.7	2.7	2.8	3.4	3.2	2.7	2.6	2.8	2.5	2.3	2.68
Happier if plan ahead	2.0	1.8	2.2	2.0	2.4	1.8	1.9	2.0	1.8	2.1	1.99
% of properties in each group	33	13	9	6	4	10	7	5	5	8	100

* See the appendix for the questionnaire giving the complete questions (Section C)

Table 22

Average truth rating score on managerial style questions by equity percentage groups
(Score based on 1 (true) to 5 (not true)).

Question precis* Equity percentage...	100 %	100- 90%	90- 80%	80- 70%	70- 60%	60- 50%	<50%	Mean %
Mull over decisions	2.29	2.17	2.67	2.25	2.59	1.93	2.21	2.31
Contacting strangers easy	3.16	3.07	2.64	2.97	2.64	2.72	2.89	2.95
Consult widely before change	3.19	3.09	2.91	2.53	3.07	2.48	2.46	2.95
Family/colleague discussion helps	2.33	2.20	2.18	2.13	2.36	2.10	2.04	2.23
Many jobs to hand creates anxiety	3.27	3.06	2.84	2.95	3.00	2.79	2.89	3.05
Tolerate employee/contractor errors	3.09	3.06	3.09	2.92	3.02	3.00	3.07	3.05
Share successes/failures with others	3.41	3.17	3.27	3.08	3.39	3.03	2.68	3.23
Extensive records important	2.52	2.48	2.38	2.52	2.80	2.38	2.29	2.50
Admire financial logic and stability	2.41	2.29	2.07	2.20	2.14	1.72	1.82	2.20
Worry at night over decisions	3.67	3.25	3.29	3.12	3.45	3.17	3.18	3.39
New methods are exhilarating/exciting	2.67	2.48	2.09	2.10	2.25	1.89	1.79	2.34
Calculate \$'s before making decision	2.61	2.27	2.22	2.05	2.16	2.00	2.07	2.30
Worry over others' views of methods	4.21	4.15	4.11	4.13	3.95	4.14	3.50	4.09
Make do with material to hand	2.01	2.20	2.40	2.47	2.23	2.21	1.96	2.18
Discussion stimulates/excites/enthuses	2.40	2.11	1.71	2.00	2.07	1.72	1.86	2.09
Changing established systems a pain	2.96	3.09	3.04	3.03	3.11	2.86	2.86	3.01
Don't rest till job is done	2.40	2.52	2.42	2.58	2.43	2.41	2.82	2.48
Enjoy involvement in producer groups	3.27	3.28	2.89	2.77	3.02	2.45	2.64	3.04
Check and double check everything	3.41	3.27	3.36	3.25	3.43	3.03	3.43	3.34
Get cross and short under pressure	3.21	2.88	2.64	2.93	2.82	2.48	2.64	2.91
Use experience over hunches	2.08	1.96	2.04	2.18	2.07	1.79	1.86	2.02
Let employees/contractors have head	2.83	3.09	2.53	2.65	2.84	2.93	2.79	2.84
Enjoy talking at farmer meetings	3.31	3.15	2.87	3.07	2.84	2.39	2.68	3.03
Let principles guide decisions	2.77	2.73	2.56	2.87	2.55	2.66	2.50	2.69
Happier if plan ahead	2.04	1.90	2.00	2.00	2.23	1.59	2.07	1.99
Percentage of properties in each group	31.4	20.8	11.6	10.3	11.3	7.4	7.2	100

* See the appendix for the questionnaire giving the complete questions (Section C)

Table 23

Results of significance probability testing for the differences across the columns using the F test for each managerial style question. Farm type, Total Farm Capital, debt and equity groups treatments (each in a column).

Question precis*	Farm type differences	TFC group differences	Debt group differences	Equity group differences
F test (ANOVA) probabilities...				
Mull over decisions	.197	.493	.500	.116
Contacting strangers easy	.008	.023	.019	.185
Consult widely before change	.386	.024	.004	.011
Family/colleague discussion helps	.031	.182	.370	.828
Many jobs to hand creates anxiety	.528	.091	.002	.474
Tolerate employee/contractor errors	.911	.679	.859	.996
Share successes/failures with others	.193	.201	.193	.204
Extensive records important	.582	.936	.980	.725
Admire financial logic and stability	.126	.101	.002	.029
Worry at night over decisions	.242	.206	.023	.162
New methods are exhilarating/exciting	.547	.000	.002	.000
Calculate \$'s before making decision	.534	.008	.104	.067
Worry over others' views of methods	.267	.358	.181	.095
Make do with material to hand	.213	.207	.081	.205
Discussion stimulates/excites/enthuses	.304	.000	.001	.001
Changing established systems a pain	.698	.233	.075	.960
Don't rest till job is done	.642	.062	.417	.753
Enjoy involvement in producer groups	.126	.000	.000	.007
Check and double check everything	.419	.347	.117	.761
Get cross and short under pressure	.302	.157	.002	.060
Use experience over hunches	.803	.909	.396	.541
Let employees/contractors have head	.510	.272	.039	.299
Enjoy talking at farmer meetings	.554	.018	.002	.019
Let principles guide decisions	.010	.368	.356	.641
Happier if plan ahead	.424	.324	.351	.208

* See the appendix for the questionnaire giving the complete questions (Section C)

Overall, there does not seem to be many differences across farm types (i.e. the farmer's managerial style is similar across farm types as you would expect). But there are definite differences according to TFC, debt, and equity. That is, management style seems to influence farm size, growth (probably) and debt/equity situation.

6 Farm debt levels when the farm was purchased relative to the present, sources of debt, and uses of debt funds

It is very important to study the movement in debt levels as the years progress as the rate of change will have major influences in future possibilities and risk levels. The farmers were asked when they purchased the farm, and the cost and debt levels. The original debt levels are analysed as presented in Table 24.

Table 24

Percentage debt (debt as percentage of TFC) **when** the current property was purchased for a range of categories (farm type, total farm capital ranges, total debt ranges, and **current** equity ranges).

Property type+	Ave debt at start	Total farm Capital \$	Ave debt at start	Debt \$ thousands	Ave debt at start	Equity level % (now)	Ave debt at start
Int. sheep	53.6	<2 mill	57.2	0	55.7	100	55.6
Ext. sheep	57.2	2-4 mill	63.7	<250	62.7	100-90	60.7
Deer	75.0	4-6 mill	58.7	250-500	65.1	90-80	54.5
Beef	58.9	6-8 mill	60.2	500-750	49.2	80-70	65.5
Dairy	61.6	8-10 mill	60.7	750-1000	69.7	70-60	62.2
Other animal	82.5	10-12 mill	46.1	1000-2000	60.5	60-50	62.4
Fruit/viticult	58.7	12-20 mill	63.1	2000-3000	59.0	<50	62.2
Arable	65.6	>20 mill	52.9	3000-5000	54.4		
Nursery/flowers	47.5			5000-8000	63.7		
Vegetables	50.0			> 8 mill	60.3		
Grazing	64.7						
Other	60.0						
All farms ave	59.2		59.2		59.2		59.2
F test prob	.362		.246		.363		.392

+ Abbreviations Int. = intensive; Ext. = extensive (sheep and beef); anim = animal; viticult = viticulture; Nursery/flrs = nursery and flowers; Note ... 'other' is mainly dry stock.

Note that none of the values in a total column are statistically significantly different (see F probability values). However some of the column pairs are clearly significantly different. For example, intensive sheep and dairy farms (t test prob .033), intensive sheep and arable (t test prob .256), TFC group 6-8 mill and 10-12 mill (t test prob .060), Debt < \$250000 and \$750000 to 1 mill (t test prob .078), and equity 100% relative to equity of 80-70% (t test prob .095).

Also important are the sources of debt as this both influences future possibilities and risk levels. Table 25 contains this information. Tables 26 and 27 contain the same information but classified according to TFC and equity levels.

Table 25

Sources of debt by farm type. Percentage of debt emanating from the listed possibilities for those farms with debt and answering the question. Total number of farms with debt and answering was 190.

Property type+ Type of debt	Fixed interest mortgages	Floating interest mortgages	Bank overdraft	Supplier credit	Family fixed interest mortgage	Family floating interest mortgage	Other
Int. sheep	57.94	24.97	8.17	0.14	6.06	0	1.11
Ext. sheep	60.92	21.75	10.97	0.48	5.54	0	0
Deer	69.00	20.00	6.00	0	5.00	0	0
Beef	66.23	18.54	8.41	1.45	0.32	0.45	1.14
Dairy	65.99	24.67	4.75	0.04	2.99	0.17	1.32
Other animal	95.00	2.50	2.50	0	0	0	0
Fruit/viticult	61.00	30.00	8.00	1.00	0	0	0
Arable	47.50	33.12	14.37	0	0	5.0	0.12
Nursery/flowr	95.00	0	5.00	0	0	0	0
Vegetables	80.0	0	10.00	10.00	0	0	0
Grazing	60.00	25.83	5.83	0	8.33	0	0
Other	45.00	28.33	26.67	0	0	0	0
All farms ave	62.77	22.87	7.75	0.37	3.56	0.33	0.84
F test prob	.198	.029	.070	.830	.987	.837	.608

The column (farm type) differences are largely non significant except for the non family mortgages and bank overdrafts.

Table 26

Sources of debt by Total Farm Capital. Percentage of debt emanating from the listed possibilities for those farms with debt and answering the question. Total number of farms with debt and answering was 248.

Total farm capital groups Type of debt	Fixed interest mortgages	Floating interest mortgages	Bank overdraft	Supplier credit	Family fixed interest mortgage	Family floating interest mortgage	Other
< = 2 mill \$	34.70	22.74	33.04	2.94	0.76	5.06	1.12
2-4 mill \$	42.53	21.04	16.77	1.89	12.45	0.66	7.61
4-6 mill \$	46.47	29.49	12.57	0.47	8.96	0	1.89
6-8 mill \$	57.44	22.72	8.48	0.20	7.76	0.40	3.00
10-12 mill \$	36.55	48.87	6.10	0	7.06	0.32	1.03
12-20 mill \$	32.15	53.32	6.82	0.25	5.25	2.50	0
> 20 mill \$	47.0	44.58	6.00	0.03	1.30	1.27	0.03
All farms ave	42.84	32.46	14.40	0.94	6.94	1.26	2.61
F test prob	.188	.008	.000	.908	.762	.052	.954

The differences across TFC categories are relatively significantly different for the fixed and floating mortgages as well as bank overdrafts, but also for family floating loans, but not for the other categories. Floating interest rate mortgages rise with the investment, but bank overdrafts decline as percentages of debt.

Table 27

Sources of debt by equity levels. Percentage of debt emanating from the listed possibilities for those farms with debt and answering the question. Total number of farms with debt and answering was 279.

Equity groups % Type of debt	Fixed interest mortgages	Floating interest mortgages	Bank overdraft	Supplier credit	Family fixed interest mortgage	Family floating interest mortgage	Other
100 %	36.78	25.71	19.71	0	3.57	0	14.29
100-90 %	35.26	29.89	22.04	1.58	6.77	1.37	1.76
90-80 %	41.24	33.88	13.45	2.67	7.80	0.22	0.82
80-70 %	52.69	33.90	7.24	0.37	1.92	1.67	2.25
70-60 %	53.16	37.14	5.00	0.16	3.52	0.91	0.14
60-50 %	35.91	51.95	5.62	0.34	4.45	1.72	0
< 50 %	35.81	45.07	7.67	0.11	9.00	1.37	0.81
All equities ave	41.74	35.80	12.63	1.01	5.54	1.12	1.78
F test prob	.585	.216	.000	.514	.014	.897	.127

The significance probabilities suggest bank overdrafts vary considerably with equity levels, as you would expect, but so does family fixed mortgages. Equity levels do not tend to relate to the other debt classes.

It is also interesting to consider how the farmers used their borrowings. Table 28 contains the base data over this question.

Table 28

Use of borrowed funds. Percentage use of each source of funds.

Source of funds Use of funds...	Number Answer'g	Land and buildings	Stock	Development	Operational expenses	Family expense s
Largest mortgage	248	89.1	1.2	6.9	2.0	0.8
2 nd largest mortgage	113	50.4	26.5	17.7	5.3	0
3 rd largest mortgage	62	45.2	22.6	17.7	14.5	0
4 th largest mortgage	36	36.1	19.4	25.0	11.1	8.3
Largest family loan	39	74.3	0	10.3	2.6	12.8
2 nd largest family loan	7	14.3	42.9	14.3	28.6	0
Bank overdraft main use	135	3.0	12.6	3.7	80.0	0.7
Bank overdraft other	35	5.7	14.3	22.9	37.1	20.0
Other	2	50.0	50.0	0	0	0
Column average		52.6	11.1	10.4	21.8	2.6

The distributions of each column are statistically different with a Chi Sq probability of .041. This means, of course, the sources of funds for each use are significantly different... as you would expect.

The following tables compare the uses of funds according to a range of categories (TFC, equity, debt ranges)

Table 29

Use of borrowed funds relative to Total Farm Capital. Percentage of each TFC group using funds for the various uses. The row totals are generally greater than 100% as some farms have several uses for their borrowed funds.

TFC groups (\$) Use of funds...	Number Anwser'g	Land and buildings	Stock	Development	Operational expenses	Family expenses
< 2 million	31	54.8	19.3	32.2	64.5	6.4
2 to 4 million	50	76.0	30.0	24.0	58.0	10.0
4 to 6 million	49	87.7	20.4	20.4	42.9	8.2
6 to 8 million	25	92.0	32.0	4.0	44.0	8.0
8 to 10 million	30	90.0	23.3	30.0	46.7	3.3
10 to 12 million	19	100.0	31.6	15.8	31.6	0
12 to 20 million	31	100.0	25.8	25.8	55.7	6.4
> 20 million	32	93.7	6.2	40.6	53.1	3.1
Column whtd average	267	85.4	23.2	24.7	50.7	6.3

Friedman's two way analysis of variance shows the column distributions are significantly different at .000. The rows are not significantly different (prob.752)

Table 30

Use of borrowed funds relative to equity percentage. Percentage of each equity group using funds for the various uses. The row totals are generally greater than 100% as some farms have several uses for their borrowed funds.

Equity groups (%) Use of funds...	Number Anwser'g	Land and buildings	Stock	Development	Operational expenses	Family expenses
100 – 90 %	83	62.6	10.8	22.9	37.3	7.2
90 – 80 %	45	80.0	22.2	17.8	51.1	4.4
80 – 70 %	40	92.5	30.0	32.5	50.0	2.5
70 – 60 %	44	95.4	38.6	18.2	43.2	0
60 – 50 %	29	96.5	41.4	31.0	65.5	6.9
< 50 %	28	85.7	35.7	21.4	57.1	17.9
Column whtd verage	269	81.4	26.0	23.4	47.6	5.9

Friedman's two way analysis of variance shows the column distributions are significantly different at .000. The rows are approaching significant difference (prob.058)

Table 31

Use of borrowed funds relative to Total Farm Debt. Percentage of each TFD group using funds for the various uses. The row totals are generally greater than 100% as some farms have several uses for their borrowed funds.

TFDebt groups (\$) Use of funds...	Number Answer'g	Land and buildings	Stock	Development	Operational expenses	Family expenses
0 - 0.25 mill	55	45.4	14.5	25.4	43.6	10.9
0.25 – 0.5 mill	35	77.1	14.3	14.3	54.3	8.6
0.5 – 0.75 mill	22	90.9	36.4	18.2	18.2	0
0.75 – 1 mill	15	86.7	13.3	13.3	40.0	0
1 – 2 mill	42	90.5	21.4	26.2	47.6	4.8
2 – 3 mill	30	90.0	30.0	20.0	46.7	3.3
3 – 5 mill	20	100.0	40.0	30.0	60.0	5.0
5 – 8 mill	21	95.2	42.9	33.3	42.9	9.5
> 8 mill	31	96.8	38.7	29.0	64.5	3.2
Column whtd average	271	81.2	25.8	23.6	47.2	5.9

Friedman's two way analysis of variance shows the column distributions are significantly different at .000. The rows are also significantly different (prob.044)

It is clear that each of these groupings does relate to the use of funds. The higher the debt level, for example, the greater proportion of funds spend on land and buildings. This is perfectly logical

7 Types of debt used by the farmers

The following group of tables presents information on the types of loans taken out by farmers. The data is given for the categories used in previous tables ... that is, by farm type, by TFC, and equity levels. The first three tables (32, 33, and 34) isolate out flat mortgages (interest only), family loans with interest required, and family loans with payback eventually required. The remaining loans will be table mortgages.

The next group of four tables (35, 36, 37 and 38) present the same divisions for mortgages, bank overdrafts, supplier credit and family loans as well as non farm loans. Also provided in this series is a breakdown covering debt levels.

Table 32

Various debt characteristics by farm type. Percentages of loans interest only, percentage paying interest on family loans, and percentage of farmers with family loans who are obliged to pay them back.

Property type+	No. of farms answering	Proport'n of loans interest only (%)	No. of farms answering	Percent' paying interest on family loans	No. of farms answering	Percent obliged to pay back family loan
Int. sheep	48	71.71	33	30.3	30	30.0
Ext. sheep	39	58.77	26	23.1	25	16.0
Deer	7	74.29	4	25.0	2	0
Beef	30	61.93	17	29.4	13	23.1
Dairy	116	83.97	70	28.6	64	18.7
Other animal	2	50.00	1	0	2	0
Fruit/viticult	6	73.33	4	0	4	0
Arable	9	28.89	7	14.3	7	14.4
Nursery/flrs	2	0	1	0	1	100.0
Vegetables	1	100.00	0	0	0	0
Grazing	13	58.61	10	30.0	9	22.2
Other	17	57.18	3	0	2	50.0
All farms ave	269	71.02	174	26.4	157	21.0
Significance	F test prob	.000	Chi sq prob	.952	Chi sq Prob	.609

The F test shows the interest only proportions are significantly different across farm types, but that family loan differences across farm types are not at all significant (Chi square test as percentages of farmers).

Table 33

Various debt characteristics by Total Farm Capital. Percentages of loans interest only, percentage paying interest on family loans, and percentage of farmers with family loans who are obliged to pay them back.

Total Farm Capital bands \$	No .of farms answering	Proportion of loans interest only (%)		No. of farms answering	Percent paying interest on family loans		No. of farms answering	Percent obliged to pay back family loan
< 2 mill	29	37.8		22	13.6		18	27.8
2-4 mill	46	64.1		31	22.6		25	20.0
4-6 mill	51	69.8		33	27.3		32	21.9
6-8 mill	25	77.1		18	33.33		14	28.6
8-10 mill	31	80.0		20	40.0		19	10.5
10-12 mill	20	84.1		13	23.1		13	7.7
12-20 mill	33	79.5		19	36.8		19	26.3
17.6> 20 mill	32	83.8		18	10.5		17	17.6
All farms ave	267	71.8		174	25.9		157	20.4
Significance	F test prob	.000		Chi sq prob	.485		Chi sq pro	.786

The proportion of interest only loans does vary across TFC groups with, logically, as the TFC increases the proportion of interest only loans increases.

Table 34

Various debt characteristics by Equity groups. Percentages of loans interest only, percentage paying interest on family loans, and percentage of farmers with family loans who are obliged to pay them back.

Equity groups Percentage equity	No .of farms answering	Proportion of loans interest only (%)	No. of farms answering	Percentage paying interest on family loans	No. of farms answering	Percentage obliged to pay back family loan
100 %*	11	26.6	10	10.0	9	11.1
100 - 90	73	52.3	48	20.8	39	15.4
90 - 80	43	85.5	28	42.9	25	32.0
80 - 70	40	81.8	24	12.5	21	0
70 – 60	44	79.9	25	28.0	25	24.0
60 – 50	29	74.0	17	35.3	16	18.7
< 50 %	27	84.6	22	64.7	22	36.4
All farms ave	267	71.2	174	25.9	157	20.4
Significance	F test prob	.000	Chi sq prob	.278	Chi sq pro	.111

* These farms did not declare some of their short term loans/debt as farm debt.

Again, the proportion of interest only loans tends to increase as equity decreases.

Table 35

General type of debt by farm type. Percentage of farmers with each type of debt.

Property type Type of debt	Long term mortgages	Bank overdrafts	Supplier credit/HP	Family loans	Non farm debt
Int. sheep	43.6	33.0	1.1	14.9	58.5
Ext. sheep	27.1	45.8	89.6	83.3	81.25
Deer	50.0	30.0	10.0	10.0	70.0
Beef	38.5	24.6	7.7	12.3	60.0
Dairy	85.1	47.4	5.8	15.7	87.6
Other animal	50.0	50.0	25.0	0	50.0
Fruit/viticult	31.2	31.2	12.5	6.2	37.5
Arable	72.7	45.4	9.1	9.1	9.1
Nursery/flrs	20.0	20.5	0	0	40.0
Vegetables	25.0	0	25.0	25.0	50.0
Grazing	30.0	35.0	0	10.0	65.0
Other	42.9	42.9	0	14.3	42.9
All farms ave	58.0	38.5	5.9	13.8	69.9
No. of farms	235	156	24	56	283
Chi sq prob	.994	.000	.001	.983	.276

While the number of farms providing a figure is given in the last row, there is no guarantee that the remaining farmers did not have the specific type of debt though it is certain they did not provide a positive figure when answering. However, this information shows bank overdrafts vary with farm type, as does the supplier credit. Horticulture and dairy do not seem to use supplier credit as much as the others.

Table 36

Quantity of various types of debt held by farmers with debt. Total Farm Capital groups.

Total Farm Capital range \$ Type of debt	Long term mortgages	Bank overdrafts	Supplier credit/HP	Family loans	Non farm debt
< 2 million	125830	17320	1340	31710	0
2 – 4 million	277120	32030	1240	79240	4740
4 – 6 million	849540	88260	36050	176800	0
6 – 8 million	1128930	140280	0	289230	123370
8 – 10 million	1769620	108140	12500	579500	28000
10 – 12 million	2033660	498180	150000	758370	31750
12 – 20 million	4624610	377470	27860	78570	0
> 20 million	12217740	562910	130000	387500 0	0
All farms ave	2209680	142510	22250	375920	12400
No. of farms with debt	336	255	134	165	116
F test prob	.000	.000	.000	.000	.001

As you would expect, loan values increase as TFC increases with the differences all being statistically significant.

Similar comments apply to variations in equity levels as shown in Table 37.

Table 37

Quantity of various types of debt held by farmers with debt. Equity groups.

Equity % ranges Type of debt...	Long term mortgages	Bank overdrafts	Supplier credit/HP	Family loans	Non farm debt
100 %	0	0	0	0	1080
100 - 90	396090	60680	10830	131000	87500
90 - 80	1550630	206960	99000	205710	179250
80 - 70	2151890	205120	77290	1413330	66750
70 - 60	4377940	216150	75000	2206250	0
60 - 50	6942850	552780	146250	1060280	0
< 50 %	6308820	352450	46250	1292670	0
All farms ave.	2209680	142510	22250	375920	12400
No. of farms with debt	336	255	134	165	116
F test prob	.000	.000	.000	.000	.000

The differences across debt levels are again significant for all types of debt source.

Table 38

Percentage of farmers falling into debt level ranges by type of debt. Column percentages.

Debt ranges \$ Type of debt...	Long term mortgages	Bank overdrafts	Supplier credit/HP	Family loans	Non farm debt
< zero	30.3	39.3	73.6	59.9	84.4
1 - 0.25 million	8.2	12.2	3.6	8.7	4.1
0.25 - 0.5 million	9.3	8.4	2.1	2.9	0.8
0.5 – 0.75 million	6.1	1.9	1.4	2.9	0
0.75 – 1.0 million	4.1	3.0	1.4	1.7	2.5
1 – 2 million	12.2	9.9	4.3	5.8	1.6
2 – 3 million	8.7	7.6	4.3	5.2	2.5
3 – 5 million	5.8	5.0	1.4	3.5	0.8
5 – 8 million	6.1	3.4	2.9	4.6	0.8
> 8 million \$	9.0	9.2	5.0	4.6	2.5
No. of farms	343	262	140	172	122
Chi sq test prob	.000	.000	.000	.000	.000

Note that 30% of farmers do not have long term mortgages, nearly 40% do not have bank overdrafts, 74% have not recorded having hire purchase arrangements, but 40% do have family loans. Also note non farm debt is not common.

8 Debt ... repayment, restrictions and use

In assessing possible problems stemming from debt levels at the national level it is important to understand attitudes and methods of paying down debt, restrictions caused by debt, and loan refusals. Table 39 contains all this information. Refusals and restrictions emanating from debt are very low.

The proportion of farmers relying on intermittent repayments is high and varies across farm type.

Table 39

FARM TYPE	Monthly mortgage %	When able %	Never Pay off %	When refinance %	Mgmt. restriction Ave score	Land refusal %	Stock Refusal %	Plant & machinery refusal %	Develop refusal %	Other refusal %
No. ansr'ing	155	178	75	82	276	362	362	358	357	341
Int. sheep	57.1	54.8	2.4	2.4	2.6	14.6	0	3.6	2.4	1.2
Ext. sheep	51.3	59.0	2.6	5.1	2.3	6.7	0	0	2.2	0
Deer	20.0	80.0	0	20.0	1.8	0	0	0	0	0
Beef	44.4	51.9	7.4	11.1	2.3	5.7	0	0	2.0	2.1
Dairy	32.0	71.0	5.0	8.0	2.2	11.9	.8	3.5	1.7	4.5
Other animal	100	0	0	0	1.0	25.0	0	0	25.0	0
Fruit/viticult	16.7	66.7	0	0	3.0	10.0	0	0	0	0
Arable	100	50.0	0	0	1.7	22.2	10.0	0	0	0
Nursery/flrs	100	0	0	0	2.0	0	0	0	0	0
Vegetables	66.7	66.7	0	0	1.2	0	0	0	0	0
Grazing	11.1	77.8	11.1	0	1.5	0	0	0	0	0
Other	60.0	40.0	0	0	2.6	0	0	16.7	0	0
Sign prob (Chi square)	.020	.193	.990	.961	(F=.191)	.076*	.000*	.000*	.000*	.000*
TOTAL FARM CAPITAL										
< 2 million	60.0	36.0	4.0	4.0	2.4	8.6	0	1.8	3.6	1.9
2 - 4 million	41.3	60.9	6.5	4.3	2.2	11.9	0	2.4	2.3	1.2
4 - 6 million	46.3	61.0	4.9	9.8	2.3	8.1	0	3.3	1.7	0
6 - 8 million	32.0	68.0	4.0	4.0	2.2	13.8	0	0	0	0
8 - 10 million	46.4	67.9	0	3.6	2.4	11.4	0	5.7	5.7	3.0
10 - 12 mill'n	38.9	72.2	0	0	2.6	4.5	4.3	0	0	0
12 - 20 mill'n	40.0	70.0	0	10.0	2.0	12.5	4.3	3.1	0	0
> 20 million	43.4	64.5	9.7	9.7	2.1	9.1	0	0	0	3.3
Sign prob. (Chi square)	.487	.378	.315	.416	(F =.804)	.200*	.000*	.200*	.058*	.035*
EQUITY PERCENTAGE										
100%	53.8	30.8	7.7	7.7	2.3	9.7	1.1	2.2	2.2	0
100 - 90 %	46.2	61.5	1.5	3.1	1.6	7.7	1.3	2.6	2.6	2.7
90 - 80 %	32.5	65.0	7.5	7.5	2.3	6.8	0	4.5	2.3	2.3
80 - 70 %	36.8	71.1	2.6	2.6	2.4	12.8	0	2.6	0	0
70 - 60 %	50.0	69.4	0	5.6	2.4	18.2	0	2.3	2.3	0
60 - 50 %	46.4	67.9	7.1	10.7	3.0	10.3	0	0	0	0
< 50 %	45.8	45.8	8.3	12.5	2.6	7.1	0	0	3.6	3.8
Sign prob (Chi square)	.765	.299	.636	.693	(*F=.000)	.200*	.000*	.178*	.035*	.009*

Debt repayment method (%), management restriction caused by debt (1=minor restriction to 5=major restriction), and refusal to lend (%) ALL by farm type, Total Farm Capital and Equity

Table 40

Proportion of debt used in various categories by Farm Type, Total Farm Capital, and Equity levels. Average percentage for farmers answering in each category. And percentage of farmers who have defaulted on a debt payment by the same categories.

FARM TYPE	Land and buildings %	Stock %	Plant and machinery %	Development %	Running expenses %	Other use %	Number Of times defaulting
Int. sheep	63.9	16.4	4.0	4.2	7.7	3.8	0.16
Ext. sheep	67.3	6.6	6.3	8.5	9.2	2.0	0.16
Deer	37.9	14.3	2.1	30.0	15.7	0	0
Beef	67.1	4.7	5.6	8.1	11.3	3.2	0.08
Dairy	81.2	6.6	3.8	5.7	2.1	0.5	0.01
Other animal	100.0	0	0	0	0	0	0
Fruit/viticult	38.6	1.4	11.4	26.1	22.5	0	0
Arable	63.6	15.5	0.3	12.2	8.3	0	0
Nursery/flrs	65.0	0	5.0	0	30.0	0	0
Vegetables	40.0	0	5.0	0	5.0	50.0	0
Grazing	62.3	17.5	4.4	4.5	11.3	0	0
Other	58.0	13.0	7.0	16.0	5.0	1.0	0
Sign prob (F)	.001	.039	.927	.017	.052	.000	.969
TOTAL FARM CAPITAL							
< 2 million	47.1	9.4	9.6	9.9	23.3	0.7	0.24
2 - 4 million	64.3	8.4	3.9	7.1	8.5	7.8	0.05
4 - 6 million	76.9	7.6	5.3	5.9	4.2	0.1	0.07
6 - 8 million	80.8	11.2	2.5	0.8	1.6	2.9	0.07
8 - 10 million	69.1	4.3	2.0	14.5	7.6	2.4	0.03
10 - 12 mill'n	83.2	10.0	1.8	2.5	1.9	0.6	0
12 - 20 mill'n	79.7	8.4	2.2	5.4	3.2	1.0	0
> 20 million	69.6	14.9	7.2	5.9	2.4	0.1	0
Sign prob (F)	.000	.565	.120	.125	.000	.080	.702
EQUITY PERCENTAGE							
100%	67.8	9.7	8.0	3.1	5.3	6.1	0.01
100 - 90 %	55.0	11.4	5.8	8.9	15.7	3.3	0.14
90 - 80 %	73.1	6.9	3.2	8.0	8.7	0	0
80 - 70 %	74.7	5.7	5.0	9.1	3.4	2.2	0.08
70 - 60 %	82.6	6.6	2.3	5.5	2.5	0.5	0.03
60 - 50 %	74.5	10.9	3.3	5.1	2.2	4.0	0.10

< 50 %	76.7	10.4	3.4	6.2	2.3	0.9	0.14
Sign prob (F)	.001	.693	.477	.740	.002	.482	.833

Generally speaking, most debt finance is used for land and buildings, but there are some exceptions. In some cases development has been debt financed.

The numbers defaulting on loans is very low. The answers show 327 farmers recorded 'never', 4 farmers defaulted once, 1 farmer defaulted twice, 1 farmer three times, 1 farmer four times, and finally, one farmer defaulted a grand total of ten times. The remainder did not answer and probably are 'nevers'.

For the different groupings it is clear columns show significant differences. For example, equity levels correlate with different percentages of debt funding for land and buildings.

9 Explaining levels of assets, debt and equity through time

The respondents were asked to provide information on their assets, debt and equity dollar levels when first purchasing, and also for 2010 and 2015. This data was used to develop regression equations explaining the changes in nominal values through time. They are given below (the figures in brackets are the variable significance levels):

$$\text{\$Assets} \dots = 1402335 + 486410 X_1 (.014) + 1593395 X_2 (.000) - 199545 X_3 (.000)$$

$$(R^2=0.544 \text{ Significance } 0.000.)$$

$$\text{\$Debt} \dots = 273590 - 142036 X_1 (.033) + 88277 X_2 (.001) + 8936 X_3 (.118) - 26310 X_4 (.000) + 129 X_5 (.123) + 0.316 X_6 (.000) - 80887 X_7 (.297) + 15017 X_8 (.016).$$

$$(R^2=0.742 \text{ Significance } 0.000)$$

$$\text{\$Equity} \dots = -177023 - 77614 X_2 (.000) - 17170 X_3 (.000) + 25700 X_4 (.000) + 75 X_5 (.222) + 0.655 X_6 (.000)$$

$$(R^2 = .931 \text{ Significance } 0.000)$$

Where X_1 = Farm type index (1=horticulture, 2=dairying, 3= arable, dairy support, 4=intensive sheep, 5= extensive sheep, deer, beef). Note the codes relate to the intensity of production systems.

X_2 = Number of labour units including the manager (allows comparing different farm sizes)

X_3 = Number of years since 1874 (which was the date of the purchase of the farm longest in the current family)

X_4 = Years of experience of manager

X_5 = Land area owned (hectares)

X_6 = \$assets at date of farm purchase and at 2010 and 2015 depending on the data item case.

X_7 = Manager's highest education level (1=primary, 2= up to three years secondary, 3=greater than three years secondary, 4=up to two years tertiary, 5=three or more years tertiary).

X_8 = Average grade (%) in last year of formal study

It will be noted the R^2 s are significant and relatively high explaining most of the variance. For the all-important equity, note that the number of labour units is associated with a lower equity as is the number of years since purchase. Increasing equity is associated with years of experience, farm size re the area and assets held. Clearly, the more experience means more time to pay back debt.

The calculations were repeated once the values were converted into real values with 2016 as the base. The equation used to estimate the real values was:

$$2016 \text{ value} = 126.619 - 0.997 Y$$

where Y is the years from 1874 to the present. The equation was highly significant as was the Y value. It predicted 0.927 of the variance.

$$\$Assets \dots = 28816548 - 5578197 X_1 (.153) + 1206693 X_2 (.392) + 27514 X_5 (.000)$$

$$(R^2=0.222 \text{ Significance } 0.000.)$$

$$\$Debt \dots = -29767759 + 3610105 X_1 (.013) + 328386 X_2 (.497) - 81453 X_4 (.567) - 3027 X_5 (.094) + 0.642 X_6 (.000) + 233765 X_8 (.074).$$

$$(R^2=0.670 \text{ Significance } 0.000)$$

$$\$Equity \dots = 19942609 - 2378766 X_1 (.037) - 334842 X_2 (.379) - 84221 X_4 (.452) + 2167 X_5 (.127) + 0.380 X_6 (.000) - 112908 X_8 (.272)$$

$$(R^2 = .539 \text{ Significance } 0.000)$$

Where, as above,

X_1 = Farm type index (1=horticulture, 2=dairying, 3= arable, dairy support, 4=intensive sheep, 5= extensive sheep, deer, beef). Note the codes relate to the intensity of production systems.

X_2 = Number of labour units including the manager (allows comparing different farms)

X_4 = Years of experience of manager

X_5 = Land area owned (hectares)

X_6 = \$assets at date of farm purchase, and at 2010 and 2015 depending on the case.

X_7 = Manager's highest education level (1=primary, 2= up to three years secondary, 3=greater than three years secondary, 4=up to two years tertiary, 5=three or more years tertiary).

X_8 = Average grade (%) in last year of formal study

Note that X_3 (Number of years since 1874 (which was the date of the purchase of the farm longest in the current family)) does not appear as the values have now been all set at the 2016 value set through allowing for inflation.

It is also interesting to compare the asset and debt data given in the question series B5/D7 with the data in question D13 (see appendix for the question details). The former give an average equity per labour unit of \$2,748,744 relative to \$2,579,708 for the latter. The difference has a t test probability of significant difference of 0.129 which using normal criteria, would be called a non significant difference, though there is still an 87.1% chance of being different. This is a cross check on accuracy with the difference occurring due, probably, to the B5/D7 series asking for a breakdown of types of assets and debt, whereas the D13 series asked for totals.

Backing up the equations are tables giving asset, debt and equity changes according to farm type, debt level, labour units and TFC. The following tables provide this information for nominal and real terms, and also for only farms purchased after 1980 to see whether time of purchase might influence the gains. Clearly, buying at a low point will impact on asset and equity growth. For all this information see Tables 41, 42, and 43.

Table 41

Per year percentage change in assets, debt and equity from purchase of farm to 2015 by farm type, Total Farm Capital, labour unit groups and debt groups. Nominal figures.

FARM TYPE	Asset change %	Debt change % +	Equity change %		DEBT GROUP \$0000s	Asset change %	Debt change %	Equity change %
Int. sheep	3.52	2.33	3.67		< \$25	2.77	-25.66	3.09
Ext. sheep	3.08	-2.08	3.48		25-50	3.41	-2.20	3.73
Deer	2.67	-5.46	2.82		50-75	3.00	1.50	3.25
Beef	2.71	-18.89	3.03		75-100	3.37	2.71	3.57
Dairy	3.62	3.01	3.37		100-200	3.81	2.88	4.20
Other animal	3.52	1.98	4.27		200-300	4.33	4.18	4.37
Fruit/viticult	3.34	4.25	3.50		300-500	4.09	3.69	-0.92
Arable	2.70	-12.59	2.79		500-800	3.01	4.59	4.46
Nursery/flrs	3.03	NA*	3.23		> \$800	3.50	3.38	3.82
Vegetables	3.82	NA*	3.94					
Grazing	3.05	-6.80	3.16					
Other	3.06	-15.00	3.89					
All farms ave	3.30	-1.71	3.38					
Sign prob (F)	.916	.110	1.000		Sign. p (F)	.348	.002	.084
TOTAL FARM CAPITAL					LABOUR UNITS			
< 2 million	3.19	-37.69	3.51		<= 1	3.20	-9.29	2.37
2 - 4 million	3.11	1.38	3.40		1 – 2	3.25	-3.52	3.56
4 - 6 million	3.15	-0.83	1.86		2 – 3	3.90	3.05	4.18
6 - 8 million	3.46	2.68	3.70		3 – 4	2.78	-0.33	4.28
8 - 10 million	3.40	0.78	4.22		4 – 5	3.15	3.07	3.28
10 - 12 mill'n	1.72	3.24	4.07		5 – 6	4.44	4.45	4.46
12 - 20 mill'n	3.76	1.39	3.81		7 – 9	3.44	3.10	3.94
> 20 million	3.47	3.22	3.78		> 9	3.28	3.12	3.39
Sign prob (F)	.286	.000	.437		Sign. p (F)	.794	.643	.590

* NA = Not available + Note that a negative means debt has INCREASED

For other than debt change, differences across classifications are largely non significant and low. Equity change hovers around 3%.

While interesting, the nominal value changes do not provide the critical farmer interest figures. The real figures with a base of 2016 values are given in table 42.

Table 42

Per year percentage change in assets, debt and equity from purchase of farm to 2015 by farm type, Total Farm Capital, labour unit groups and debt groups. Real figures with 2016 base.

FARM TYPE	Asset change %	Debt change % +	Equity change %		DEBT GROUP \$0000s	Asset change %	Debt change %	Equity change %
Int. sheep	-0.48	-0.53	-0.06		< \$25	10.41	-0.29	-11.05
Ext. sheep	10.81	-0.67	-11.39		25-50	-0.08	-1.45	-0.44
Deer	0.03	-0.64	-0.68		50-75	0.58	-0.37	-0.95
Beef	0.11	-0.48	-0.40		75-100	-0.35	-0.49	-0.18
Dairy	0.79	-0.10	-0.81		100-200	-0.16	-0.55	-0.13
Other animal	-0.75	-0.68	0.07		200-300	-0.38	-0.45	-0.07
Fruit/viticult	-0.39	-0.50	-0.11		300-500	-0.43	-0.35	0.10
Arable	0.34	-0.30	-0.64		500-800	1.40	0.14	-1.32
Nursery/flrs	-0.76	-0.30	0.49		> \$800	1.99	0.89	-1.14
Vegetables	-0.67	-0.57	0.10					
Grazing	-0.67	-0.55	0.07					
Other	-0.63	-0.61	0.02					
All farms ave	1.37	-0.38	-1.68					
Sign prob.(F)	.795	.947	.768		Sign. p (F)	.647	.000	.617
TOTAL FARM CAPITAL					LABOUR UNITS			
< 2 million	-0.50	-0.46	0.03		<= 1	-0.51	-0.51	0.02
2 - 4 million	5.04	-0.41	-5.50		1 – 2	3.47	-0.69	-3.99
4 - 6 million	-0.14	-1.09	-0.42		2 – 3	-0.07	-0.38	-0.31
6 - 8 million	-0.23	-0.53	-0.29		3 – 4	-0.45	-0.43	-0.03
8 - 10 million	-0.46	-0.48	-0.02		4 – 5	0.04	-0.23	-0.29
10 - 12 mill'n	0.06	-0.36	-0.41		5 – 6	-0.56	-0.29	0.27
12 - 20 mill'n	1.17	-0.02	-1.28		7 – 9	4.50	1.52	-2.98
> 20 million	2.09	0.87	-1.26		> 9	1.84	0.60	-1.31
Sign prob (F)	.892	.001	.893		Sign. p (F)	.951	.001	.960

* NA = Not available + Note that a negative means debt has INCREASED

This data makes it very clear that real growth is virtually zero. Farmers are not making real gains from capital gains.

Table 43

Per year percentage change in assets, debt and equity from purchase of farm to 2015 ONLY for farms first purchased 1980 or after. By farm type, Total Farm Capital, labour unit groups and debt groups. Real figures with 2016 base.

FARM TYPE	Asset change %	Debt change % +	Equity change %		DEBT GROUP \$0000s	Asset change %	Debt change %	Equity change %
Int. sheep	-0.66	-0.45	0.20		< \$25	-0.69	-0.47	0.22
Ext. sheep	-0.75	-0.91	0.24		25-50	-0.72	-0.81	0.21
Deer	-0.83	-0.83	0.01		50-75	-0.41	-0.44	-0.03
Beef	-0.66	-0.43	0.22		75-100	-0.69	-0.47	0.22
Dairy	-0.49	-0.39	0.08		100-200	-0.69	-0.57	0.12
Other animal	-0.77	-0.75	0.12		200-300	-0.60	-0.50	0.10
Fruit/viticult	-0.69	-0.42	0.27		300-500	-0.55	-0.38	0.19
Arable	-0.80	-0.28	0.52		500-800	-0.56	-0.28	0.18
Nursery/flrs	-0.76	-0.30	0.49		> \$800	-0.19	-0.16	-0.05
Vegetables	-0.67	-0.57	0.10					
Grazing	-0.63	-0.45	0.18					
Other	-0.63	-0.61	0.020					
All farms ave	-0.61	-0.47	0.16					
Sign prob (F)	.542	.301	.772		Sign. p (F)	.002	.062	.334
TOTAL FARM CAPITAL					LABOUR UNITS			
< 2 million	-0.63	-0.42	0.22		<= 1	-0.62	-0.45	0.18
2 - 4 million	-0.72	-0.49	0.22		1 – 2	-0.71	-0.59	0.22
4 - 6 million	-0.69	-0.72	0.18		2 – 3	-0.49	-0.37	0.12
6 - 8 million	-0.65	-0.52	0.13		3 – 4	-0.72	-0.44	0.22
8 - 10 million	-0.63	-0.48	0.15		4 – 5	-0.47	-0.42	0.01
10 - 12 mill'n	-0.44	-0.33	0.01		5 – 6	-0.54	-0.30	0.24
12 - 20 mill'n	-0.52	-0.31	0.17		7 – 9	-0.26	-0.23	0.03
> 20 million	-0.26	-0.22	-0.02		> 9	-0.24	-0.31	-0.18
Sign prob (F)	.017	.116	.623		Sign. p (F)	.014	.569	.272

* NA = Not available + Note that a negative means debt has INCREASED

While selecting farms purchased after 1980 is an arbitrary date, the data in Table 43 shows growth is not much better for these farmers compared with the 'all farmer' grouping. Of course, choosing a different base year will give different figures.

10 Debt ... interest, repayment and advice

Critical to risk levels emanating from farm debt is the amount of income that must be devoted to servicing debt. Also relevant to good debt management is the advice and help organised and received by the farmer. The following tables provide this information.

Table 44 Payment of interest and principal on loans. Percentage of GROSS income devoted to each payment. By farm type, Total Farm Capital, debt level and labour units.

FARM TYPE	Percent of GFI for interest	Percent of GFI for principal	DEBT GROUP \$0000s	Percent of GFI for interest	Percent of GFI for principal
Int. sheep	13.2	7.5	< \$25	2.5	3.4
Ext. sheep	15.7	5.4	25-50	9.1	11.9
Deer	13.2	2.0	50-75	17.2	7.0
Beef	10.6	7.5	75-100	12.4	9.1
Dairy	17.9	7.1	100-200	17.7	4.9
Other animal	0	0	200-300	18.0	6.0
Fruit/viticult	9.0	8.5	300-500	20.9	6.3
Arable	11.0	5.1	500-800	21.8	8.4
Nursery/flrs	1.5	1.7	> \$800	23.1	8.9
Vegetables	5.0	3.0			
Grazing	11.7	4.9			
Other	25.9	10.2			
All farms ave.	14.5	6.7		19.5	4.7
Sign prob (F)	.021	.979	Sign. p (F)	.000	.134
TOTAL FARM CAPITAL			LABOUR UNITS		
< 2 million	9.7	9.7	<= 1	10.7	5.5
2 - 4 million	11.6	7.5	1 – 2	14.2	6.8
4 - 6 million	14.7	5.8	2 – 3	16.4	8.3
6 - 8 million	21.3	5.4	3 – 4	15.1	4.7
8 - 10 million	13.5	4.4	4 – 5	23.9	7.5
10 - 12 mill'n	15.7	4.7	5 – 6	16.3	14.7
12 - 20 mill'n	18.0	9.4	7 – 9	17.5	8.3
> 20 million	16.6	5.5	> 9	12.8	3.6
All farms ave.	14.6	6.7		14.4	6.6
Sign prob (F)	.025	.531	Sign. p (F)	.048	.483

Across all farm types 22% of income is going on debt. This is a significant amount. Other than 'other' farms, the highest commitment is in dairy farms. As expected there are significant differences across the groupings for the amount of income devoted to interest payments.

Table 45

Hours (average) per annum spent with the following people seeking help on financing and debt affairs. The figure in brackets is the rating on the degree of reliance placed on the person on a 1 to 5 scale (1= total reliance 5 = no reliance). All by farm type and Total Farm Capital. (Note NA refers to 'not available' due to non-answers and low numbers)

FARM TYPE	Farm consultant	Accountant	Lawyer	Banker	Family/friends
Int. sheep	5.3 (3.4)	5.0 (2.7)	2.0 (3.2)	5.3 (2.8)	52.2 (3.0)
Ext. sheep	18.7 (2.3)	22.9 (2.4)	4.1 (2.5)	7.4 (2.6)	77.2 (2.5)
Deer	NA	2.0 (2.5)	1.0 (4.0)	4.2 (2.2)	37.0 (2.5)
Beef	5.6 (3.1)	6.2 (2.6)	2.5 (3.4)	5.6 (2.7)	46.9 (2.9)
Dairy	20.4 (2.9)	7.9 (2.3)	2.5 (2.7)	5.6 (2.3)	46.9 (2.8)
Other animal	5.0 (4.0)	5.0 (4.0)	NA	7.0 (4.0)	20.0 (4.0)
Fruit/viticult	45.0 (2.7)	262.1 (2.2)	2.3 (2.7)	4.4 (3.2)	NA (4.5)
Arable	22.6 (2.8)	8.5 (2.7)	5.1 (3.2)	5.6 (3.0)	71.5 (2.7)
Nursery/flrs	NA	20.0 (2.5)	10.0 (3.0)	2.0 (2.0)	NA
Vegetables	NA	3.5 (3.5)	NA (5.0)	2.0 (5.0)	20.0 (4.0)
Grazing	3.7 (4.5)	3.4 (3.1)	2.6 (2.7)	3.2 (2.6)	1.2 (2.7)
Other	NA	17.4 (2.8)	8.3 (3.3)	7.8 (2.3)	45.5 (NA)
All farms ave	16.1 (3.0)	16.7 (2.5)	3.8 (2.9)	7.8 (2.6)	45.5 (2.8)
Sign prob (F)	.287 (.421)	.000 (.334)	.360 (.707)	.000 (.314)	.850 (.803)
TOTAL FARM CAPITAL \$					
< \$2 million	16.6 (3.6)	8.9 (2.9)	4.5 (3.4)	5.4 (3.0)	21.4 (3.4)
2 - 4 million	9.6 (3.5)	4.3 (2.6)	2.2 (2.8)	3.4 (2.6)	47.4 (3.1)
4 - 6 million	11.1 (2.9)	7.2 (2.3)	3.4 (3.3)	10.0 (2.4)	27.1 (2.9)
6 - 8 million	5.5 (3.3)	8.1 (2.3)	1.9 (2.7)	5.4 (2.6)	2.6 (3.1)
8 - 10 million	12.7 (2.7)	4.2 (2.6)	2.0 (2.8)	6.1 (2.6)	53.7 (2.4)
10 - 12 mill'n	8.2 (3.0)	6.7 (2.3)	3.3 (2.2)	5.8 (2.7)	57.6 (2.2)
12 - 20 mill'n	33.1 (2.9)	11.7 (2.4)	7.8 (2.7)	13.6 (2.6)	53.1 (2.2)
> \$20 million	20.4 (2.9)	101.8 (2.3)	5.9 (3.0)	13.7 (2.2)	121.0 (2.8)
All farms ave	16.3 (3.0)	16.9 (2.5)	3.8 (2.9)	7.8 (2.6)	45.9 (2.8)
Sign prob (F)	.426 (.739)	.043 (.211)	.015 (.679)	.000 (.632)	.446 (.374)

Most advice and help comes from family and friends with the other groupings not being noticeably different. Note the significant differences.

Further analysis of this data is presented in Table 46 where the debt and equity group comparisons appear.

Table 46

Hours (average) per annum spent with the following people seeking help on financing and debt affairs. The figure in brackets is the rating on the degree of reliance placed on the person on a 1 to 5 scale (1= total reliance 5 = no reliance). All by debt level and equity level.

DEBT GROUP \$0000s	Farm consultant	Accountant	Lawyer	Banker	Family/ friends
Zero debt	18.6 (3.9)	14.4 (2.9)	4.4 (3.4)	5.8 (3.3)	44.6 (3.5)
\$1 - 25	5.6 (2.6)	5.8 (2.5)	1.7 (2.8)	3.7 (3.0)	8.3 (2.6)
25 – 50	5.9 (4.1)	6.1 (3.0)	3.8 (3.1)	5.6 (2.6)	44.8 (3.4)
50 – 75	3.2 (2.7)	3.8 (2.0)	3.7 (1.6)	2.8 (1.9)	151.5 (4.2)
75 – 100	20.0 (2.0)	6.2 (1.9)	1.7 (1.7)	3.8 (2.3)	7.9 (3.3)
100 – 200	8.8 (2.2)	8.3 (2.3)	2.6 (2.5)	8.2 (2.6)	36.4 (2.5)
200 – 300	12.2 (3.4)	7.3 (2.4)	2.2 (3.4)	7.9 (2.5)	31.8 (2.1)
300 – 500	37.1 (2.2)	6.2 (2.7)	3.0 (3.2)	7.5 (2.8)	13.7 (2.5)
500 – 800	22.5 (3.0)	12.8 (2.2)	6.1 (2.6)	15.2 (2.5)	60.1 (2.4)
>\$800	18.0 (2.6)	92.5 (2.0)	6.7 (2.6)	15.2 (2.0)	114.3 (2.3)
All farms ave	16.1 (3.0)	16.7 (2.5)	3.8 (2.9)	7.8 (2.6)	45.5 (2.8)
Sign prob (F)	.421 (.010)	.323 (.004)	.205 (.164)	.000 (.011)	.203 (.037)
EQUITY %					
100%	19.8 (3.9)	15.0 (2.9)	4.5 (3.4)	6.0 (3.3)	47.3 (3.5)
100 – 90	7.7 (2.9)	5.8 (2.6)	2.8 (2.9)	4.1 (2.9)	190.6 (2.9)
90 – 80	25.8 (2.7)	5.9 (2.4)	2.9 (2.0)	5.5 (2.4)	3.9 (2.3)
80 – 70	14.1 (2.9)	63.4 (2.2)	2.5 (2.7)	7.5 (2.5)	137.3 (3.4)
70 – 60	13.7 (2.5)	10.1 (2.5)	5.0 (2.9)	8.5 (2.4)	85.6 (2.4)
60 – 50	14.9 (3.1)	10.3 (2.3)	3.2 (3.2)	11.8 (2.1)	20.7 (2.5)
<50%	22.3 (3.2)	8.0 (2.3)	5.4 (2.7)	15.5 (2.4)	18.0 (2.2)
All farms ave	16.3 (3.0)	16.9 (2.9)	3.8 (2.9)	7.8 (2.6)	45.9 (2.8)
Sign prob (F)	.801 (.127)	.438 (.095)	.584 (.221)	.000 (.013)	.030 (.065)

Significant differences only occur for the banker and family/friends categories.

11 Equity matters and outcomes from debt

Equity levels clearly influence both the vulnerability of the farm and the potential to borrow more. And in the end a farmer and the family hope to gain from borrowing. Accordingly it is important to appreciate just how low the equity on farms has dropped to, and to understand the farmers' views of the benefits. The following three tables present information on these factors.

Table 47

Percentage of farmers (a) experiencing the various categories of 'their lowest equity experienced', and (b) the percentage of farmers rating the outcomes from debt use in a range of categories.

Lowest equity experienced	Percentage of farmers		Score (1 = very good ... 5 = not good)	Capital gains ... % of all farmers	Good Profits ... % of all farmers	Non monetary goals ... % of all farmers	Gains family net worth ...% of all farmers
1 – 10 %	23.9		One	59.3	21.9	22.0	46.1
10 – 20	18.0		Two	20.8	25.5	33.7	30.0
20 – 30	11.9		Three	11.7	30.8	28.0	16.1
30 – 40	10.3		Four	5.4	12.9	9.3	5.4
40 - 50	11.2		Five	2.8	7.9	6.9	2.5
50 – 60	7.0						
60 – 70	5.0						
70 – 80	5.7						
80 – 90	2.3						
90 - 100	4.7						

The lowest equity levels have been surprisingly low on a large proportion of the responding farmers. No doubt most of the low equity occurred around when the farm was first purchased. In contrast, the majority of farmers believe their borrowing has given rise to very satisfactory capital gains, profits, and non-monetary gains. However, of course, the data on real capital gains across the whole farm presented earlier shows the capital gains have been largely non-existent. Despite this, the farmers could be correct when considering just the capital gains emanating from just their borrowing.

Table 48

(a) Lowest equity percentage experienced by farmers, and (b) the farmers' rating on the outcomes from debt use in a range of categories based on a 5 point scale with 1 = very good through to 5 = not at all good. All by farm type and Total Farm Capital

FARM TYPE	Lowest equity %		Capital gains Ave score	Good profits Ave score	Non monetary goals Ave score	Gains in family net worth ave score
Int. sheep	37.0		1.8	2.4	2.5	1.9
Ext. sheep	33.7		1.7	2.8	2.6	2.1
Deer	14.3		1.6	2.4	2.5	1.5
Beef	40.4		1.8	2.6	2.1	1.8
Dairy	33.1		1.6	2.6	2.5	1.8
Other animal	25.0		1.0	3.0	3.0	1.0
Fruit/viticult	31.1		1.9	3.2	2.6	2.1
Arable	19.3		2.2	2.7	2.7	2.3
Nursery/flrs	56.7		1.7	2.7	2.0	1.5
Vegetables	65.0		2.0	2.3	2.0	2.0
Grazing	37.1		1.1	2.2	2.7	1.7
Other	38.3		1.6	2.1	1.0	2.0
All farms ave.	35.1		1.7	2.6	2.5	1.9
Sign prob (F)	.267		.473	.660	.493	.783
TOTAL FARM CAPITAL \$						
< \$2 million	40.5		1.9	2.7	2.5	2.2
2 - 4 million	32.4		1.8	2.8	2.3	1.9
4 - 6 million	34.9		1.9	2.5	2.6	2.2
6 - 8 million	35.0		1.8	2.1	2.4	1.9
8 - 10 million	29.3		1.5	2.6	2.6	1.7
10 - 12 mill'n	39.8		1.2	2.4	2.2	1.6
12 - 20 mill'n	29.7		1.4	2.3	2.5	1.2
> \$20 million	39.7		1.8	2.8	2.5	1.9
All farms ave.	34.9		1.7	2.6	2.5	1.9
Sign prob (F)	.575		.064	.132	.805	.005

When it comes to comparing groupings it is clear the farm type and total farm capital ranges largely do not have different outcomes for these variables. It is only the gains in family objectives do significant differences emerge.

Table 49

(a) Lowest equity percentage experienced by farmers, and (b) the farmers' rating on the outcomes from debt use in a range of categories based on a 5 point scale with 1 = very good ... through to 5 = not at all good. All by debt levels and number of children.

DEBT GROUP \$0000s	Lowest equity %		Capital gains ... Ave score	Good profits ... Ave score	Non monetary goals ... Ave score	Gains in family net worth ave score
Zero debt	42.9		1.8	2.3	2.1	1.9
\$1 - 25	31.6		1.8	2.7	2.3	1.9
25 – 50	27.0		1.8	2.9	2.8	2.0
50 – 75	43.7		1.5	2.2	2.2	1.6
75 – 100	30.0		1.7	2.8	2.3	2.2
100 – 200	35.9		2.0	2.6	2.8	2.4
200 – 300	26.0		1.5	2.5	2.6	1.6
300 – 500	25.7		1.6	2.9	2.7	1.9
500 – 800	33.2		1.3	2.4	2.6	1.4
>\$800	34.2		1.6	2.7	2.4	1.8
All farms ave	35.1		1.7	2.6	2.5	1.9
Sign prob (F)	.057		.394	.342	.133	.047
NO OF CHILDREN						
Zero	39.6		1.8	2.5	2.3	1.9
One	34.5		1.6	2.5	2.3	1.8
Two	36.9		1.7	2.7	2.5	2.0
Three	32.7		1.7	2.5	2.5	1.8
Four	27.8		1.6	2.8	2.7	1.8
Five	36.0		2.3	2.3	2.3	2.0
> five	16.4		1.2	2.7	3.0	1.75
All farms ave.	35.1		1.7	2.6	2.5	1.9
Sign prob (F)	.428		.872	.965	.204	.963

As highlighted in Table 49, the lowest equity experienced is significantly related to debt level with the trend to have a lower equity boundary with higher debt. However, the trend is not as strong as might be expected reflecting that even if very low equity to start many farmers have worked hard at increasing equity. And it is clear the number of children is not related to lower equity despite the costs involved.

12 Farmers' goals and aims

Every farmer, and farm family, have their own unique objective set which influences decisions over debt and repayments. To allow proper allowances for the objectives in any analysis comparing apples with apples it was important to record farmers' objectives. This assumes the farmer has assessed the family objectives and combined these with the reported objectives. Tables 50 to 56 present details of the farmer answers to the 20 statements on objectives, and assess differences across various groupings looking for significant differences. Table 56 contains the F statistic probabilities for the group comparisons.

Table 50 provides the raw answers provided by the farmers over their opinion on how important each of the 20 possible objective nuances is.

Table 50

Distribution of farmers' rating on the truth of goals and aims statements. Rated on 1 (true) to 5 (not true) with 2-4 expressing degrees of truth to not true. Row based percentages.

Question precis* Question truth degree...	True (1)	Rank 2	Rank 3	Rank 4	Not true(5)	Ave
Important to pass property to family	27.0	16.9	19.7	11.4	25.0	2.9
Important to earn respect of others	17.5	27.3	31.6	12.4	11.1	2.7
Comfortable living is important	54.0	31.7	11.3	2.0	1.0	1.6
Important to keep debt as low	42.0	17.6	19.3	13.7	7.4	3.0
Holidays and leisure important	28.2	28.2	26.6	9.6	7.4	2.3
Farmer meeting attendance vital	11.1	23.9	32.7	18.1	13.6	1.8
Risk reduction is very important	29.4	33.8	21.3	11.4	4.1	1.8
Good working conditions crucial	44.5	39.4	11.3	4.1	0.8	1.8
Ensure employees enjoy jobs	46.1	35.2	16.1	1.3	1.3	1.7
Doing enjoyable jobs important	48.1	32.3	15.0	3.6	1.0	2.5
Minimising pollution important	51.6	28.7	13.6	3.5	2.0	2.2
Enjoy experimenting with new things	17.3	32.5	33.8	11.2	5.3	2.5
Retirement planning important	30.3	29.8	26.8	8.3	4.3	2.2
Must strive to increase asset value	21.0	29.6	30.1	11.9	7.3	2.5
Expanding business important	3.3	10.9	25.4	24.7	35.6	3.8
Maximum sustainable cash important	28.4	36.0	21.3	9.4	4.8	2.3
Presence in local community important	19.0	31.0	31.0	11.2	7.9	2.6
Improving property important	58.1	33.0	7.1	1.0	0.3	1.5
Assets to children re edn/bus desirable	24.9	28.9	27.22	9.1	9.9	2.5
Must farm even though don't enjoy it	3.5	4.3	7.8	14.2	70.0	4.4

* See the appendix for the questionnaire giving the complete questions (Section E)
Friedman's two way analysis shows the columns are significantly different.

It is interesting to note the ‘truest’ statement across all farmers is ‘improving the property is important’ closely followed by ‘a comfortable living is important’. These two statements exemplify many farmers attitude in that they seek both satisfaction from developing a business and a reasonably comfortable life. Also important is ‘ensure employees enjoy their jobs’. The least true statement is ‘expanding business is important’ reflecting their downgrading of developing an empire for its own sake.

Tables 51 and 52 give the statement truth scores across farm types. While differences appear to exist across types, the statistical tests (Table 56) show in fact only a few real differences occur.

Table 51

Average score on the truth rating of goals and aims statements by farm type (Score based on 1 (true) to 5 (not true). The first six farm types.

Question precis* Farm type ...	Int. sheep	Ext. sheep	Deer	Beef	Dairy	Other anim
Important to pass property to family	3.1	2.5	2.9	3.2	2.7	1.5
Important to earn respect of others	2.9	2.6	2.4	2.6	2.7	3.5
Comfortable living is important	1.7	1.7	1.5	1.5	1.6	1.7
Important to keep debt as low	2.0	2.2	2.2	1.8	2.8	2.0
Holidays and leisure important	2.5	2.6	2.3	2.4	2.2	2.7
Farmer meeting attendance vital	2.9	3.4	3.4	3.2	2.9	2.7
Risk reduction is very important	2.1	2.3	2.0	2.2	2.5	3.0
Good working conditions crucial	1.9	2.0	1.8	1.7	1.6	1.5
Ensure employees enjoy jobs	1.8	1.8	2.3	1.9	1.6	2.2
Doing enjoyable jobs important	1.8	1.9	1.7	1.6	1.8	1.2
Minimising pollution important	1.7	2.0	1.7	1.7	1.6	1.7
Enjoy experimenting with new things	2.5	2.5	2.8	2.6	2.5	2.2
Retirement planning important	2.1	2.7	2.2	2.2	2.3	2.5
Must strive to increase asset value	2.3	2.7	2.6	2.5	2.7	2.5
Expanding business important	3.5	3.9	3.7	3.8	3.9	3.5
Maximum sustainable cash important	2.1	2.1	2.3	2.5	2.3	2.5
Presence in local community important	2.5	2.5	2.5	2.6	2.5	2.0
Improving property important	1.4	1.5	1.8	1.6	1.5	1.2
Assets to children re edn/bus desirable	2.4	2.3	2.6	2.6	2.4	1.5
Must farm even though don't enjoy it	4.3	4.2	4.7	4.6	4.5	4.0
% of properties in each group	23.2	11.9	2.5	16.0	29.9	1.0

* See the appendix for the questionnaire giving the complete questions (Section E)

+ Row mean across ALL farm types

Table 52

Average score on the truth rating of goals and aims statements by farm type (Score based on 1 (true) to 5 (not true). The last six farm types.

Question precis* Farm type ...	Fruit /vitic	Arable	Nur/ flrs	Veget	Graze	Other	Row+ mean
Important to pass property to family	3.7	2.7	3.8	1.7	3.4	2.6	2.9
Important to earn respect of others	3.3	2.4	2.2	1.5	3.1	2.3	2.7
Comfortable living is important	2.0	1.9	1.4	1.2	1.8	1.5	1.6
Important to keep debt as low	1.8	2.7	1.2	2.2	2.1	2.4	2.3
Holidays and leisure important	2.1	2.7	1.0	2.0	2.5	2.7	2.4
Farmer meeting attendance vital	2.7	2.1	2.8	2.5	2.7	2.4	3.0
Risk reduction is very important	2.2	2.7	1.4	1.0	2.5	1.9	2.3
Good working conditions crucial	1.8	2.0	1.4	1.2	1.9	1.9	1.8
Ensure employees enjoy jobs	1.6	1.7	1.6	1.2	1.7	1.9	1.8
Doing enjoyable jobs important	1.9	2.0	1.4	1.2	1.9	1.7	1.8
Minimising pollution important	1.9	1.7	1.2	1.5	2.5	1.4	1.7
Enjoy experimenting with new things	2.3	2.4	2.8	1.7	2.9	2.1	2.5
Retirement planning important	1.8	1.4	2.2	2.7	2.4	2.0	2.2
Must strive to increase asset value	2.9	2.0	2.8	2.5	2.3	2.6	2.5
Expanding business important	4.0	3.7	4.8	3.2	3.7	3.9	3.8
Maximum sustainable cash important	2.1	1.6	2.4	2.0	2.7	2.4	2.3
Presence in local community important	2.6	2.2	3.0	2.5	3.3	2.0	2.6
Improving property important	1.7	1.1	1.6	1.2	1.8	1.9	1.5
Assets to children re edn/bus desirable	3.2	2.3	2.6	1.7	2.9	3.0	2.5
Must farm even though don't enjoy it	4.7	4.8	5.0	4.7	4.4	4.6	4.4
% of properties in each group	4.0	2.7	1.2	1.0	4.9	1.7	

* See the appendix for the questionnaire giving the complete questions (Section C)

+ Row mean across ALL farm types

Table 53

Average truth rating score on goals and aims statements by Total Farm Capital (\$) groups
(Score based on 1 (true) to 5 (not true)).

Question precis* Total farm capital (\$)....	<=2 mil	2-4 mil	4-6 mil	6-8 mil	8-10 mil	10-12 mil	12-20 mil	>20 mil	Row ave
Important to pass property to family	3.6	3.3	2.7	2.4	2.6	2.3	2.5	2.8	2.9
Important to earn respect of others	2.9	2.9	2.7	2.8	2.5	2.6	2.2	2.7	2.7
Comfortable living is important	1.8	1.7	1.5	1.4	1.6	1.5	1.6	1.8	1.6
Important to keep debt as low	1.5	2.0	2.2	2.3	2.7	2.6	3.1	3.4	2.3
Holidays and leisure important	2.6	2.6	2.3	2.3	2.2	2.3	2.0	2.4	2.4
Farmer meeting attendance vital	3.1	3.1	3.0	3.0	2.7	2.6	2.7	2.9	3.0
Risk reduction is very important	2.2	2.1	1.9	2.0	2.3	2.9	2.8	2.6	2.3
Good working conditions crucial	1.9	1.8	1.6	1.8	2.0	1.9	1.5	1.7	1.8
Ensure employees enjoy jobs	1.9	1.9	1.6	1.7	1.8	1.6	1.4	1.7	1.8
Doing enjoyable jobs important	1.7	1.8	1.8	1.7	2.0	2.0	1.5	1.9	1.8
Minimising pollution important	1.8	1.7	1.7	1.8	1.9	1.8	1.6	1.7	1.7
Enjoy experimenting with new things	2.8	2.5	2.5	2.6	2.5	2.6	2.5	2.2	2.5
Retirement planning important	2.2	2.4	2.1	2.1	2.1	2.0	2.3	2.4	2.2
Must strive to increase asset value	2.6	2.5	2.8	2.1	2.9	2.1	2.4	2.6	2.5
Expanding business important	4.0	4.0	3.9	3.7	3.4	3.7	3.4	3.5	3.8
Maximum sustainable cash important	2.7	2.3	2.0	2.2	1.9	1.9	2.0	2.4	2.2
Presence in local community important	2.9	2.7	2.6	2.6	2.5	2.0	2.1	2.5	2.6
Improving property important	1.6	1.6	1.4	1.4	1.6	1.3	1.1	1.7	1.5
Assets to children re edn/bus desirable	2.9	2.8	2.6	2.1	2.3	2.0	2.2	2.1	2.5
Must farm even though don't enjoy it	4.3	4.4	4.3	4.8	4.1	4.8	4.9	4.6	4.5

* See the appendix for the questionnaire giving the complete questions (Section E)

You would expect farmers with greatly different TFC farms would have different objectives. Tables 53 and 56 show this is certainly the case. For example, the differences in the scores on 'it is important to pass the property to the family' are highly significant.

When it comes to differences across debt and equity levels there are fewer significant differences as can be seen from Tables 54, 55 and 56. An exception is the attitude to reducing risk which is significantly different across debt and equity levels ... this would be expected.

Table 54

Average truth rating score on aims and goals by Farm Debt level groups (\$) (Score based on 1 (true) to 5 (not true)).

Question precis* Farm debt level (\$)....	Nil	< 0.25 mil	0.2 5- 0.5 mil	0.5- 0.75 mil	0.75 -1.0 mil	1-2 mil	2-3 mil	3-5 mil	5-8 mil	> 8 mil	Row ave
Important to pass property to family	3.1	3.4	3.0	3.0	2.7	2.6	2.3	2.4	2.5	2.7	2.9
Important to earn respect of others	2.8	2.7	3.1	2.9	3.5	2.4	2.6	2.4	2.3	2.6	2.7
Comfortable living is important	1.6	1.8	1.5	1.5	2.3	1.6	1.5	1.4	1.5	1.9	1.6
Important to keep debt as low	1.6	1.6	2.5	2.1	2.3	2.7	2.8	2.9	3.3	3.8	2.3
Holidays and leisure important	2.5	2.6	2.5	2.4	2.2	2.2	1.9	2.4	1.9	2.5	2.4
Farmer meeting attendance vital	3.0	3.2	3.1	2.5	3.6	3.0	2.5	3.0	2.7	2.8	3.0
Risk reduction is very important	1.9	2.2	2.6	2.0	2.5	2.3	2.5	2.7	2.5	2.9	2.3
Good working conditions crucial	1.8	1.8	1.7	1.6	1.7	1.8	1.8	1.8	1.4	1.7	1.8
Ensure employees enjoy jobs	1.8	1.8	2.0	1.7	1.5	1.7	1.6	1.7	1.6	1.8	1.8
Doing enjoyable jobs important	1.6	1.8	1.9	1.8	1.8	1.8	1.6	1.9	1.6	2.2	1.8
Minimising pollution important	1.6	1.7	2.1	1.7	2.1	1.9	1.8	1.6	1.7	1.7	1.7
Enjoy experimenting with new things	2.7	2.4	2.7	2.2	2.8	2.5	2.6	2.2	2.5	2.4	2.5
Retirement planning important	2.2	2.1	2.4	2.0	2.9	2.1	2.1	2.2	2.1	2.5	2.2
Must strive to increase asset value	2.6	2.6	2.7	2.4	2.8	2.6	2.1	2.3	2.3	2.6	2.5
Expanding business important	4.0	4.0	4.1	3.6	4.0	3.3	3.5	3.8	3.3	3.3	3.8
Maximum sustainable cash important	2.4	2.5	2.4	2.0	2.5	1.9	1.9	2.0	2.0	2.4	2.3
Presence in local community important	2.7	2.7	2.7	2.2	2.7	2.3	2.8	2.4	2.1	2.5	2.6
Improving property important	1.5	1.6	1.6	1.3	1.4	1.5	1.5	1.4	1.2	1.7	1.5
Assets to children re edn/bus desirable	2.6	2.9	2.5	2.2	2.9	2.3	2.5	1.9	2.0	2.3	2.5
Must farm even though don't enjoy it	4.4	4.4	4.2	4.4	4.6	4.3	4.5	4.6	4.7	4.8	4.4

* See the appendix for the questionnaire giving the complete questions (Section E)

Table 55

Average truth rating score on goals and aims statements by equity percentage groups (Score based on 1 (true) to 5 (not true)).

Question precis* Equity percentage...	100 %	100- 90%	90- 80%	80- 70%	70- 60%	60- 50%	<50%	Mean %
Important to pass property to family	3.2	3.1	3.3	2.6	2.4	2.4	2.8	2.9
Important to earn respect of others	2.8	2.8	2.6	2.6	2.9	2.4	2.7	2.7
Comfortable living is important	1.6	1.6	1.7	1.7	1.9	1.3	2.0	1.6
Important to keep debt as low	1.6	1.9	2.5	2.7	3.0	3.2	3.4	2.3
Holidays and leisure important	2.5	2.3	2.6	2.1	2.4	2.1	2.4	2.4
Farmer meeting attendance vital	3.0	3.0	2.9	2.9	3.1	2.7	2.9	3.0
Risk reduction is very important	1.9	2.1	2.7	2.4	2.6	2.6	2.5	2.3
Good working conditions crucial	1.8	1.7	1.8	1.8	1.8	1.7	1.7	1.8
Ensure employees enjoy jobs	1.8	1.7	1.8	1.9	1.7	1.6	1.8	1.8
Doing enjoyable jobs important	1.7	1.6	2.0	2.1	1.8	1.7	2.0	1.8
Minimising pollution important	1.6	1.8	1.9	1.9	1.7	1.9	1.7	1.7
Enjoy experimenting with new things	2.7	2.5	2.4	2.3	2.5	2.6	2.6	2.5
Retirement planning important	2.2	2.0	2.6	2.2	2.2	2.1	2.5	2.2
Must strive to increase asset value	2.6	2.6	2.7	2.3	2.4	2.3	2.5	2.5
Expanding business important	4.0	3.9	3.7	3.7	3.8	3.5	3.1	3.8
Maximum sustainable cash important	2.3	2.4	2.0	2.1	2.2	1.9	2.5	2.2
Presence in local community important	2.7	2.4	2.6	2.5	2.5	2.3	2.7	2.6
Improving property important	1.5	1.5	1.4	1.5	1.6	1.4	1.6	1.5
Assets to children re edn/bus desirable	2.7	2.5	2.6	2.5	2.2	2.0	2.6	2.5
Must farm even though don't enjoy it	4.5	4.4	4.3	4.4	4.6	4.9	4.3	4.5

* See the appendix for the questionnaire giving the complete questions (Section C)

Table 56

Results of significance probability testing for the differences across the columns using the F test for each goals and aims statement. Farm type, Total Farm Capital, debt and equity groups treatments (each in a column).

Question precis*	Farm type differences	TFC group differences	Debt group differences	Equity group differences
F test (ANOVA) probabilities...				
Important to pass property to family	.018	.000	.032	.008
Important to earn respect of others	.077	.196	.040	.393
Comfortable living is important	.475	.206	.017	.040
Important to keep debt as low	.000	.000	.000	.000
Holidays and leisure important	.173	.242	.064	.347
Farmer meeting attendance vital	.093	.434	.099	.820
Risk reduction is very important	.035	.000	.000	.000
Good working conditions crucial	.070	.067	.747	.855
Ensure employees enjoy jobs	.066	.037	.730	.782
Doing enjoyable jobs important	.836	.203	.205	.082
Minimising pollution important	.015	.984	.398	.354
Enjoy experimenting with new things	.679	.366	.293	.510
Retirement planning important	.094	.712	.387	.116
Must strive to increase asset value	.256	.050	.553	.630
Expanding business important	.309	.031	.001	.007
Maximum sustainable cash important	.350	.002	.131	.226
Presence in local community important	.217	.018	.222	.611
Improving property important	.249	.011	.489	.856
Assets to children re edn/bus desirable	.225	.001	.018	.173
Must farm even though don't enjoy it	.453	.005	.455	.355

* See the appendix for the questionnaire giving the complete questions (Section E)

13 Farmers' anxiety levels for a range of stress sources

Anxiety and stress are two very important variables across primary production. It is well documented that stress tends to be higher in primary production managers than for most other occupations. This culminates in suicide rates being similarly much higher than in other industries. In that debt levels are an important source of anxiety and stress it was important to invite the respondents to record their anxiety levels across various categories. Table 57 to 65 document their responses.

Table 57 gives the distribution of anxiety levels for a range of areas with a low score (out of ten) representing low anxiety. Table 58 gives the average anxiety score across farm types.

Note that the highest anxiety area is 'rules and regulations' and the lowest 'isolation' with the others in between with not one area dominating. Clearly some

farmers are not anxious, but others certainly are given the percentages at the higher scores.

Table 57

Distribution of the level of anxiety experienced for a range of anxiety creating factors (Scale based on 1 to 10 with 1 representing little anxiety and 10 representing great anxiety. Percentage scoring each scale value

Anxiety Score Factor	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	Mean
Crop/animal yields	16.6	12.6	8.2	8.2	24.2	6.1	8.2	8.9	3.4	3.7	4.53
Product prices	7.6	7.8	6.8	5.7	19.5	8.6	12.5	16.1	4.7	10.7	5.81
Financial /debt issues	29.0	8.8	10.4	8.8	15.4	6.1	4.8	5.9	4.5	4.3	3.90
Mismanagement	15.1	11.6	8.9	5.9	17.8	7.3	7.8	12.4	3.8	9.4	5.04
Family issues	22.0	12.6	7.5	8.9	18.5	6.7	7.5	6.5	2.2	7.3	4.35
Employee issues	31.0	11.5	6.9	7.2	10.6	8.3	6.9	6.0	3.2	4.6	3.78
Rules & regulations	7.8	6.5	5.5	5.0	14.9	9.7	11.0	17.2	7.3	15.1	6.21
Environmental regs	7.7	10.8	6.1	4.5	14.8	9.5	11.6	14.0	5.0	15.9	5.94
Health issues	17.0	14.3	10.3	6.6	14.3	6.6	5.3	12.2	4.2	9.0	4.78
Work conditions	19.8	17.2	7.9	8.7	21.2	7.1	7.4	6.9	1.3	2.4	4.04
Weather issues	7.4	7.7	7.1	5.3	16.7	9.8	11.9	13.2	8.5	12.4	5.97
Isolation	53.6	17.0	7.3	4.9	8.1	2.2	1.1	1.9	0.3	2.2	2.29
Time pressures	16.7	13.3	10.3	9.3	18.6	8.5	8.5	7.2	2.7	5.0	4.86
Kolmog.-S test prob	.010	.971	.613	.778	.490	.01	.267	.768	.287	.356	

Table 58 Average score on anxiety level for a variety of anxiety creating factors, by farm type. Scale of 1 to 10 with 1 representing little anxiety and 10 representing great anxiety.

Anxiety Farm type factor	Int sheep	Ext sheep	Deer	Beef	Dairy	Oth animal	Fruit	Arable	Orn/ flowers	Vege	Dairy support	Other	F test prob.
Crop/animal yields	4.4	4.4	5.8	4.0	4.6	3.5	5.8	4.9	4.0	5.0	4.8	4.9	.477
Product prices	5.8	6.1	6.0	5.7	6.0	5.0	6.3	5.1	4.8	6.5	4.8	5.4	.837
Financial /debt issues	3.6	4.3	3.3	3.2	4.5	3.7	3.1	4.4	3.8	2.5	3.7	4.0	.246
Mismanagement	4.9	4.8	6.6	4.3	5.8	3.0	4.1	4.7	5.2	5.7	4.5	3.2	.018
Family issues	4.4	4.2	5.0	4.1	4.5	4.2	3.6	4.4	6.2	3.0	4.6	3.2	.828
Employee issues	3.2	3.2	3.1	3.0	5.1	3.5	3.6	3.0	3.0	3.5	2.9	3.2	.000
Rules & regulations	5.9	6.9	6.6	6.0	6.4	3.5	5.9	6.2	5.2	5.5	6.4	5.7	.574
Environmental regs	5.2	5.9	6.3	6.3	6.6	4.0	5.1	5.6	4.0	5.5	6.1	5.3	.089
Health issues	4.3	4.4	6.0	5.4	4.7	4.7	4.1	5.1	5.4	6.2	5.2	4.3	.522
Work conditions	4.0	3.2	4.1	4.6	4.0	4.0	3.9	3.3	4.0	6.0	4.2	4.7	.278
Weather issues	6.2	6.0	6.9	5.8	5.9	4.7	6.3	6.0	5.6	6.0	5.6	5.6	.975
Isolation	2.4	2.2	2.4	2.6	2.3	2.5	1.5	1.9	1.8	1.0	2.4	2.6	.914
Time pressures	4.5	4.4	3.6	4.2	4.7	3.7	4.9	4.1	5.0	5.0	3.6	4.7	.823
Mean	4.5	4.5	5.2	4.5	5.0	3.9	4.8	4.3	5.0	4.7	4.3	3.9	.661

It is only in the mismanagement worry, employee issues and environmental regulations areas that real differences occur across farms. And again across TFC there are some differences (Table 60)

Table 59.

Average score on anxiety level for a variety of anxiety creating factors, by Total farm capital. Scale of 1 to 10 with 1 representing little anxiety and 10 representing great anxiety

Anxiety Total farm factor capital (\$)	< 2 mil	2 – 4 mil	4 – 6 mil	6 – 8 mil	8 -10 mil	10-12mil	12-20mil	> 20 mil	F test Prob.
Crop/animal yields	4.5	3.9	4.9	5.5	4.6	5.3	4.8	4.0	.038
Product prices	5.6	5.7	5.8	5.8	6.1	6.8	6.0	5.6	.722
Financial /debt issues	3.4	3.4	3.8	4.1	4.6	5.4	4.7	4.2	.019
Mismanagement	4.2	4.4	5.4	5.1	5.4	7.1	6.3	5.1	.000
Family issues	4.1	4.0	4.4	5.2	4.6	5.2	4.5	4.2	.378
Employee issues	2.8	3.0	3.5	4.2	4.7	5.9	4.4	4.8	.000
Rules & regulations	5.3	6.4	6.6	6.8	6.6	6.8	6.6	5.4	.030
Environmental regs	5.1	5.7	5.9	7.3	6.5	6.9	6.3	5.3	.007
Health issues	5.0	4.6	4.6	5.3	5.0	5.1	5.3	4.1	.628
Work conditions	4.1	3.9	4.1	4.5	3.4	4.8	3.9	3.9	.595
Weather issues	5.6	5.8	6.6	6.2	6.1	6.8	5.2	5.3	.140
Isolation	2.7	1.9	2.3	2.5	2.5	2.7	2.2	1.9	.259
Time pressures	4.3	4.1	4.8	4.5	4.7	6.2	4.3	4.2	.084
Mean	4.3	4.3	4.8	5.1	4.8	5.8	5.0	4.5	.011

However, when it comes to divisions according to debt levels (Table 60) there are quite a few issues that are significantly different (e.g. employee issues again). The same applies to equity, number of children and age. The latter two (Tables 62 and 63) are understandable.

Table 60

Average score on anxiety level for a variety of anxiety creating factors, by level of debt. Scale of 1 to 10 with 1 representing little anxiety and 10 representing great anxiety

Anxiety Level of Debt (\$) factor	Zero	<250000	251-500 thou	500-750 thou	751 thou 1 mill	1-2 mill	2-3 mill	3-5 mill	5-8 mill	> 8 mill	F test Prob
Crop/animal yields	4.2	4.2	4.2	4.5	2.9	5.7	5.8	5.6	4.6	4.0	.000
Product prices	5.4	5.9	5.8	5.8	4.5	6.7	6.1	6.3	6.4	5.8	.133
Financial /debt issues	2.5	3.4	4.4	4.2	3.5	5.2	5.1	6.2	4.7	4.5	.000
Mismanagement	4.2	4.5	4.6	5.7	5.5	5.5	6.1	6.7	6.3	5.3	.001

Family issues	3.7	4.4	4.8	5.0	3.9	5.1	4.0	4.9	4.8	4.5	.192
Employee issues	3.0	2.9	3.5	2.9	3.2	4.7	4.6	5.6	4.8	5.1	.000
Rules & regulations	6.1	6.2	6.4	5.7	7.5	6.3	6.5	6.1	6.7	5.5	.630
Environmental regs	5.5	5.6	6.1	6.0	7.2	6.2	6.7	6.9	6.1	5.5	.274
Health issues	4.5	5.4	5.6	5.2	2.4	5.1	4.0	4.5	5.9	4.3	.008
Work conditions	4.2	3.9	3.9	4.3	3.3	4.2	4.1	4.11	3.9	3.8	.963
Weather issues	5.9	6.3	6.1	6.1	5.4	6.5	6.1	5.9	5.3	5.5	.839
Isolation	1.9	2.3	2.8	3.5	2.0	2.6	1.7	2.8	2.2	2.0	.034
Time pressures	3.9	4.6	4.1	4.7	4.1	5.0	5.0	5.6	5.2	4.2	.093
Mean	4.2	4.5	4.6	5.0	4.4	5.3	4.9	5.4	5.0	4.9	.020

Table 61

Average score on anxiety level for a variety of anxiety creating factors, by equity %.
Scale of 1 to 10 with 1 representing little anxiety and 10 representing great anxiety

Anxiety Level of equity % factor	100	100 - 90	90 - 80	80 - 70	70 - 60	60 - 50	< 50%	F test Prob
Crop/animal yields	4.2	4.1	4.7	5.7	4.5	4.8	5.0	.034
Product prices	5.4	5.8	5.8	6.3	5.6	6.1	6.9	.169
Financial /debt issues	2.5	3.4	4.4	5.1	5.1	4.8	5.5	.000
Mismanagement	4.2	5.0	5.4	6.0	4.9	6.4	5.5	.001
Family issues	3.8	4.5	4.6	4.9	4.3	4.7	4.8	.267
Employee issues	3.1	3.3	3.8	4.8	4.0	4.5	5.4	.001
Rules & regulations	6.1	6.2	5.9	7.1	5.9	6.5	6.0	.545
Environmental regs	5.5	5.9	5.5	7.3	5.6	6.8	6.1	.023
Health issues	4.6	5.3	4.8	5.2	4.1	4.8	4.8	.367
Work conditions	4.2	4.0	3.9	4.7	3.6	3.5	3.8	.434
Weather issues	5.8	6.2	5.9	7.0	5.3	5.2	6.2	.087
Isolation	2.0	2.6	2.5	2.4	2.3	2.1	2.1	.477
Time pressures	4.0	4.2	4.8	4.7	4.8	5.1	5.2	.100
Mean	4.2	4.6	4.8	5.5	4.5	5.1	5.1	.004

Table 62

Average score on anxiety level for a variety of anxiety creating factors, by number of children. Scale of 1 to 10 with 1 representing little anxiety and 10 representing great anxiety

Anxiety Number of children factor	Zero	One	Two	Three	Four	Five	Six	F test Prob
Crop/animal yields	3.9	4.3	5.2	4.5	4.5	6.3	4.7	.041
Product prices	5.2	5.7	6.2	6.0	6.1	5.7	6.0	.306
Financial /debt issues	3.3	3.7	4.1	4.1	4.9	6.2	4.2	.067
Mismanagement	4.2	4.6	5.6	5.3	5.4	8.3	7.0	.003
Family issues	3.3	4.5	4.7	4.5	5.1	6.2	6.5	.001
Employee issues	3.1	3.5	4.2	3.9	4.5	5.7	3.5	.146
Rules & regulations	5.9	5.7	6.6	6.3	6.1	7.3	8.5	.410
Environmental regs	5.4	5.4	6.7	5.9	6.3	5.3	5.0	.047
Health issues	4.5	4.5	5.1	4.7	5.1	6.0	5.2	.800
Work conditions	3.9	4.1	4.3	3.7	4.4	4.7	4.2	.778
Weather issues	5.4	5.7	6.6	6.0	6.2	7.3	4.5	.140
Isolation	1.8	2.6	2.6	2.2	2.4	2.7	2.2	.023
Time pressures	3.7	4.5	5.1	4.2	4.6	6.7	6.2	.003
Mean	4.1	4.4	5.1	4.7	5.0	5.7	5.2	.006

Table 63

Average score on anxiety level for a variety of anxiety creating factors, by age of farmer. Scale of 1 to 10 with 1 representing little anxiety and 10 representing great anxiety

Anxiety Age of farmer (years) factor	< 35 years	36 - 45 years	46 – 55 years	56-65 years	> 65 years	F test Prob
Crop/animal yields	5.4	5.4	5.4	4.6	3.7	.000
Product prices	6.0	6.2	6.5	5.9	5.3	.022
Financial /debt issues	5.1	4.6	4.8	3.8	3.2	.001
Mismanagement	5.0	5.2	5.7	5.4	4.2	.001
Family issues	5.0	4.7	5.2	4.5	3.5	.001
Employee issues	5.6	4.4	4.4	3.9	3.0	.005
Rules & regulations	5.6	7.3	6.3	6.3	5.9	.259
Environmental regs	5.7	6.9	6.1	5.9	5.7	.424
Health issues	4.3	4.7	4.9	4.9	4.6	.870
Work conditions	4.9	3.8	4.3	4.1	3.8	.569
Weather issues	5.6	5.8	6.7	6.2	5.4	.019
Isolation	2.4	1.7	2.7	2.4	2.0	.106
Time pressures	5.4	5.4	5.6	4.5	3.6	.000
Mean	5.1	5.0	5.3	4.7	4.1	.000

Note the tendency for decreased anxiety as the farmer gets older for most categories. Surprisingly education (Table 64) doesn't seem to impact on anxiety, nor does gender (Table 65).

Table 64

Average score on anxiety level for a variety of anxiety creating factors, by highest level of education. Scale of 1 to 10 with 1 representing little anxiety and 10 representing great anxiety

Anxiety Highest education level factor	Primary	< 4yrs secondary	> 3 yrs secondary	< 3 yrs tertiary	> 2 yrs tertiary	F test Prob.
Crop/animal yields	2.3	4.2	4.6	4.8	5.0	.048
Product prices	5.4	5.4	6.1	5.7	5.9	.332
Financial /debt issues	2.6	3.9	3.8	4.1	4.0	.659
Mismanagement	2.7	4.7	5.3	5.4	5.1	.110
Family issues	5.6	4.2	4.4	4.5	4.4	.747
Employee issues	3.3	3.8	3.7	3.7	3.9	.985
Rules & regulations	6.4	6.2	6.5	6.3	5.7	.393
Environmental regs	5.6	6.3	6.0	6.0	5.4	.299
Health issues	5.0	4.8	4.7	4.7	4.7	.998
Work conditions	5.0	4.2	4.2	3.8	3.8	.531
Weather issues	5.1	5.7	6.2	5.9	6.1	.691
Isolation	1.1	2.0	2.4	2.3	2.5	.250
Time pressures	3.9	4.4	4.3	4.3	5.1	.236
Mean	4.0	4.6	4.8	4.7	4.7	.749

Table 65

Average score on anxiety level for a variety of anxiety creating factors by gender.
Scale of 1 to 10 with 1 representing little anxiety and 10 representing great anxiety

Anxiety Gender factor	Female	Male	F test Prob
Crop/animal yields	4.4	4.5	.822
Product prices	5.5	5.8	.546
Financial /debt issues	3.4	3.9	.313
Mismanagement	4.9	5.0	.811
Family issues	3.5	4.4	.068
Employee issues	3.4	3.8	.456
Rules & regulations	6.0	6.2	.587
Environmental regs	5.9	5.9	.898
Health issues	4.9	4.8	.809
Work conditions	3.3	4.1	.081
Weather issues	6.4	5.9	.319
Isolation	2.7	2.3	.300
Time pressures	4.4	4.4	.921
Mean	4.6	4.7	.920

14 Difficulties in debt repayment and likely remedial actions

When it comes to the remedial actions managers would take when in financial difficulties over debt payments, the most popular action would be to refinance and/or increase the loan levels. Table 66 contains this information. Least likely is seeking family help and 'sell and reinvest'.

Table 66

Distribution of a 1 to 5 score on the likelihood of taking of the potential actions listed should money owing could not be paid. A score of one means 'never' use the option through to a score of 5 meaning definitely would use the option.

Potential Score action	One (never)	Two	Three	Four	Five (definitely)
Sell some assets	34.1	17.6	13.3	13.3	21.7
Increase loans	18.2	8.3	11.7	21.6	40.1
Seek family help	60.0	16.2	9.0	5.5	9.3
Re-finance	17.3	12.8	14.7	21.7	32.6
Sell and re-invest	55.4	19.3	9.1	9.5	6.7

Table 67

Mean score on the likelihood of taking the potential actions listed should money owing could not be paid ... by equity levels. The scoring is based on 1=never use to 5= definitely use.

Equity level (%)	Potential action	Sell some Assets	Increase loans	Seek family help	Re-finance	Sell and re-invest
100 %		2.7	2.7	1.9	2.8	2.0
100 – 90 %		2.7	3.7	2.0	3.6	2.0
90 – 80 %		2.8	4.1	2.0	3.6	2.0
80 – 70 %		2.5	3.9	1.6	3.9	1.8
70 – 60 %		2.9	3.8	2.0	3.8	2.1
60 – 50 %		2.8	4.1	1.8	3.6	1.6
< 50 %		2.7	4.4	1.8	3.1	1.5
Mean score		2.7	3.6	1.9	3.4	1.9
F test probability		.974	.000	.790	.001	.413

As equity decreases Table 67 suggests farmers are more likely to increase their loan levels given problems, but the opposite sentiment is expressed over re-financing.

Differences in actions based on TFC levels is clear (Table 68) with increasing loan levels and refinancing and similarly to variations in the equity levels. The same applies across debt levels (Table 69).

Table 68

Mean score on the likelihood of taking the potential actions listed should money owing could not be paid ... by Total Farm Capital levels. The scoring is based on 1=never use to 5= definitely use.

TFC level (\$)	Potential action	Sell some assets	Increase loans	Seek family help	Re-finance	Sell and re-invest
< 2 million \$		3.1	2.7	2.0	2.9	2.2
2 – 4 million \$		2.9	3.5	1.8	3.2	2.1
4 – 6 million \$		2.3	3.7	1.7	3.5	1.7
6 – 8 million \$		2.4	4.1	1.7	3.8	1.9
8 – 10 million \$		3.1	4.2	2.6	3.9	2.0
10 – 12 million \$		2.3	3.8	1.7	3.4	1.3
12 – 20 million \$		2.7	3.9	2.0	3.5	1.5
> 20 million \$		2.9	3.9	1.6	3.6	2.0
Mean score		2.7	3.6	1.9	3.4	1.9
F test probability		.081	.000	.179	.046	.114

Table 69

Mean score on the likelihood of taking the potential actions listed should money owing could not be paid by debt levels. The scoring is based on 1=never use to 5= definitely use.

Debt level (\$)	Potential action	Sell some assets	Increase loans	Seek family help	Re-finance	Sell and re-invest
Zero		2.7	2.6	1.8	2.8	2.0
\$1 - 250000		3.0	3.4	2.3	3.4	2.2
\$250001 - 500000		2.3	3.9	1.8	3.5	1.5
\$500001 - 750000		2.6	3.9	2.2	3.9	2.2
\$750001 - 1000000		3.1	4.1	1.1	3.3	2.4
\$1 mill – 2 million		2.8	4.0	1.6	3.7	1.9
\$2 mill – 3 million		2.7	4.1	1.8	4.1	1.8
\$3 mill – 5 million		2.6	4.5	2.0	3.3	1.5
\$ 5 mill – 8 million		2.1	4.3	1.7	3.5	1.3
> \$8 million		3.1	4.0	2.0	3.6	1.8
Mean score		2.7	3.6	1.9	3.4	1.9
F test probability		.395	.000	.202	.003	.156

Interestingly enough the same conclusion applies across farm types with dairying managers most likely to use refinancing and/or increasing loan levels. For all these situations there is clearly a limit due to current equity levels.

Table 70

Mean score on the likelihood of taking the potential actions listed if money owing could not be paid by farm type. The scoring is based on 1=never use to 5= definitely use.

Farm type	Potential action	Sell some assets	Increase loans	Seek family help	Re-finance	Sell and re-invest
Intensive sheep		2.7	3.5	2.0	3.6	1.8
Extensive sheep		2.7	3.7	2.3	3.5	1.7
Deer		3.0	3.4	1.7	2.9	1.6
Beef		2.7	2.8	1.7	2.7	2.3
Dairying		2.6	4.1	1.8	3.6	2.0
Other animal		2.7	3.0	1.5	3.7	1.33
Fruit		3.5	2.5	1.3	2.2	2.4
Arable		2.4	3.8	1.0	3.3	1.0
Ornamental/flowers		2.7	3.5	1.5	3.5	1.5
Vegetable		1.0	4.0	2.0	5.0	1.0
Grazing (dairy supt.)		2.8	3.6	2.3	3.2	2.1
Other		4.0	2.3	2.7	3.3	2.2
Mean score		2.7	3.6	1.9	3.4	1.9
F test probability		.578	.000	.253	.004	.237

Table 71

Mean score on the likelihood of taking the potential actions listed if money owing could not be paid by farmer age. The scoring is based on 1=never use to 5= definitely use.

Age Potential (years) action	Sell some assets	Increase loans	Seek family help	Re-finance	Sell and re-invest
<= 35 years	4.3	5.0	3.0	4.5	1.5
36 – 45 years	2.3	4.5	1.9	3.6	1.8
46 – 55 years	2.8	4.1	1.9	3.6	1.9
56 - 65 years	2.7	3.4	1.9	3.3	2.0
> 65 years	2.7	3.1	1.8	3.3	1.8
Mean score	2.7	3.6	1.9	3.4	1.9
F test probability	.306	.000	.672	.423	.843

With increasing age the attitude to increasing loans, if necessary, changes with older people being less likely to increase the loans for obvious reasons. However, this is still their most preferred option. Refinancing is not far behind.

Table 72

Mean score on the likelihood of taking the potential actions listed if money owing could not be paid by farmer's highest level of formal education. The scoring is based on 1=never use to 5= definitely use.

Education Potential action level	Sell some assets	Increase loans	Seek family help	Re-finance	Sell and re-invest
Primary	2.8	3.0	2.1	3.5	1.5
Secondary < 3 yrs.	2.7	3.4	1.7	3.3	2.0
Secondary > 2 yrs.	2.7	3.6	2.0	3.5	1.8
Tertiary < 3 yrs.	2.7	4.0	1.9	3.6	2.3
Tertiary > 2 yrs.	2.6	3.7	2.0	3.1	1.9
Mean score	2.7	3.6	1.9	3.4	1.9
F test probability	.991	.159	.639	.367	.176

Table 73

Mean score on the likelihood of taking the potential actions listed if money owing could not be paid by number of children. The scoring is based on 1=never use to 5= definitely use.

Number Potential action of children	Sell some assets	Increase loans	Seek family help	Re-finance	Sell and re-invest
Zero	2.6	3.2	1.8	3.2	1.8
One	2.8	3.2	1.8	3.2	2.5
Two	2.7	3.9	1.9	3.6	1.8
Three	2.7	3.8	2.0	3.5	1.8
Four	2.6	3.6	2.0	3.2	1.7
Five	4.7	5.0	2.3	3.7	3.3
Six	1.3	4.0	1.0	3.7	1.5
Mean score	2.7	3.6	1.9	3.4	1.9
F test probability	.333	.006	.836	.535	.043

Education levels (Table 72) indicate the preferred action does not change with years in formal learning. Number of children seems to only impact on the attitude to 'increase loans' with a greater tendency to increase loan levels as the number of children increases.

15 Farmer's spouse' anxiety levels and influence relative to debt levels

Primary production is frequently a partnership between spouses, and if not a formal partnership, the spouse is frequently consulted and has an influence on actions. Tables 74 to 76 contain information on just how influential the spouse is over debt issues.

Table 74

Frequency distribution of the farmer's view of the spouses concern on the farm debt level AND whether the spouse significantly influences the debt level. Scoring based on a 1=never through to 5= frequently scale. The rows give the percentage of respondents providing each level of score.

Score Question	One	Two	Three	Four	Five
Spouse gets concerned over the debt level	32.7	22.8	18.2	14.5	11.9
Spouse influences the debt level	44.9	23.3	16.1	8.2	7.6

Table 75

Mean score of the farmer's view of the spouses concern on the farm debt level (1=never 5 = frequently) AND whether the spouse significantly influences the debt level (1= never..... 5=frequently) for a range of categories (TFC, Debt, Equity and No. of children).

Spouse concern or influence	Concern over debt	Influence on debt	DEBT LEVEL \$ mil	Concern over debt	Influence on debt	EQUITY %	Concern over debt	Influence on debt	NO CHILDREN	Concern over debt	Influence on debt
TFC LEVEL (\$)											
< 2 million	2.1	2.0	Zero	2.0	1.7	100	2.0	1.6	Zero	2.3	1.8
2 – 4 million	2.4	1.9	<.25	2.5	2.3	> 90	2.4	2.3	One	2.4	2.4
4 – 6 million	2.6	2.2	.25-.5	2.6	2.3	90-80	2.8	2.1	Two	2.6	2.2
6 – 8 million	2.3	1.8	.5-.75	2.6	2.4	80-70	2.7	2.3	Three	2.4	2.1
8 – 10 million	2.5	2.3	.75-1	2.2	1.7	70-60	2.9	2.0	Four	2.8	2.1
10 – 12 million	2.8	2.2	1 – 2	2.8	2.2	60-50	3.0	2.3	Five	3.7	2.5
12 – 20 million	2.8	2.4	2 – 3	3.0	2.3	< 50	2.6	2.5	Six	2.5	2.7
> 20 million	2.9	2.0	3 – 5	2.6	2.4						
			5 – 8	2.9	2.3						
			> 8	2.7	2.1						
Mean	2.5	2.1		2.5	2.1		2.5	2.1		2.5	2.1
F test probability	.239	.371		.018	.015		.001	.003		.287	.242

While many spouses are thought not to get concerned or influence debt levels, at least according to the manager, there are certainly an appreciable number impacting on the decisions, and getting anxious over the levels which in turn no doubt influences decisions. This is influenced by equity levels, as would be expected (Table 75), and debt levels (which are correlated).

Spouse gender also seems to impact the strength of the impacts (Table 76)

Table 76

Mean score of the farmer's view of the spouses concern on the farm debt level (1=never 5 = frequently) AND whether the spouse significantly influences the debt level (1= never..... 5=frequently) for a range of categories (Farmer age, highest formal education, gender)

Spouse concern or influence	Concern over debt	Influence on debt	HIGHEST EDUCATION	Concern over debt	Influence on debt	GENDER OF FARMER	Concern over debt	Influence on debt
AGE OF FARMER (years)								
< 35 years	2.6	2.2	Primary	2.0	1.7	Fem'l	2.1	2.5
36 – 45 years	2.5	2.1	< 4yrs 2 ⁰	2.4	2.0	Male	2.5	2.1
46 – 55 years	2.4	2.2	>3yrs 2 ⁰	2.6	2.1			
56 – 65 years	2.7	2.2	< 3yrs 3 ⁰	2.7	2.3			
> 65 years	2.4	1.9	>2yrs 3 ⁰	2.2	2.2			
Mean	2.5	2.1		2.5	2.1		2.5	2.1
F test probability	.596	.242		.252	.437		.124	.077

16 Farmers' self rated forecasting ability

A critical skill for successful management is an ability to successfully forecast outcomes. Being able, for example, to forecast likely financial outcomes has a large bearing on successful financing operations including debt management. The farmers were asked to self rate their belief over their forecasting skills in a range of areas. While it would be helpful to conduct multi year tests on forecasts and how successful they turn out, this is not practical with the research funding available. Tables 77 to 83 contain the data collected and analysed according to a range of categories for the self ratings.

Table 77 contains the distribution of scores on forecasting ability with a low ranking figure score expressing high skill. Most farmers rate themselves reasonably in all areas with perhaps price and cost forecasts being least successful. Both are dependent on weather and the vagaries of international markets. It is noteworthy that the farmers rate themselves as excellent forecasters over financial matters in general.

Table 77

Distribution of a farmer's self rated ability for a range of skills based on a five point scale with 1=excellent ability and 5= poor ability. Percentage of respondents in each category (row based)

Skill Score description (forecasting/ knowledge)	One (excellent)	Two	Three	Four	Five (poor)
Prices	9.7	37.5	34.0	10.5	8.4
Crop/animal yields	10.3	51.7	25.4	9.2	3.4
Weather	7.6	36.5	31.3	16.3	8.2
Costs	15.0	43.3	26.9	11.1	3.6
Financial/debt matters	30.2	41.0	21.2	5.8	1.9
Financial outcomes	31.7	46.0	16.7	3.8	1.9
Kolmogorov-S test prob.	.200	.200	.200	.200	.115

It is only for the weather where there seem to be real differences in forecasting skill across equity levels (Table 78) with across farm types (Table 79) not displaying significant differences. But when it comes to farm size in labour unit terms there are quite a few significant differences (Table 80). Yields, weather and financial forecasting have differences, though the trends are certainly not marked.

Table 78

Farm Forecast/ knowledge skill area type	Prices	Crop &/or animal yields	Weather	Costs	Financial/ debt matters	Outcome estimation from debt etc
Intensive sheep	2.6	2.5	2.6	2.4	2.2	2.0
Extensive sheep	2.6	2.4	2.6	2.7	2.1	1.9
Deer	2.2	1.9	2.1	2.5	2.1	2.2
Beef	2.6	2.6	2.8	2.5	1.9	1.9
Dairy	2.9	2.4	3.0	2.3	2.0	2.0
Other animal	2.7	3.0	3.3	3.3	2.0	2.0
Fruit	2.7	2.3	3.1	2.5	2.1	2.0
Arable	2.3	2.3	3.0	2.7	1.9	1.7
Ornamental/flowers	3.0	2.5	3.2	1.7	1.8	1.8
Vegetable	3.2	1.7	3.0	1.7	2.0	2.0
Dairy support (grazing)	2.8	2.8	2.6	2.8	2.1	1.9
Other	2.0	2.2	2.0	2.3	2.3	2.1
Mean score	2.7	2.4	2.8	2.4	2.1	2.0
F test probability	.193	.385	.028	.287	.957	.998

Mean scores on the farmer's self rating of their 'ability to forecast/knowledge of' various factors important in farm and debt management. The rating was based on a scale 1=excellent to 5=poor. Values according to equity levels on each farm.

Table 79 Mean scores on the farmer's self rating of their 'ability to forecast/knowledge of'

Equity Forecast/ knowledge skill area level (%)	Prices	Crop &/or Animal yields	Weather	Costs	Financial/ debt matters	Outcome estimation from debt etc.
100 %	2.6	2.5	2.6	2.4	2.0	1.8
100 – 90 %	2.6	2.4	2.9	2.6	2.2	2.1
90 – 80 %	2.8	2.5	2.8	2.5	2.1	2.0
80 – 70 %	3.0	2.4	2.9	2.4	2.2	2.1
70 – 60 %	2.7	2.2	2.7	2.3	1.9	2.1
60 – 50 %	2.5	2.3	3.2	2.5	1.9	1.7
< 50 %	2.8	2.5	2.8	2.4	2.1	1.9
Mean score	2.7	2.4	2.8	2.4	2.1	2.0
F test probability	.450	.712	.187	.510	.542	.171

various factors important in farm and debt management. The rating was based on a scale 1=excellent to 5=poor. Values according to farm type.

Table 80

Mean scores on the farmer's self rating of their 'ability to forecast/knowledge of' various factors important in farm and debt management. The rating was based on a scale 1=excellent to 5=poor. Values according to level of farm labour (including the manager).

Labour Forecast/ knowledge skill area unit ranges	Prices	Crop &/or animal yields	Weather	Costs	Financial/ debt matters	Outcome estimation from debt etc
<= 1 person	2.8	2.6	2.6	2.5	2.2	2.1
1 – 2 people	2.7	2.5	2.8	2.5	2.1	2.0
2 – 3 people	2.8	2.5	2.9	2.5	2.2	1.9
3 – 4 people	2.5	2.2	2.8	2.2	1.8	1.7
4 – 5 people	3.0	1.9	3.5	2.0	1.7	1.7
5 – 6 people	2.4	2.0	2.6	2.1	1.3	1.3
6 – 9 people	2.7	2.1	2.8	2.3	2.1	1.8
> 9 people	2.3	2.3	3.2	2.5	2.2	1.7
Mean score	2.7	2.4	2.8	2.5	2.1	2.0
F test probability	.569	.062	.099	.394	.052	.057

Table 81

Mean scores on the farmer's self rating of their 'ability to forecast/knowledge of' various factors important in farm and debt management. The rating was based on a scale 1=excellent to 5=poor. Values according to the age of the manager.

Age (years) of manager Forecast/ Knowledge skill area	Prices	Crop &/or animal yields	Weather	Costs	Financial/ debt matters	Outcome estimation from debt etc
<= 35 years	2.6	2.8	2.8	3.2	2.0	2.5
36 – 45 years	2.8	2.0	3.0	2.0	1.8	1.6
46 – 55 years	2.8	2.4	2.7	2.3	2.2	2.0
56 – 65 years	2.7	2.4	2.9	2.5	2.0	2.0
> 65 years	2.6	2.5	2.7	2.5	2.1	2.0
Mean score	2.7	2.4	2.8	2.4	2.1	2.0
F test probability	.704	.168	.479	.067	.242	.336

For age and education level groupings some differences occur in self rated skill with age conferring increased skill for cost estimation, but increased education seems to slightly reduce skill in weather and cost forecasting. Perhaps too much thinking is a bad thing with intuition being helpful.

Table 82

Mean scores on the farmer's self rating of their 'ability to forecast/knowledge of' various factors important in farm and debt management. The rating was based on a scale 1=excellent to 5=poor. Values according to the highest formal education level of the manager.

Education Forecast/ knowledge skill area of manager	Prices	Crop &/or animal yields	Weather	Costs	Financial/ debt matters	Outcome estimation from debt etc
Primary	2.2	2.7	2.7	2.7	2.3	1.8
Secondary < 3 years	2.5	2.4	2.7	2.5	2.2	2.0
Secondary > 2 years	2.6	2.4	2.6	2.5	2.1	2.0
Tertiary < 3 years	2.8	2.4	2.9	2.5	2.1	2.1
Tertiary > 2 years	3.0	2.4	3.1	2.3	1.9	1.8
Mean score	2.7	2.4	2.8	2.4	2.1	2.0
F test probability	.012	.962	.008	.613	.249	.410

Table 83

Mean scores on the farmer's self rating of their 'ability to forecast/knowledge of' various factors important in farm and debt management. The rating was based on a scale 1=excellent to 5=poor. Values according to the manager's gender.

Gender Forecast/ knowledge skill area of manager	Prices	Crop &/or animal yields	Weather	Costs	Financial/ debt matters	Outcome estimation from debt etc
Female	2.4	2.2	2.7	2.2	2.0	1.9
Male	2.7	2.4	2.8	2.5	2.1	2.0
Mean score	2.7	2.4	2.8	2.4	2.1	2.0
F test probability	.095	.170	.536	.127	.610	.649

Overall, the gender of the manger does not seem to be associated with a variation in self rated skill other than for prices where females regard themselves as having a greater skill.

17 Frequency of stress over debt and general farming issues

Earlier tables presented information on anxiety levels for a range of areas. To further assess this area the farmers were asked to indicate the frequency of experiencing significant anxiety ... note 'frequency' and 'significant' as being the key words. Table 84 contains the frequency distributions of the answers for the two areas general farming issues and debt issues.

Table 84

Distribution of the rating scores for the frequency with which significant anxiety was experienced for debt as well as general farming issues. Scale based on 1=often through to 5=seldom.

Area of score significant anxiety	Rating	One (often)	Two	Three	Four	Five (seldom)
Frequency of anxiety over debt		6.2	14.8	17.2	24.5	37.4
Frequency of anxiety over general farming issues		5.9	17.9	28.3	26.9	21.1

The managers do not believe they 'often' experience significant anxiety, but nevertheless believe the 2 – 4 ratings are important. Note also, however, that a third of farmers believe they seldom experience significant anxiety for debt issues, but only a fifth for general farming issues ... clearly the latter are important to the managers.

Table 85

Mean rating scores for the frequency with which significant anxiety was experienced for debt as well as general farming issues. Scale based on 1=often through to 5=seldom.

Means for farm type, debt levels, equity levels, and number of children.

Significant anxiety mean FARM rating TYPE	Frequency of debt anxiety	Freq. of gen. issues anxiety	DEBT LEVEL \$ mil	Frequency of debt anxiety	Freq. of gen. issues anxiety	EQUITY %	Frequency of debt anxiety	Freq. of gen. issues anxiety	NO CHILDREN	Frequency of debt anxiety	Freq. of gen. issues anxiety
Intensive sheep	3.6	3.3	Zero	4.0	3.6	100	4.1	3.6	Zero	3.8	3.6
Extensive sheep	3.3	3.2	<.25	3.8	3.3	> 90	3.8	3.4	One	3.9	3.6
Deer	3.5	3.5	.25-.5	3.5	3.4	90-80	3.8	3.3	Two	3.7	3.3
Beef	3.6	3.6	.5-.75	3.7	3.2	80-70	3.2	3.0	Three	3.6	3.2
Dairy	3.4	3.4	.75-1	4.1	3.9	70-60	3.7	3.3	Four	3.2	3.2
Other animal	2.7	2.7	1 – 2	3.1	3.0	60-50	3.4	3.6	Five	4.5	3.2
Fruit	3.6	3.6	2 – 3	3.7	3.0	< 50	3.3	3.0	Six	3.0	4.5
Arable	3.6	2.8	3 – 5	3.3	2.7						
Orn/flowers	3.6	3.2	5 – 8	3.4	3.8						
Vegetables	4.5	4.2	> 8 mil	3.8	3.3						
Dairy support	3.8	3.6									
Other	3.6	3.3									
Mean	3.7	3.4		3.7	3.4		3.7	3.4		3.7	3.4
F test probability	.637	.528		.006	.005		.002	.034		.124	.129

Table 86

Mean rating scores for the frequency with which significant anxiety was experienced for debt as well as general farming issues. Scale based on 1=often through to 5=seldom. Means for farmer age (years), highest formal education level, and gender.

Significant anxiety mean rating AGE OF FARMER (years)	Frequency of debt anxiety	Freq. of gen. issues anxiety	HIGHEST EDUCATION	Frequency of debt anxiety	Freq. of gen. issues anxiety	GENDER OF FARMER	Frequency of debt anxiety	Freq. of gen. issues anxiety
< 35 years	3.8	3.4	Primary	3.4	3.4	Fem'l	4.1	3.5
36 – 45 years	3.8	3.5	< 4yrs 2⁰	3.8	3.4	Male	3.7	3.4
46 – 55 years	3.5	3.1	>3yrs 2⁰	3.7	3.5			
56 – 65 years	3.7	3.3	< 3yrs 3⁰	3.7	3.4			
> 65 years	3.8	3.6	>2yrs 3⁰	3.7	3.4			
Mean	3.7	3.4		3.7	3.4		3.7	3.4
F test probability	.722	.009		.960	.962		.006	.000

It will be noted significant differences in frequent and significant anxiety occur between different debt and equity levels, but not across farm types and the number of children the farmer has. This suggests all types of farming have similar stress, but clearly debt levels influence anxiety quite markedly. It is also clear age influences the degree of anxiety for general farm issues, but not debt issues. Perhaps age brings some form of philosophical approach to the problems. There is a clear difference between genders with females being less anxious.

18 Farmers' views on various managerial approaches and attitudes (Locus of control)

It would be expected farmers' Locus of Control would be correlated with anxiety and debt issues. Feelings of control, real or imagined, would influence accepting and using debt, and subsequently create anxiety from the feeling of a lack of control when high debt eventuates for whatever reason (perhaps a series of years with very low product prices).

Tables 87 to 93 present the farmers' answers to the question set designed to document the farmers' attitude to their feelings of control over decisions and outcomes. Table 93 contains the significance probability figures for judging the real differences in the averages.

Table 87 gives the distribution of the answers provided by the farmers in the 5 point statement truth rating. It is clear farmers do largely believe they have achieved their goals,

but at the other extreme, they also believe they do not have to meet others' demands. They are also reasonably confident that many failures are beyond their control.

Table 87

Distribution of farmers' rating on the truth of 'managerial approaches' questions. Rated on 1 (true) to 5 (not true) with 2-4 expressing degrees of truth to not true. Row based percentages. 'Ave.' is the average score for the question (out of 5)

Question precis* Question truth degree...	True (1)	Rank 2	Rank 3	Rank 4	Not true(5)	Ave
Have achieved my goals	41.4	39.6	15.2	2.0	1.8	1.8
Don't try things unlikely to work	7.9	14.7	26.3	30.9	20.3	3.4
Use procedures successful from past	13.5	18.0	21.6	21.6	25.4	3.2
Not stubborn over things not working	32.6	25.2	27.5	11.2	3.6	2.3
Good luck is good m'ment & vice/versa	30.6	32.4	21.2	8.9	6.9	2.3
Do not rely on others for a good job	19.8	25.9	26.9	15.2	12.2	2.7
Can manage others to do jobs my way	11.0	31.1	43.6	9.4	4.8	2.7
Often have to meet others' demands	3.6	8.9	16.0	27.9	43.7	4.0
Management skill mainly genetic	9.2	15.5	23.9	20.9	30.5	3.5
People often uncooperative and selfish	6.3	8.6	32.7	25.9	26.4	3.6
Most employees work hard	26.0	41.8	26.0	3.4	2.9	2.1
Poor farm outcomes uncontrollable	29.1	31.6	23.2	9.7	6.4	2.3
Community improvements easy	10.5	19.8	34.6	16.8	18.3	3.1
Get frustrated with non-controllables	14.0	27.9	29.9	18.5	9.6	2.8
Have not had much luck	4.6	4.3	19.5	26.9	44.7	4.0
I'm a good planner with written plans	26.0	28.0	19.6	17.0	9.4	2.6
Seldom change plans despite chance	15.5	22.8	24.9	20.6	16.2	3.0
Failures usually beyond my control	21.9	26.0	29.3	13.2	9.7	2.6
Determined when I know I'm right	36.2	38.8	19.4	3.8	1.8	2.0
Significance probabilities (Chi square)	.895	.000	.000	.000	.895	

* See the appendix for the questionnaire giving the complete questions (Section G)

In looking at the data when divided by farm type (tables 88 and 89) it is clear most farm types' managers are similar in their attitudes other than for three situations (see Table 93). It seems there is a difference over 'use procedures successful from the past', 'don't rely on others', and 'determined when know I am right'. Perhaps the issues, such as labour availability, vary across farm types.

Table 88 a

(First half) Mean scores of farmers' rating on the truth of 'managerial approaches' questions. Rated on 1 (true) to 5 (not true) with 2-4 expressing degrees of truth to not true according to farm types. See a table below for the significant difference test values.

Question precis* Farm type	Intensive sheep	Extensive sheep	Deer	Beef	Dairy	Other animal
Have achieved my goals	1.9	2.0	1.5	1.8	1.7	1.7
Don't try things unlikely to work	3.4	3.4	3.7	3.3	3.4	4.5
Use procedures successful from past	3.1	3.3	3.7	2.7	3.5	3.2
Not stubborn over things not working	2.3	2.3	2.2	2.3	2.1	2.0
Good luck is good m'ment & vice/versa	2.3	2.4	3.0	2.1	2.2	2.0
Do not rely on others for a good job	2.8	2.7	2.0	2.2	2.9	3.2
Can manage others to do jobs my way	2.8	2.8	2.8	2.4	2.7	2.5
Often have to meet others' demands	4.1	3.8	4.0	4.2	3.9	3.5
Management skill mainly genetic	3.5	3.3	3.6	3.2	3.7	3.0
People often uncooperative and selfish	3.4	3.5	3.5	3.5	3.7	4.0
Most employees work hard	2.1	2.0	2.4	2.1	2.3	1.7
Poor farm outcomes uncontrollable	2.5	2.4	2.2	2.1	2.3	2.5
Community improvements easy	3.0	3.1	2.8	3.1	3.2	3.5
Get frustrated with non-controllables	2.8	2.9	2.7	2.9	2.7	3.2
Have not had much luck	4.1	3.9	4.0	3.9	4.2	2.7
I'm a good planner with written plans	2.4	2.7	2.3	2.7	2.6	2.2
Seldom change plans despite chance	2.9	2.9	3.5	2.7	3.2	3.0
Failures usually beyond my control	2.6	2.3	2.5	2.8	2.7	2.2
Determined when I know I'm right	2.1	1.8	1.7	1.7	2.0	1.2

* See the appendix for the questionnaire giving the complete questions (Section G)

Table 88 b

(Second half) Mean scores of farmers' rating on the truth of 'managerial approaches' questions. Rated on 1 (true) to 5 (not true) with 2-4 expressing degrees of truth to not true according to farm types. See a table below for the significant difference test values.

Question precis* Farm type	Fruit	Arable	Ornamental/ flowers	Vegetable	Dairy support	Other
Have achieved my goals	2.1	2.0	2.2	1.5	1.8	1.9
Don't try things unlikely to work	3.6	3.3	3.6	2.7	3.1	4.1
Use procedures successful from past	3.7	3.2	3.4	4.5	3.4	3.6
Not stubborn over things not working	2.4	3.1	1.8	3.2	2.5	2.4
Good luck is good m'ment & vice/versa	2.6	2.1	1.8	3.0	2.6	2.7
Do not rely on others for a good job	3.2	2.7	2.6	2.7	2.6	3.9
Can manage others to do jobs my way	2.4	2.8	2.6	2.0	2.6	2.1
Often have to meet others' demands	4.0	3.2	4.8	4.7	4.1	3.4
Management skill mainly genetic	3.6	3.1	3.6	3.2	3.5	3.9
People often uncooperative and selfish	3.9	3.3	3.0	4.2	3.6	3.6
Most employees work hard	2.3	2.5	1.4	2.0	2.3	1.4
Poor farm outcomes uncontrollable	2.3	2.1	1.8	1.5	2.8	2.1
Community improvements easy	3.3	2.9	3.4	3.0	3.2	3.5
Get frustrated with non-controllables	2.9	2.8	2.8	3.2	2.8	3.1
Have not had much luck	4.0	3.6	4.2	3.5	3.8	3.6
I'm a good planner with written plans	2.9	2.5	3.0	2.2	2.3	1.9
Seldom change plans despite chance	3.1	2.8	2.6	2.7	2.9	2.7
Failures usually beyond my control	2.5	2.8	2.2	2.7	2.5	2.3
Determined when I know I'm right	2.0	2.3	2.8	2.5	2.1	1.7

* See the appendix for the questionnaire giving the complete questions (Section G)

For increasing farm capital levels there seems to be rather more significant differences as shown in Table 90 and Table 93 (significance test values) than for farm type differences. For example, there are differences in attitudes to 'poor farm outcomes are uncontrollable' and 'good luck is good management and vice-versa' as well as some of the other factors. As you would expect, the investment level impacts on manager attitudes.

Table 89

Mean scores of farmers' rating on the truth of 'managerial approaches' questions. Rated on 1 (true) to 5 (not true) with 2-4 expressing degrees of truth to not true according to Total Farm Capital. See a table below for the significant difference test values.

Question precis*								
Total farm capital categories \$	< 2 million	2 – 4 million	4 – 6 million	6 – 8 million	8 – 10 million	10 – 12 million	12 – 20 million	> 20 million
Have achieved my goals	2.0	1.9	1.9	1.6	1.9	1.6	1.5	1.8
Don't try things unlikely to work	3.3	3.3	3.4	3.5	3.8	3.4	3.1	3.5
Use procedures successful from past	2.8	3.1	3.4	3.3	3.6	3.7	3.6	3.6
Not stubborn over things not working	2.0	2.6	2.3	2.5	2.3	2.2	2.1	1.9
Good luck is good m'ment & vice/versa	2.4	2.5	2.6	2.1	2.5	1.9	1.8	1.7
Do not rely on others for a good job	2.4	2.7	2.9	3.0	2.6	2.3	3.1	3.3
Can manage others to do jobs my way	2.8	2.6	2.6	2.7	2.8	2.8	2.6	2.4
Often have to meet others' demands	4.0	4.0	3.8	4.2	3.9	4.0	4.1	3.9
Management skill mainly genetic	3.3	3.4	3.5	3.5	3.6	3.5	4.0	3.5
People often uncooperative and selfish	3.3	3.6	3.5	3.8	3.5	3.8	3.7	3.8
Most employees work hard	2.2	2.2	2.2	1.7	2.3	2.6	2.1	2.1
Poor farm outcomes uncontrollable	2.2	2.4	2.3	1.9	2.4	1.9	2.3	2.9
Community improvements easy	2.9	3.1	3.4	3.0	3.1	3.1	2.9	3.2
Get frustrated with non-controllables	2.9	2.9	2.8	2.6	2.6	2.5	2.9	3.1
Have not had much luck	3.7	3.8	4.0	4.0	4.0	4.2	4.6	4.7
I'm a good planner with written plans	2.7	2.6	2.6	2.8	2.5	2.5	2.3	2.0
Seldom change plans despite chance	2.7	3.1	2.8	3.0	3.2	3.1	3.4	3.4
Failures usually beyond my control	2.4	2.6	2.5	2.1	3.0	2.6	3.1	3.2
Determined when I know I'm right	2.1	2.0	2.1	1.8	1.7	2.0	1.9	2.0

* See the appendix for the questionnaire giving the complete questions (Section G)

Tables 90, 91, and 92 give breakdowns of the farmers' average answers to the truth of the questions for variations in debt levels, equity levels as well as farmer age and education.

Table 93 shows there are certainly significant differences for some questions in all these cases. The truth of the question 'seldom change plans despite chance' has significant differences across all these categories, and the statement 'management skill is mainly genetic' is significantly different across age and education categories. It seems education does help farmers sort out the logic of the situation. Table 93 shows where other significant differences between attitudes occur.

Table 90

Mean scores of farmers' rating on the truth of 'managerial approaches' questions. Rated on 1 (true) to 5 (not true) with 2-4 expressing degrees of truth to not true according to debt levels (\$). See a table below for the significant difference test values.

Question precis*										
Debt level ranges - million \$	Zero	<.25 million	.25 - .5	.5 - .75	.75 - 1.0	1 - 2	2 - 3	3 - 5	5 - 8	> 8 million
Have achieved my goals	1.8	2.1	1.9	1.9	1.9	1.8	1.6	2.2	1.5	1.7
Don't try things unlikely to work	3.3	3.5	3.6	3.3	3.7	3.6	3.6	3.5	2.9	3.4
Use procedures successful from past	2.8	3.2	3.6	3.4	3.3	3.7	3.9	3.6	3.3	3.6
Not stubborn over things not working	2.3	2.2	2.3	2.5	1.9	2.6	2.0	2.1	2.1	2.1
Good luck is good m'ment & vice/versa	2.4	2.3	2.9	2.4	2.4	2.3	1.9	2.0	1.9	1.8
Do not rely on others for a good job	2.6	2.5	2.7	2.9	3.3	2.8	2.7	2.4	3.0	3.3
Can manage others to do jobs my way	2.7	2.7	2.8	2.4	3.1	2.7	2.4	2.8	2.7	2.4
Often have to meet others' demands	4.1	3.9	3.8	3.9	3.8	4.0	4.1	3.7	4.0	4.2
Management skill mainly genetic	3.3	3.5	3.5	3.5	3.9	3.7	3.3	3.4	4.2	3.6
People often uncooperative and selfish	3.6	3.2	3.4	3.5	4.3	3.8	3.3	3.5	3.9	3.7
Most employees work hard	2.2	2.1	2.1	2.1	2.3	2.0	1.9	2.1	2.5	2.2
Poor farm outcomes uncontrollable	2.3	2.3	2.5	2.0	2.7	2.4	2.1	2.1	2.2	2.9
Community improvements easy	3.2	3.1	3.0	3.4	3.3	3.1	2.5	3.0	3.2	3.3
Get frustrated with non-controllables	2.9	2.7	2.9	2.3	3.2	2.9	2.5	2.1	2.9	3.3
Have not had much luck	4.0	3.6	4.0	4.0	4.5	4.3	3.9	3.7	4.2	4.6
I'm a good planner with written plans	2.7	2.7	2.3	2.8	3.1	2.5	2.5	2.0	2.6	2.0
Seldom change plans despite chance	2.7	2.9	3.2	3.2	3.4	3.3	3.0	3.1	3.1	3.3
Failures usually beyond my control	2.5	2.3	2.9	2.0	2.7	2.8	2.8	2.7	2.6	3.2
Determined when I know I'm right	2.0	2.0	1.9	1.9	2.0	2.0	1.9	1.6	2.0	1.9

* See the appendix for the questionnaire giving the complete questions (Section G)

Table 91

Mean scores of farmers' rating on the truth of 'managerial approaches' questions. Rated on 1 (true) to 5 (not true) with 2-4 expressing degrees of truth to not true according to equity levels (%). See a table below for the significant difference test values.

Question precis* Equity levels (%)	100 %	100 – 90 %	90 – 80 %	80 – 70 %	70 – 60 %	60 – 50 %	< 50 %
Have achieved my goals	1.8	1.8	1.9	1.8	2.0	1.7	1.8
Don't try things unlikely to work	3.3	3.5	3.4	3.6	3.5	3.3	3.4
Use procedures successful from past	2.8	3.4	3.5	3.8	3.6	3.5	3.3
Not stubborn over things not working	2.3	2.2	2.4	2.3	2.3	2.0	2.4
Good luck is good m'ment & vice/versa	2.4	2.3	2.2	2.6	2.0	1.8	2.4
Do not rely on others for a good job	2.6	2.7	2.7	3.0	3.1	2.7	2.6
Can manage others to do jobs my way	2.6	2.8	2.5	2.7	2.5	2.8	2.6
Often have to meet others' demands	4.1	3.8	4.2	3.9	4.0	4.1	3.8
Management skill mainly genetic	3.3	3.5	3.5	3.6	3.3	3.9	3.8
People often uncooperative and selfish	3.6	3.4	3.5	3.7	3.7	3.4	3.9
Most employees work hard	2.2	2.1	2.0	2.0	2.1	2.3	2.4
Poor farm outcomes uncontrollable	2.3	2.2	2.6	2.0	2.7	2.4	2.3
Community improvements easy	3.2	3.0	3.2	3.0	2.9	3.4	3.3
Get frustrated with non-controllables	2.9	2.7	2.8	2.6	3.1	2.8	2.7
Have not had much luck	4.0	4.0	4.2	4.1	4.0	4.4	3.9
I'm a good planner with written plans	2.7	2.7	2.4	2.5	2.4	2.3	2.4
Seldom change plans despite chance	2.7	3.0	3.4	3.3	3.1	3.1	3.0
3.0Failures usually beyond my control	2.6	2.4	3.0	2.5	2.9	2.5	3.1
Determined when I know I'm right	2.0	2.0	1.9	2.1	1.9	1.7	1.9

* See the appendix for the questionnaire giving the complete questions (Section G)

Table 92

Mean scores of farmers' rating on the truth of 'managerial approaches' questions. Rated on 1 (true) to 5 (not true) with 2-4 expressing degrees of truth to not true according to the farmers' age (years) and highest level of formal education. See a table below for the significant difference test values.

Question precis* Farmer's age (years) OR farmer's highest formal education	AGE < 35	AGE 36 - 45	AGE 46 - 55	AGE 56 - 65	AGE > 65	ED primary	EDN < 3 yrs secondary	EDN > 2yrs. secondary	EDN < 3 yrs tertiary	EDN > 2 yrs tertiary
Have achieved my goals	2.2	1.5	2.1	1.8	1.7	1.6	1.7	1.9	1.8	2.0
Don't try things unlikely to work	3.6	4.0	3.4	3.5	3.3	3.2	3.2	3.5	3.4	3.6
Use procedures successful from past	4.0	4.0	3.6	3.4	2.8	1.9	3.0	3.4	3.5	3.5
Not stubborn over things not working	1.8	2.3	2.3	2.2	2.3	2.2	2.3	2.2	2.4	2.1
Good luck is good m'ment & vice/versa	2.6	1.8	2.4	2.3	2.3	2.6	2.2	2.4	2.3	2.1
Do not rely on others for a good job	3.6	3.3	2.7	2.8	2.5	2.8	2.5	2.8	2.8	2.8
Can manage others to do jobs my way	2.8	2.7	2.7	2.7	2.5	2.9	2.6	2.6	2.6	2.8
Often have to meet others' demands	3.6	3.9	3.8	4.0	4.1	4.0	4.1	3.9	3.9	4.1
Management skill mainly genetic	2.8	4.2	3.7	3.4	3.3	3.0	3.1	3.5	4.0	3.6
People often uncooperative and selfish	3.5	4.1	3.7	3.4	3.6	3.9	3.5	3.5	3.4	3.8
Most employees work hard	1.8	2.1	2.0	2.3	2.2	2.7	2.2	2.0	2.1	2.2
Poor farm outcomes uncontrollable	1.8	2.7	2.2	2.4	2.3	2.2	2.1	2.3	2.4	2.5
Community improvements easy	2.8	3.0	3.1	3.3	3.0	2.6	3.1	3.1	3.1	3.2
Get frustrated with non-controllables	2.7	2.6	2.7	2.8	2.9	3.1	2.7	2.7	2.9	2.9
Have not had much luck	4.3	4.5	4.0	4.1	3.9	3.6	4.0	4.0	4.0	4.2
I'm a good planner with written plans	2.2	2.0	2.6	2.6	2.6	2.9	2.6	2.6	2.6	2.4
Seldom change plans despite chance	3.5	3.5	3.1	3.1	2.7	2.4	2.7	3.1	3.2	3.2
Failures usually beyond my control	3.0	3.0	2.7	2.8	2.4	2.3	2.3	2.7	2.6	2.9
Determined when I know I'm right	1.8	1.8	1.9	2.0	1.9	1.9	1.9	2.0	1.9	2.0

* See the appendix for the questionnaire giving the complete questions (Section G)

Table 93

F test significance probabilities for the 'treatment' listed at the head of each column for the 'managerial approaches' questions.

Question precis*	Farm type	Total farm capital	Debt levels	Equity levels	Age	Education
F Test probabilities for each category named						
Have achieved my goals	.639	.053	.155	.923	.000	.202
Don't try things unlikely to work	.536	.499	.416	.782	.166	.231
Use procedures successful from past	.018	.007	.000	.000	.000	.000
Not stubborn over things not working	.261	.035	.438	.854	.853	.648
Good luck is good m'ment & vice/versa	.337	.002	.011	.105	.271	.228
Do not rely on others for a good job	.005	.004	.062	.278	.028	.229
Can manage others to do jobs my way	.216	.629	.363	.652	.496	.709
Often have to meet others' demands	.106	.666	.847	.396	.472	.476
Management skill mainly genetic	.717	.313	.186	.339	.007	.000
People often uncooperative and selfish	.681	.328	.044	.640	.087	.199
Most employees work hard	.193	.072	.704	.460	.284	.290
Poor farm outcomes uncontrollable	.411	.020	.175	.074	.379	.229
Community improvements easy	.960	.352	.351	.423	.483	.726
Get frustrated with non-controllables	.952	.266	.019	.584	.655	.654
Have not had much luck	.220	.000	.002	.596	.145	.349
I'm a good planner with written plans	.756	.250	.096	.738	.206	.671
Seldom change plans despite chance	.560	.035	.078	.067	.006	.016
Failures usually beyond my control	.746	.001	.018	.044	.054	.013
Determined when I know I'm right	.052	.614	.927	.683	.800	.968

* See the appendix for the questionnaire giving the complete questions (Section G)

When comparing male farmers with female farmers there were no significant differences in the mean values for all of the 'managerial approaches' questions. The closest to a difference was the last statement at an F probability of .138.

The farmers' ratings of the statement truth levels can be used to give each farmer a percentage score on their belief in how much control they have. This is explained in the book 'Farm business management ... the human factor' published by CABI.

19 Farmers' sources of personal income

Tables 94 to 96 show by far the majority of farmers receive their income from a fixed salary plus farm profits with only around a fifth receiving their income from farm profits alone. This reflects the ownership structures of farms with large numbers involving partnerships paying the managing partner a salary as well as a

distribution from the profits. Across farm types there are few differences in this dominance of salary and profits. Share milkers are clearly an exception and for some of the large sheep farms a salaried manager is employed.

Table 94

Percentage of farmers in each farm type category receiving income from the listed categories.

Farm type Income type	Fixed salary	Salary and farm profit	Farm profits	Share milker %	Other
All farms	7.7	70.6	20.2	1.1	0.5
Intensive sheep	11.5	71.3	17.2	0	0
Extensive sheep	13.3	62.2	22.2	0	2.2
Deer	0	80.0	20.0	0	0
Beef	3.5	80.7	15.8	0	0
Dairy	7.0	65.2	23.5	3.5	0.9
Other animal	0	75.0	25.0	0	0
Fruit	0	80.0	20.0	0	0
Arable	0	70.0	30.0	0	0
Ornamental/flowers	20.0	60.0	20.0	0	0
Vegetable	0	50.0	50.0	0	0
Dairy support	11.1	77.8	11.1	0	0
Other	0	85.7	14.3	0	0
Kolmogorov-S test prob.	.008	.378	.004	.000	.000

Across the other breakdowns of the farmer income sources there are few significant differences.

Table 95

Percentage of farmers in each equity and total farm capital category receiving income from the listed categories.

EQUITY LEVEL % Income type	Fixed salary	Salary and farm profit	Farm profits	Share milker %	Other
100 %	5.3	79.8	13.2	1.8	0
100 – 90 %	5.2	63.6	31.2	0	0
90 – 80 %	14.0	69.8	16.3	0	0
80 – 70 %	5.1	74.3	17.9	0	2.6
70 – 60 %	9.5	59.5	30.9	0	0
60 – 50 %	14.3	67.8	14.3	3.6	0
< 50 %	12.5	62.5	20.8	4.2	0
Kolmogorov-S test prob.	.155	.200	.200	.013	.000
TOTAL FARM CAPITAL (\$)					
<= 2 million \$	3.1	80.0	15.4	1.5	0
2 – 4 million	2.3	76.1	19.3	1.1	1.1
4 – 6 million	11.1	71.4	17.5	0	0
6 – 8 million	6.9	75.9	17.2	0	0
8 – 10 million	11.8	64.7	23.5	0	0
10 – 12 million	25.0	66.7	4.2	4.2	0
12 – 20 million	9.3	53.1	34.4	3.1	0
> 20 million \$	9.4	53.1	37.5	0	0
Kolmogorov-S test prob.	.099	.200	.200	.071	.000

Table 96

Percentage of farmers in each Age and Education category receiving income from the listed categories.

AGE RANGE (YEARS) Income type	Fixed salary	Salary and farm profit	Farm profits	Share milker %	Other
< 35 years	20	60	20	0	0
36 – 45 years	12.5	45.8	33.3	4.2	4.2
46 – 55 years	11.0	62.2	23.2	3.7	0
56 – 65 years	6.1	73.8	20.0	0	0
> 65 years	5.9	77.2	16.2	0	0.7
Kolmogorov-S test prob.	.200	.200	.200	.027	.032
EDUCATION LEVEL					
Primary	14.3	71.4	14.3	0	0
< 4 years secondary	4.5	75.4	17.3	0.9	1.8
> 3 years secondary	10.6	73.2	13.8	2.4	0
< 3 years tertiary	7.0	61.4	31.6	0	0
> 2 years tertiary	7.6	65.8	26.6	0	0
Kolmogorov-S test prob.	.200	.200	.200	.068	.001

20 Farm income, expenditure and cash surplus levels

The following tables (97 to 110) provide information on the farms' income and expenditure. The list of variables explored are listed in Table 97 (off farm income through to principal and interest payments). The number of farmers answering each question, and the standard deviation for each variable are also presented.

Table 97

Items of income, expenditure and annual cash surplus for the whole sample

Income/expense item	No farmers answering	Mean	Standard deviation
Off farm income as % of total net farm income	372	24.55	33.04
Farm cash surplus increase % (ave last 5 years)	313	4.88	8.73
Gross income per labour unit	265	287410	222368
Rent/lease cost per labour unit	153	16920	43714
Farm working expenses per labour unit	239	158490	216470
Principal repayments per labour unit	160	19150	27588
Depreciation per labour unit	170	17720	33334
Off farm income per labour unit	182	38820	86660
Interest per labour unit	194	37280	37871

Recall that in a normal distribution 95% of all observations are within the range 'mean plus or minus 1.96' standard deviations. Note the surprisingly high off-farm income as a % of net farm income. Also note the number of farms answering each question.

The data is presented on a per labour unit basis to work towards removing the impact of different farming types that all have different soils, average areas, labour forces, capital investment and so on.

Tables 98 and 99 provide the distributions of the variables by providing the number of farms falling into each range as listed. As the number of variables is too large to all appear in one table, a second table is presented for some breakdowns (table 99 in this case).

Table 97 shows the surprisingly high off farm income that the respondents report. Interest payments are significant as are the principal payments though it is clear many mortgages are 'interest only' as noted in an earlier table. The difference between income and working expenses is nearly \$129000 which is available to pay all the other listed expenses. Note also farmers believe they have, on average, had an increase in cash surplus of 4.9 % per year.

Table 98

Distribution of income and expense variables. Percentage falling into each category
(Col percentages)

Percentage range	Off farm income as % of total net farm income	Percentage range	Farm cash surplus incr. % (ave last 5 yrs) (%)	Dollar range (\$10000 s)	Gross income per labour unit (%)	Dollar range (\$1000s)	Rent/lease cost per labour unit (%)	Dollar range (\$10000s)	Farm working expenses per labour unit (%)
<=1	34.1	< -5	8.3	< 5	9.4	0	39.9	<20	7.9
2	3.3	-5- 0	12.8	5-10	11.0	0-3	10.1	20-40	8.4
3	2.1	1-2	10.8	10-20	17.0	3-4	3.9	40-60	10.9
4	1.6	3-4	8.1	20-30	16.2	4-5	3.3	60-80	8.4
5	8.6	5-6	0.3	30-40	19.3	5-10	5.9	80-100	7.1
6-10	9.4	7-8	3.2	40-50	12.4	10-20	17.6	100-120	7.5
11-20	7.2	9-10	18.9	50-60	4.9	20-30	4.0	120-140	8.0
21-30	6.8	15	2.9	>60	5.7	30-40	5.8	140-160	5.0
31-40	2.1	16-20	6.7			40-50	3.3	160-180	5.0
41-50	5.8	>20	2.2			50-60	3.3	180-200	6.7
51-70	3.2					>60	3.9	200-220	3.8
71-80	2.7							220-240	2.5
81-90	3.2							240-260	2.5
>90	8.9							260-280	3.9
								280-300	6.3
								>300	7.1
K-S prob	.000		.460		.923		.000		.339

Table 99

Distribution of further income and expense variables. Percentage falling into each category (Col percentages)

Dollar ranges (\$1000s)	Principal repayments per labour unit (%)	Dollar ranges (\$1000s)	Depreciation per labour unit (%)	Dollar ranges (\$5000s)	Off farm income per labour unit (%)	Dollar ranges (\$1000s)	Interest per labour unit (%)
0	45.0	<2	8.8	0	26.4	<2	22.1
<10	8.1	2-4	7.7	0-1	14.8	2-4	2.1
10-20	16.3	4-6	8.2	1-2	10.4	4-6	3.6
20-30	6.9	6-8	10.6	2-3	9.9	6-8	2.6
30-40	7.5	8-10	10.0	3-4	7.7	8-10	1.5
40-50	5.6	10-12	7.6	4-5	2.2	10-12	3.6
50-60	3.1	12-14	8.3	5-6	4.4	12-20	6.7
60-70	1.3	14-16	7.0	6-7	2.8	20-28	9.3
70-80	1.2	16-18	10.6	7-8	0.5	28-36	6.7
80-90	1.3	18-20	4.1	8-12	3.3	36-44	4.1
90-100	1.2	20-22	2.3	12-16	5.0	44-52	8.3
>100	1.9	22-24	4.7	16-20	2.2	52-60	5.1
		24-26	3.0	>20	9.9	60-68	2.1
		26-28	0			68-76	4.6
		28-30	2.3			76-84	3.6
		30-32	1.2			84-90	2.1
		>30	10.0			90-96	2.1
						>96	7.2
K-S prob	.000		.244		.007		.000

Some farms do have very high principal and interest payments with some over a \$100000 per labour unit principal payment and over \$96000 per labour unit in interest.

Table 100

Means for a range of per labour unit income and expense categories per farm type.

Table 101 contains further categories.

Farm type Income / expense category	Off farm income as % of total net farm income	Farm cash surplus incr. % (ave last 5 yrs)	Gross income Per labour unit \$	Rent/lease cost per labour Unit \$	Farm working expenses per labour unit \$
All farms	24.5	4.9	287410	16920	158490
Intensive sheep	16.4	3.8	246340	12060	123320
Extensive sheep	17.1	2.8	296760	14420	171340
Deer	31.0	5.4	401430	8040	161100
Beef	38.8	5.9	207220	9240	98210
Dairy	21.2	4.8	335320	29170	224890
Other animal	16.2	7.3	98890	0	60330
Fruit	41.5	5.6	370330	4180	71620
Arable	26.4	7.5	596500	19120	310830
Ornamental/flowers	58.2	7.0	76670	250	55670
Vegetable	27.5	3.7	433330	36250	393330
Dairy support	32.9	8.8	186910	9420	72710
Other	12.0	7.4	299370	5000	64200
F test sign. probability	.001	.658	.000	.829	.035

Table 101

Means for a range of per labour unit income and expense categories per farm type.

Table 100 contains further categories.

Farm type Income / expense category	Principal repayments per labour unit (\$)	Depreciation per labour unit (\$)	Off farm income per labour unit (\$)	Interest per labour unit (\$)
All farms	19150	17720	38820	36280
Intensive sheep	15660	13720	25630	32370
Extensive sheep	14820	14570	11110	43790
Deer	19170	34670	44330	33420
Beef	9730	8050	93700	18670
Dairy	29840	24820	12030	42060
Other animal	0	0	17330	1250
Fruit	21670	8400	48510	11060
Arable	21270	37670	55680	73960
Ornamental/flowers	0	6500	108500	0
Vegetable	0	45000	27500	36670
Dairy support	15000	14560	83440	24470
Other	16000	3000	107000	11120
F test sign. probability	.315	.001	.046	.031

The F test data in tables 100 and 101 show some significant differences between farm types Off farm income, gross income per labour unit, working expenses similarly, depreciation and interest also, but not principal repayments.

Similar comments apply to Tables 102 to 111 for the groupings based on debt levels, equity, labour units, farmer education and age.

Table 102

Means for a range of per labour unit income and expense categories according to debt levels. Table 103 contains further categories.

Debt levels (million \$s)	Off farm income as % of total net farm income	Farm cash surplus incr. % (ave last 5 yrs)	Gross income Per labour unit (\$)	Rent/lease cost per labour Unit (\$)	Farm working expenses per labour unit (\$)
Zero	29.7	4.9	210230	6100	85190
>0 to \$0.25	33.7	4.4	167910	17820	92780
0.25 - \$0.5	19.2	6.8	264770	12010	125240
0.5 - \$0.75	17.5	3.8	295500	5660	143300
0.75 - \$1.0	41.9	1.2	252690	17200	441830
1.0 – \$2.0	13.3	4.9	383370	31620	174320
2.0 - \$3.0	12.8	6.2	336110	12930	199490
3.0 - \$5.0	36.4	9.9	420390	27910	236270
5.0 - \$8.0	22.9	0.5	434940	90130	229050
> \$8.0	11.3	4.0	430810	10460	274490
All levels mean	24.5	4.9	287410	16920	158490
F test sign. probability	.001	.135	.000	.004	.000

Table 103

Means for a range of per labour unit income and expense categories according to debt levels. Table 102 contains further categories.

Debt levels (million \$s)	Principal repayments per labour unit \$	Depreciation per labour unit \$	Off farm income per labour unit \$	Interest per labour unit \$
Income / expense category				
Zero	3550	10460	47280	3610
>0 to \$0.25	19470	11690	44760	7800
0.25 - \$0.5	25180	15710	23920	22040
0.5 - \$0.75	22730	20940	33790	27120
0.75 - \$1.0	11770	15090	127750	36290
1.0 - \$2.0	18550	17640	22550	50020
2.0 - \$3.0	28190	14630	5980	58440
3.0 - \$5.0	33700	19630	31020	69970
5.0 - \$8.0	45400	68990	3290	69700
>\$8.0	27650	20180	9600	69450
All levels mean	19150	17720	38820	36280
F test sign. probability	.001	.001	.046	.000

Table 104

Means for a range of per labour unit income and expense categories according to equity levels. Table 105 contains further categories.

Equity levels (%)	Off farm income as % of total net farm income	Farm cash surplus incr. % (ave last 5 yrs)	Gross income Per labour unit \$	Rent/lease cost per labour Unit \$	Farm working expenses per labour unit \$
Income /expense category					
100 %	28.2	5.0	212620	6100	85190
100 – 90 %	24.5	5.0	244240	14000	121060
90 – 80 %	22.8	5.4	352520	28790	175510
80 – 70 %	20.1	5.1	372950	13280	335140
70 – 60 %	25.8	6.9	336520	15340	189850
60- 50 %	15.7	0.9	374470	45450	189510
< 50 %	18.2	4.4	325630	19840	177730
All levels mean	24.0	4.9	288960	16700	158590
F test sign. probability	.521	.368	.001	.111	.000

Table 105

Means for a range of per labour unit income and expense categories according to equity levels. Table 104 contains further categories.

Equity levels (%) Income / expense category	Principal repayments per labour unit \$	Depreciation per labour unit \$	Off farm income per labour unit \$	Interest per labour unit \$
100 %	3550	10460	47280	1080
100 – 9- %	23120	15320	32050	16150
90 – 80 %	19650	15830	19170	30490
80 – 70 %	23880	22750	24750	51250
70 - 60 %	28660	15520	50090	62360
60 – 50	30050	41060	14770	67390
< 50 %	23940	28020	78570	71230
All levels mean	19150	17720	38960	35950
F test sign. probability	.002	.067	.474	.000

Table 106

Means for a range of per labour unit income and expense categories according to labour levels. Table 107 contains further categories.

Labour units (full time equivalents) Income / expense category	Off farm income as % of total net farm income	Farm cash surplus incr. % (ave last 5 yrs)	Gross income Per labour unit \$	Rent/lease cost per labour Unit \$	Farm working expenses per labour unit \$
<= one unit	33.7	5.0	241330	10690	111510
One to two units	19.2	4.1	273080	19500	155820
Two to three units	20.1	5.2	298350	19370	169570
Three to four units	27.2	8.3	344930	24700	195160
Four to five units	14.4	5.0	374690	32620	225320
Five to six units	24.6	6.6	348920	9720	247780
Six to nine units	8.0	-0.18	380580	9620	282530
> nine units	14.2	5.4	416780	8800	219620
All units mean	23.4	4.8	287410	16920	159150
F test sign. probability	.007	.219	.073	.887	.249

Table 107

Means for a range of per labour unit income and expense categories according to labour levels. Table 106 contains further categories.

Labour level (full time equivs) Income / expense category	Principal repayments per labour unit \$	Depreciation per labour unit \$	Off farm income per labour unit \$	Interest per labour unit \$
< = one unit	13960	14580	87300	35940
One to two units	18870	13780	19630	32440
Two to three units	10090	13880	9280	26990
Three to four units	30710	29030	8770	34080
Four to five units	27480	61170	21070	65040
Five to six units	40930	12840	22260	52270
Six to nine units	32600	19420	9520	59850
> nine units	21430	20240	22190	37890
All units mean	19270	17820	39040	36470
F test sign. probability	.124	.010	.000	.097

Table 108

Means for a range of per labour unit income and expense categories according to Farmer's age (years). Table 109 contains further categories.

Farmer's age (years) Income / expense category	Off farm income as % of total net farm income	Farm cash surplus incr. % (ave last 5 yrs)	Gross income Per labour unit \$	Rent/lease cost per labour Unit \$	Farm working expenses per labour unit \$
< = 35 years	20.0	20.0	362300	0	201600
36 – 45 years	7.4	4.2	405260	43950	351030
46 – 55 years	23.5	4.0	296290	20840	150460
56 – 65 years	21.9	6.1	303420	13780	154960
> 65 years	30.9	4.0	235150	10470	115620
All ages mean	24.5	4.9	287410	16920	158490
F test sign. probability	.015	.011	.014	.056	.000

Table 109

Means for a range of per labour unit income and expense categories according to the farmer's age (years). Table 108 contains further categories.

Farmer's age (years) Income / expense category	Principal repayments per labour unit \$	Depreciation per labour unit \$	Off farm income per labour unit \$	Interest per labour unit \$
< = 35 years	38000	11500	56670	19600
36 – 45 years	38190	30300	2490	51890
46 – 55 years	18380	14010	34650	43370
56 – 65 years	22910	15680	42320	32540
> 65 years	9740	19040	43510	29890
All ages mean	19150	17720	38820	36280
F test sign. probability	.002	.545	.633	.094

Table 110

Means for a range of per labour unit income and expense categories according to Farmer's highest formal education level. Table 111 contains further categories.

Education level (highest) Income / expense category	Off farm income as % of total net farm income	Farm cash surplus incr. % (ave last 5 yrs)	Gross income Per labour unit \$	Rent/lease cost per labour Unit \$	Farm working expenses per labour unit \$
Primary	43.6	5.7	214540	0	61270
Secondary up to three years	25.4	6.3	283340	10790	196530
Secondary four or more years	21.6	4.8	273190	10410	125470
Tertiary up to two years	21.3	2.2	266670	14660	161030
Tertiary three or more years	27.8	5.0	331610	31170	170210
All levels mean	24.4	4.9	288200	16920	158970
F test sign. probability	.321	.149	.445	.170	.345

Table 111

Means for a range of per labour unit income and expense categories according to the farmer's highest formal education level. Table 110 contains further categories.

Education level (highest) Income / expense category	Principal repayments per labour unit \$	Depreciation per labour unit \$	Off farm income per labour unit \$	Interest per labour unit \$
Primary	33330	6880	50000	930
Secondary up to three years	16330	15190	31160	37100
Secondary four or more years	15820	22850	24950	37040
Tertiary up to two years	23990	15690	51750	35610
Tertiary three or more years	22240	15530	54270	36430
All ages mean	19150	17720	38620	36280
F test sign. probability	.556	.776	.404	.776

The columns representing different levels of debt and equity all show significant differences for principal and interest payments as would be expected.

When relating the farmer's average grade in their last year of formal study to the various income and expense categories it was only for two variables that significant differences occurred. These were the annual 5 year average cash surplus increase % (F probability .003) and the interest paid per labour unit (F probability .022). All other F probability values were above .439.

21 Return on capital for the farms

Return on capital is clearly a figure which all farmers are vitally interested in and reflects a farmer's efficiency where the objective is profit orientated. Table 112 shows the wide range of figures being achieved. Of course, some farmers are content to have sufficient cash for living after paying all expenses and obtain satisfaction from being a farmer per se. Hopefully some of these farmers appear in the lower interest return categories rather than farmers striving for maximum return on capital but failing to achieve it. As for the type of farming to choose, deer and beef have made good returns in the past, as has vegetable production.

Table 112

Return on capital for a series of categories. The return was calculated from the H11 series of questions (see appendix). Only 94 respondents provided this income and expenditure information to the detail requested.

Return on capital ranges (%)	Percentage in each range (distribution)	Farm type	Mean % return on capital	Total farm capital (million \$s)	Mean % return on capital	Age of farmer (years)	Mean % return on capital	Highest education level	Mean % return on capital
< 0%	14.9	Int. sh'p	2.8	< 2	1.4	< 45 yrs	2.7	1 ^o	-
0 – 1	14.9	Ext. sh'p	1.9	2 – 4	2.0	46 – 55	2.1	2 ^o <4	2.7
1 – 2	22.3	Deer	4.5	4 – 6	3.4	56 – 65	3.3	2 ^o >3	3.4
2 – 3	13.9	Beef	4.2	6 – 8	4.8	> 65 yrs	1.8	3 ^o <3	1.5
3 – 4	10.6	Dairy	2.1	8 -10	1.9			3 ^o >2	2.2
4 – 5	9.6	Oth anim.	-	10-12	1.6				
5 – 6	5.3	Fruit	0.2	12-20	1.7				
6 – 7	3.2	Arable	0.7	> 20	2.1				
> 7%	5.3	Flower	-						
		Veges.	11.7						
Mean	2.48	Grazing	2.6						
		Other	-1.4						
F test prob.			.027		.165		.266		.178

22 Physical production levels reported by the farmers

Achieving high output efficiency is important to all objectives, and a particular requirement for farmers in greater debt than most. Tables 113 to 115 give productive efficiency figures for various groupings. In considering the distributions many statistics vary quite markedly as the soil and topography across the sample similarly vary markedly. Lambing percentage, for example, transverse from less than 100% to over 160%. While undesirable, some farmers will not be as efficient as their colleagues on similar soil and environment.

Table 113

Distribution of a number of physical production outputs. Percentage of farmers falling in each range (column percentages)

Lambing percentages survival to sale/transfer	Percentage of farms in each	Calving percentage survival to transfer	Percentage of farms in each group	Wool production per hectare (kgs)	Percentage of farms in each group	Wool production per ewe (kgs)	Percentage of farms in each group	Carcass meat per hectare (kgs)	Percentage of farms in each group
<= 100	14.3	< 80	6.0	<= 20	19.0	<=4.0	27.8	<=70	10.0
100-110	5.3	80-85	8.5	20-30	21.0	4.0-4.5	12.7	70-110	16.7
110-120	11.9	85-90	37.3	30-40	22.9	4.5-5.0	25.4	110-150	14.5
120-130	25.0	90-95	33.7	40-50	12.3	5.0-5.5	11.1	150-190	13.4
130-140	19.7	>95	14.5	50-60	10.5	5.5-6.0	13.5	190-230	10.0
140-150	16.1			60-70	6.7	> 6.0	9.5	230-270	5.8
150-160	4.7			>70	7.6			270-310	11.7
> 160 %	3.0							310-350	2.5
								350-390	1.6
								390-430	4.2
								430-470	2.5
								> 470	7.5
Means	127.7		88.4		38.6		4.9		268.9

Table 114

Distribution of Solids not Fat for dairy farms ... per hectare and per cow. Percentage of farmers falling in each range (column percentages)

Milk solids per hectare ranges (kgs)	Percentage of farms in each group	Milk solids per cow ranges (kgs)	Percentage of farms in each group
<=600	7.1	<=300	5.3
600-800	9.0	300-350	17.7
800-1000	22.3	350-400	18.6
1000-1200	34.8	400-450	45.1
1200-1400	12.5	450-500	8.0
1400-1600	8.0	>500	5.3
> 1600	4.5		
Means	1095		395

Table 115

Physical production levels ... kgs milk solids and stock units (Note... this table is based on data from question D7 (vi) (see appendix). The remaining tables on physical production are based on questions H4 to H10. It will be noted the average MS production is 809 kgs/ha, whereas question H9 provides a figure of 1095. The difference is likely as D7 (vi) was attached to a question requesting detailed debt information.)

Kgs MS/ha	% of farms		Kgs MS / labour unit	% of farms		SU per hectare	% of farms		SU per labour unit (100s)	% of farms
< 400 kgs	9.8		<30000	10.0		<3	19.4		<5	9.3
400 - 500	9.7		30 - 40000	12.5		3 - 5	8.4		5 - 10	7.4
500 - 600	14.6		40 - 50000	22.5		5 - 7	2.8		10 - 20	20.3
600 - 700	6.1		50 - 60000	13.8		7 - 9	13.9		20 - 30	26.0
700 - 800	11.0		60 - 70000	17.5		9 - 11	22.2		30 - 40	22.2
800 - 900	14.7		70 - 80000	6.2		11 - 13	19.5		40 - 50	9.2
900 - 1000	6.1		80 - 90000	6.3		13 - 15	2.7		50 - 60	1.9
1000 - 1100	10.9		90 - 100000	3.7		> 15	5.6		60 - 70	1.8
> 1100 kgs	17.1		> 100000	7.5					> 70	1.9
No of farms	82			80			36			54
Ave	809.3			58720			8.2			2590
Significance *	.178			.168			.205			.243

* One sample Kolmogorov-Smirnov test

While the productivity data is across all soil types and climates used by each farming type, in the case of dairy farming the variation will not be as great as for other farm types. Thus, the variations are quite wide. Despite this, the differences across the ranges are not significantly different in a traditional sense.

All this data is very useful for estimating income for a range of prices that might be expected in the future, and resultingly the likelihood of farmers with different debt levels and repayment schedules finding it impossible to meet their commitments.

23 Farmers' attitude to three management situations

In succeeding with decisions, including decisions on debt, it is important to act on time (not procrastinating) and to be able to make good budgeting decisions. These, and other factors, influence managerial ability. But what is important to debt

decisions is whether the farmers' actual view of her/his decision ability reflects reality.

The following tables cover the core of these ideas.

Table 116

Distribution of farmers' management attitudes. Percentage of farmers falling in each scale value (column percentages)

Score range on a 1 to 5 scale (1=true through to 5=not true)	I wait too long before deciding and acting...-% answering	My budget estimates often wrong ...% answering	I'm a better manager than neighbours ..% answering
One	3.9	2.6	8.1
Two	12.2	7.8	17.8
Three	26.0	20.1	40.7
Four	29.1	38.1	14.7
Five	28.8	31.3	18.6
Means	3.7	3.9	3.2
K-S prob.	.156	.200	.052

When comparing the means of these management attitude variables across various groupings, some of the differences were found to be non-significant. In particular, the means were not different across farm types and labour levels. You would expect this as managers' attitudes are likely to be the same across farm types and farm size (labour units). For other parameters some significant differences existed as shown in the following tables.

Table 117

Mean values on a 1 to 5 truth scale (1=true 5=not true) for statements reflecting farmers' management attitudes for Total Farm Capital groups

Total farm capital ranges (million \$s)	I wait too long before deciding and acting – mean score	My budget estimates often wrong – mean score	I'm a better manager than neighbours – mean score
< 2 million \$	3.3	3.7	3.4
2 – 4 million	3.8	3.9	3.2
4 - 6 million	3.7	3.9	3.3
6 – 8 million	3.5	3.8	3.1
8 – 10 million	3.2	4.0	3.1
10 – 12 million	3.9	4.0	2.8
12 – 20 million	4.0	4.1	3.2
> 20 million \$	4.0	4.0	3.0
F test sign prob	.009	.642	.347

Table 118

Mean values on a 1 to 5 truth scale (1=true 5=not true) for statements reflecting farmers' management attitudes for debt groups

Level of debt (million \$s)	I wait too long before deciding and acting – mean score	My budget estimates often wrong – mean score	I'm a better manager than neighbours – mean score
Zero debt	3.6	4.0	3.4
< .25 million \$	3.8	3.7	3.2
.25 - .5 million	3.6	3.8	3.0
.5 – .75 million	3.8	3.7	2.6
.75 - 1 million	3.7	3.7	3.6
1 – 2 million	3.8	3.9	2.9
2 - 3 million	3.5	3.9	3.1
3 – 5 million	3.4	3.6	2.8
5 - 8 million	3.7	4.0	3.6
> 8 million \$	3.9	3.9	2.8
F test sign prob	.743	.897	.005

Table 119

Mean values on a 1 to 5 truth scale (1=true 5=not true) for statements reflecting farmers' management attitudes for equity groups

Percentage equity ranges	I wait too long before deciding and acting – mean score	My budget estimates often wrong – mean score	I'm a better manager than neighbours – mean score
100 %	3.6	4.0	3.5
100 – 90 %	3.7	3.9	3.1
90 – 80 %	4.0	3.9	2.7
80 – 70 %	3.6	3.8	3.3
70 – 60 %	3.7	3.8	2.9
60 – 50 %	3.8	3.8	3.5
< 50 %	3.4	3.6	2.8
F test sign prob	.296	.482	.002

Table 120

Mean values on a 1 to 5 truth scale (1=true 5=not true) for statements reflecting farmers' management attitudes for a range of final year education grades.

Average grade received in a farmers' final year of formal education (%)	I wait too long before deciding and acting – mean score	My budget estimates often wrong – mean score	I'm a better manager than neighbours – mean score
< 40 %	3.4	3.5	3.6
40 – 50 %	3.5	3.6	3.2
50 – 60 %	3.6	3.8	3.3
60 – 70 %	3.7	4.1	3.0
70 – 80 %	3.8	3.9	2.9
> 80 %	3.8	4.2	3.1
F test sign prob	.726	.044	.124
Mean rating	3.6	3.9	3.2

Table 121

Mean values on a 1 to 5 truth scale (1=true 5=not true) for statements reflecting farmers' management attitudes relative to the farmer's age (years)

Farmer's age in years	I wait too long before deciding and acting – mean score	My budget estimates often wrong – mean score	I'm a better manager than neighbours – mean score
< 35 years	4.2	3.4	3.7
36 – 45 years	4.3	4.3	3.2
46 – 55 years	3.6	3.8	3.1
56 – 65 years	3.6	3.8	3.1
> 65 years	3.7	3.9	3.2
F test sign prob	.052	.202	.621

Table 122

Mean values on a 1 to 5 truth scale (1=true 5=not true) for statements reflecting farmers' management attitudes relative to the farmer's highest level of formal education

Highest level of formal education	I wait too long before deciding and acting – mean score	My budget estimates often wrong – mean score	I'm a better manager than neighbours – mean score
Primary	4.0	4.0	3.5
Secondary < 4 yrs	3.7	3.9	3.2
Secondary >= 4 yrs	3.7	3.8	3.0
Tertiary <= 2 yrs	3.6	3.8	3.2
Tertiary > 2 yrs	3.6	3.9	3.4
F test sign prob	.853	.880	.139

It will be noted that as the TFC increases the farmers' view of the level of procrastination declines. You would certainly hope this would be the case. It will also be seen the larger the farm debt, the higher is the farmer's self rated management skill. On the other hand, the less equity the farm has, the greater the farmer believes in her/his management skill. Perhaps these two really go together?

And it seems skill at passing exams does relate to planning success for the higher the grade the less budget errors are made, or that is what the respondents believe.

Finally, it will be noted the older the farmer is, the less decision and action procrastination occurs. Perhaps age confers confidence, though you would imagine this only occurs where past success has provided confidence.

24 Farmers' biographical details

To check whether the farmers' basic biographical details and family situation is associated with debt situations (e.g. perhaps older farmers are relatively conservative??), the survey collected basic information as shown in Tables 123 to 133. Various groupings are displayed covering the basic distribution of the parameters right through to groupings according to the children's' ages.

Table 123

Distribution of a number of farmers' biographical data. Percentage of farmers falling in each range (column percentages)

Age of farmer in year ranges	Percentage of farms in each group	Highest formal education level	Percentage of farms in each group	Ave grade scored in last year formal edn.	Percentage of farms in each group	No. of children expressing an interest in farming	Percentage of farms in each group	No. of children in the farmers family	Percentage of farms in each group
<= 35	1.8	1 ⁰	2.3	<40%	7.6	Zero	38.4	Zero	27.9
36 – 45	6.3	<4y 2 ⁰	29.6	40-50	9.7	One	36.2	One	14.6
46 – 55	21.3	>3y 2 ⁰	31.8	50-60	40.7	Two	15.7	Two	27.2
56 – 65	34.5	<3y 3 ⁰	15.3	60-70	23.1	Three	7.7	Three	19.3
> 65	36.3	>2y 3 ⁰	21.1	70-80	12.8	Four	1.9	Four	8.6
				>80	6.2			Five	1.0
								Six	1.0
								> Six	0.4
K-S prob	.581		.665		.133		.611		.271

Note that the K-S test is based on an equally distributed distribution. This means all these distributions are not even.

Also note that the gender balance of the farmer's answering was 8.1 % female giving the remaining 91.9% being male. It is also clear the average age of farmers is relatively high, education levels are rising as expected, the number of children

expressing an interest in farming is low, and two to three children in a family is common, but so is zero children though these farmers are probably younger.

Table 124

Means for a range of farmers' biographical variables according to farm type.

Farm type Biographical Variable	Farmer's age .. 1=< 25 yrs through 6 > 65 yrs*	Farmer's Education 1⁰ = 1 through 5 = 3+ yrs 3⁰ *	Farmer's ave grade last year formal education 1 =< 40%... 6 > 80% +	No. of farmers' children interested in farming	Number of children in farmers' family
All farms	5.0	3.2	3.4	1.0	1.8
Intensive sheep	4.8	3.2	3.2	0.9	1.8
Extensive sheep	5.1	3.1	3.4	1.3	1.8
Deer	5.3	3.7	2.9	1.0	1.6
Beef	5.3	3.0	3.5	0.9	1.2
Dairy	4.7	3.4	3.5	1.2	2.3
Other animal	5.2	3.0	3.0	1.0	1.5
Fruit	5.4	3.3	3.6	0.5	1.2
Arable	5.3	3.4	3.7	0.9	1.2
Ornamental/flowers	5.2	4.6	3.2	0.4	0.8
Vegetable	5.0	3.7	4.5	0.5	2.2
Dairy support	5.3	2.6	3.1	0.6	1.0
Other	5.4	3.9	4.1	0.1	0.7
F test sign. probability	.000	.000	.002	.020	.000

* See the questionnaire in the appendix for full scoring system

+ Grades: 1=<40%, 2=40-50%, 3=50-60%, 4=60-70%, 5=70-80%, 6=> 80%

Table 125 Means for a range of farmers' biographical variables according to total farm capital levels

Total farm capital (\$ millions) Biographical Variable	Farmer's age ... 1=< 25 yrs through 6 > 65 yrs*	Farmer's Education 1⁰ = 1 through 5 = 3+ yrs 3⁰ *	Farmer's ave grade last year formal education 1 =< 40%... 6 > 80% +	No. of farmers' children interested in farming	Number of children in farmers' family
<= 2 million \$s	5.3	3.4	3.4	0.5	1.2
2 – 4 million	5.1	3.0	3.3	0.7	1.6
4 – 6 million	4.8	3.3	3.5	0.9	1.7
6 – 8 million	4.7	2.8	3.0	1.2	2.0
8 – 10 million	4.7	3.7	3.6	1.2	2.1
10 – 12 million	4.5	3.2	3.5	1.3	2.0
12 – 20 million	4.6	3.3	3.2	1.6	2.7
> 20 million \$s	4.9	3.5	4.0	1.3	2.3
Mean all farms	4.9	3.3	3.4	1.0	1.8
F test sign. probability	.000	.013	.098	.000	.000

* See the questionnaire in the appendix for full scoring system

+ Grades: 1=<40%, 2=40-50%, 3=50-60%, 4=60-70%, 5=70-80%, 6=> 80%

There is an amazing quantity of significant differences across farm types and TFC. However, the differences are not great even if significant.

Table 126

Means for a range of farmers' biographical variables according to farms' equity levels

Equity percent Biographical Variable	Farmer's age ... 1=< 25 yrs through 6 > 65 yrs*	Farmer's Education 1⁰ = 1 through 5 = 3+ yrs 3⁰ *	Farmer's ave grade last year formal education 1 =< 40%... 6 > 80% +	No. of farmers' children interested in farming	Number of children in farmers' family
100 %	5.3	3.1	3.3	0.7	1.3
100 – 90 %	5.0	3.2	3.5	0.9	1.6
90 – 80 %	4.8	3.5	3.6	1.0	2.0
80 – 70 %	4.9	2.9	2.8	1.2	2.0
70 – 60 %	4.5	3.4	3.3	1.1	2.3
60 – 50 %	4.8	3.6	3.8	1.7	2.6
< 50 %	4.4	3.5	3.9	1.1	2.1
Mean all farms	4.9	3.3	3.4	1.0	1.8
F test sign. probability	.000	.079	.010	.000	.000

* See the questionnaire in the appendix for full scoring system

+ Grades: 1=<40%, 2=40-50%, 3=50-60%, 4=60-70%, 5=70-80%, 6=> 80%

Table 127

Means for a range of farmers' biographical variables according to farms' age groups

Age (years) Biographical Variable	Farmer's Education 1 ⁰ = 1 through 5 = 3+ yrs 3 ⁰ *	Farmer's ave grade last year formal education 1 =< 40%... 6 > 80% +	No. of farmers' children interested in farming	Number of children in farmers' family
< 35 years	3.4	3.0	1.2	1.4
36 – 45 years	3.6	3.8	1.4	2.4
46 – 55 years	3.5	3.7	0.9	2.7
56 – 65 years	3.2	3.3	1.1	2.3
> 65 years	3.0	3.3	0.9	0.7
Mean all farms	3.2	3.4	1.0	1.8
F test sign. probability	.000	.000	0.172	.000

* See the questionnaire in the appendix for full scoring system

+ Grades: 1=<40%, 2=40-50%, 3=50-60%, 4=60-70%, 5=70-80%, 6=> 80%

Equity and age groupings also give rise to real differences, though this is to be expected given the likely age correlations.

Table 128's data shows the impact of education level on grades and children numbers.

Table 128

Means for a range of farmers' biographical variables according to farmers' education level

Education level... highest level reached Biographical Variable	Farmer's age (years) 2 = < 35 yrs. through 6 = >65 yrs. *	Farmer's ave grade last year formal education 1 =< 40%... 6 > 80% +	No. of farmers' children interested in farming	Number of children in farmers' family
Primary	5.7	2.7	1.1	0.6
Secondary ... up to 3 years	5.1	2.9	1.1	1.5
Secondary ... 4 or more years	4.9	3.3	1.1	1.9
Tertiary ... up to 2 years	5.0	3.8	0.9	1.8
Tertiary ... 3 or more years	4.7	3.9	0.6	2.1
Mean all farms	5.0	3.4	1.0	1.8
F test sign. probability	.000	.000	.010	.010

* See the questionnaire in the appendix for full scoring system

+ grades: 1=<40%, 2=40-50%, 3=50-60%, 4=60-70%, 5=70-80%, 6=> 80%

Table 129

Distributions of the number of children farmers' have in each age grouping. Row percentages.

Children's age groups (years) Percentage of farmers with children	Percentage with one child	Percentage with two children	Percentage with three children	Percentage with four children	Percentage with greater than four children	Ave. no. of children
0 – 5 years	50.0	37.5	12.5	0	0	1.6
6 – 10 years	64.3	28.6	7.1	0	0	1.4
11 – 15 years	62.7	29.4	5.9	2.0	0	1.5
16 – 20 years	66.1	28.6	5.4	0	0	1.4
21 – 25 years	59.2	32.7	7.1	1.0	0	1.5
26 – 30 years	48.4	36.8	14.7	0	0	1.7
31 – 35 years	42.7	44.9	10.1	2.2	0	1.7
> than 35 years	18.0	36.7	25.2	14.4	5.7	2.5
K-S sign. probability	.179	.352	.129	.000	.000	.006

In addition, note that 8.6% of the farmers indicated they had no children at the time of answering.

Table 130

Mean number of children within each age grouping by farm type.

Farm type Childrens' age group range	0 – 5 yrs.	6 – 10 yrs.	11 – 15 yrs.	16 – 20 yrs.	21 – 25 yrs.	26 – 30 yrs.	31 – 35 yrs.	> 35 yrs.
Intensive sheep	1.6	1.4	1.7	1.4	1.4	1.6	1.9	2.8
Extensive sheep	1.5	1.0	1.4	1.5	1.2	1.8	1.7	2.6
Deer	-	1.0	2.0	1.0	1.0	1.7	1.0	2.0
Beef	-	1.5	2.0	1.8	1.2	1.7	1.7	2.6
Dairy	1.4	1.6	1.3	1.2	1.6	1.7	1.8	2.6
Other animal	-	-	-	-	4.0	2.0	-	3.5
Fruit	-	-	1.0	1.5	1.5	1.0	2.0	2.4
Arable	-	-	-	-	1.0	1.0	1.6	1.3
Ornamental/flowers	-	-	-	2.0	2.0	-	-	2.0
Vegetable	-	-	2.0	3.0	-	-	1.3	1.0
Dairy support (grazing)	3.0	-	-	-	1.3	1.8	1.0	3.0
Other	2.0	-	-	-	-	-	2.0	3.0
F test significance prob.	.370	.583	.379	.047	.004	.725	.658	.068

Table 131

Mean number of children within each age grouping by farmer age group

Farmer's age group (years) Childrens' age group range	0 – 5 yrs.	6 – 10 yrs.	11 – 15 yrs.	16 – 20 yrs.	21 – 25 yrs.	26 – 30 yrs.	31 – 35 yrs.	> 35 yrs.
>= 35 years	1.33	2.0	-	-	-	1.0	1.0	1.0
36 – 45 years	1.7	1.4	1.4	1.7	1.7	2.0	-	2.0
46 – 55 years	1.7	1.4	1.5	1.4	1.7	1.6	1.2	1.7
56 – 65 years	-	-	1.5	1.1	1.4	1.6	1.8	1.9
> 65 years	-	-	1.0	1.5	1.5	1.8	1.6	2.7
F test significance prob.	.751	.671	.847	.419	.194	.778	.163	.017

Table 132

Mean number of children within each age grouping by farmer highest level of formal education groups

Farmer's highest level of formal education Childrens' age group range	0 – 5 yrs.	6 – 10 yrs.	11 – 15 yrs.	16 – 20 yrs.	21 – 25 yrs.	26 – 30 yrs.	31 – 35 yrs.	> 35 yrs.
Primary	-	1.0	-	-	-	1.0	1.5	2.7
Secondary up to 3 years	1.3	1.2	1.1	1.2	1.6	1.7	1.6	2.6
Secondary 4 or more years	1.5	1.4	1.4	1.3	1.5	1.7	1.8	2.3
Tertiary up to 2 years	2.0	1.8	1.7	1.3	1.5	1.8	1.7	2.5
Tertiary 3 or more years	1.5	1.4	1.7	1.7	1.4	1.6	1.8	2.7
F test significance prob.	.598	.657	.206	.073	.749	.833	.818	.752

Table 133

Mean number of children within each age grouping by farmers' average grading in the farmer's last year of formal education.

Farmer's final year grade grouping (%) Childrens' age group range	0 – 5 yrs.	6 – 10 yrs.	11 – 15 yrs.	16 – 20 yrs.	21 – 25 yrs.	26 – 30 yrs.	31 – 35 yrs.	> 35 yrs.
< 40 %	-	1.0	1.0	1.5	1.5	1.9	1.7	2.7
40 – 50 %	1.0	-	1.0	1.0	1.7	1.5	1.7	2.9
50 – 60 %	2.2	1.4	1.4	1.5	1.5	1.9	1.9	2.4
60 – 70 %	1.4	1.2	1.5	1.7	1.3	1.4	1.7	2.6
70 – 80 %	-	1.2	2.0	1.0	1.8	2.0	1.6	3.0
< 80 %	3.0	-	1.0	1.2	1.4	1.4	1.8	2.6
F test significance prob.	.032	.674	.261	.373	.496	.236	.950	.693

Generally speaking educational grade does not seem to influence the size of families except in the 1-5 age category. The parents will tend to be younger for these children. The farmers' highest level of education similarly does not really influence children numbers by age. Similar comments apply to groupings according to the farmers' age and farm type.

All this information on children was collected as family size might well influence debt decisions.

25 Concluding comments

All this information provides a wonderful resource for carrying out 'in depth' studies of the human factors and their influence on debt levels and problems. The study set out to collect all this information, as reported, to provide the data to develop explanatory models of debt situations. For example, the data will allow assessing anxiety and the human factors causing different degrees of stress.

The study's main hypothesis was 'returns from using debt are dependent on the nature and ability of the farm manager/owner'. From this stems many questions such as what are the farmers' risks and vulnerability situations?. Is the farmers' financial knowledge important? Is a farmers budgeting and forecasting attributes important to debt levels and overreaching capabilities? And many more questions for analysis will emerge as the data is analysed further.

While a lot of information is known about total debt and servicing costs, and average debt levels, little is known about the situation on individual farms and the human side of the use, benefits, abuse, and stress caused by farm debt. The information reported in this report clearly provides a basis for making better assessments of the farmers' situation relative to debt levels.

The comparison with population statistics shows the sample is representative of national farm types and farm sizes. However, it is not possible to make similar conclusions over the many personal and debt information items collected as national figures do not exist for comparative purposes. Until proven otherwise, it is assumed the data presented provides extensive new information which is probably representative.

While it is necessary to study the tables to discover all the details of the information gleaned, the following indicators are noteworthy....

The responding farmers had high experience with over 30 years farming in general.

No matter what the ownership situation, the managing farmer made most of the decisions.

The main ownership systems involved trusts and partnerships.

Average equity was close to 80% but a significant number had less than 70% equity.

Total farm capital averaged out at around \$9 million.

The average debt was around \$2.2 million, but some had zero debt, and others very high levels.

At purchase, the average debt was 59.2% of TFC.

Some 71% of loans were interest only, and 26% of farms had some kind of family loan.

Debt repayment largely depended on the year in that 50% noted they pay principal 'when able'.

Potential capital gains hovered around 0% when converted to real terms. This is based on purchase prices and current valuations as the farmers had yet to sell.

Return on capital was around 3%.

However, farmers believed obtaining and utilising debt had been a good decision with positive outcomes. In that it enabled purchase and development, existing farmers would tend to respond positively.

Farmers' goals and aims cover many aspects of farming including both monetary and non monetary aspects.

If faced with payment difficulties, the majority would solve the problem by borrowing more and/or refinance (in contrast, for example, to selling off some land).

In general the responding farmers believe they have good forecasting abilities and managerial skill.

Approximately a fifth of the farmers indicated they experienced significant and frequent anxiety.

The farmers indicated they had a wide range of beliefs over how much control they believed they had over outcomes (Locus of Control).

Off farm income was a high 25% of total income on average (a form of diversification).

Around 20% of the farmers suggested they tended to procrastinate when deciding and acting.

And the average family size was 1.8 children, but the number of children believed to be interested in becoming farmers was less than this.

Much more information is contained in the report and tables as debt and farmer attitudes cover many aspects of primary production. As noted, detailed and full analyses of all the information is yet to be carried out. As this occurs, research articles will be published.

NATIONAL SURVEY ON FARM DEBT AND RELATED MANAGEMENT ISSUES

Please complete and return this questionnaire using the enclosed postage paid envelope. All information provided will be kept in the **strictest confidence** to the researchers involved. If you are not the main owner of the property please pass this questionnaire on to that person.

Many of the 'questions' are statements with five boxes beside them - tick only the ONE that best records the degree of truth in the statement. For example, if 'TRUE ☐ ☐ ☐ ☐ NOT TRUE' is offered, tick the middle box if the statement is half true, or one of the other boxes if it is 'truer', or closer to 'not true'. Other questions require you to enter a number, or Y/N (YES/NO) in a box, or simply tick an option. For horticultural units, read 'property' in place of 'farm'.

A. FARM DATA

1. Please tick ONE box representing the MAJOR enterprise type on the properties you operate.

intensive sheep	☐	extensive sheep	☐	deer	☐	beef cattle	☐
dairying	☐	other animal	☐	fruit	☐	cash crop	☐
ornamental/flowers	☐	vegetable	☐	dairy support	☐	other	☐

2. Including any manager &/or share milker/s, please give the number of equivalent full time adult people it takes to run the farm/s (use fractions if necessary, e.g., 1 ³/₄)

Equiv. full time units

3. What is the total amount of land owned in your operation? Hectares
4. What is the total amount of land leased or rented? Hectares

5. For how many years have you been farming (either managing/share milking/ownership) Yrs.
6. For how many years have you owned at least some of the farm assets? Yrs
7. If dairying, are you a share milker? (Y/N)

B. FARM OWNERSHIP

1. What proportion of ALL farm decisions are you involved in? %
2. How many separate farms do you have an ownership interest in? Number
3. What percentage of the farm assets effectively belong to you? %

4. Indicate the proportion (%) of the FARM ASSETS operated through the following options

- | | | |
|---|----------------------|---|
| (i) Sole Trader | <input type="text"/> | % |
| (ii) Partnership with spouse/family | <input type="text"/> | % |
| (iii) Held by a trust/s | <input type="text"/> | % |
| (iv) Equity partnership | <input type="text"/> | % |
| (v) Held by the shares in a private company | <input type="text"/> | % |
| (vi) Held by the shares in a public company | <input type="text"/> | % |
| (vii) Other (please specify.....) | <input type="text"/> | % |

Total of all should be 100%

5. Please give your best estimate of the current market value of (total for ALL farms if more than one):

- | | | |
|---|----|----------------------|
| (i) land and buildings | \$ | <input type="text"/> |
| (ii) livestock | \$ | <input type="text"/> |
| (iii) machinery and plant | \$ | <input type="text"/> |
| (iv) working capital (bank and similar...). Enter '-' if negative | \$ | <input type="text"/> |
| (v) Co-operative shares (e.g. Fonterra) | \$ | <input type="text"/> |
| (vi) other assets, if any (shares, flats,) | \$ | <input type="text"/> |

C. MANAGERIAL STYLE

For **each** statement ***tick ONE box that best records your degree of belief in the statement.***

1. You tend to mull over decisions before acting. TRUE ☐ ☐ ☐ ☐ ☐ NOT TRUE
2. You find it easy to ring up strangers to find out technical information. TRUE ☐ ☐ ☐ ☐
☐ NOT TRUE
3. For most things you seek the views of many people before making changes to your operations. TRUE ☐ ☐ ☐ ☐
☐ NOT TRUE
4. You usually find discussing everything with members of your family and/or colleagues very helpful. TRUE ☐ ☐ ☐ ☐
☐ NOT TRUE
5. Where there are too many jobs for the time available you sometimes become quite anxious. TRUE ☐ ☐ ☐ ☐ ☐
NOT TRUE
6. You tend to tolerate mistakes and accidents that occur with employees and/or contractors. TRUE ☐ ☐ ☐ ☐ ☐ NOT TRUE
7. You share your successes and failures with neighbours. TRUE ☐ ☐ ☐ ☐ ☐ NOT TRUE
8. Keeping records on just about everything is very important. TRUE ☐
☐ ☐ ☐ ☐ NOT TRUE
9. You admire farming/grower colleagues who are financially logical and don't let emotions colour their decisions. TRUE ☐
☐ ☐ ☐ ☐ NOT TRUE

10. You sometimes don't sleep at night worrying about decisions made.
TRUE ☐ ☐ ☐ ☐ ☐ NOT TRUE
11. You find investigating new farming/growing methods exhilarating and challenging.
☐ NOT TRUE TRUE ☐ ☐ ☐ ☐
12. You tend to write down options and calculate monetary consequences before deciding.
☐ NOT TRUE TRUE ☐ ☐ ☐ ☐
13. You tend to worry about what others think of your methods.
☐ NOT TRUE TRUE ☐ ☐ ☐ ☐
14. You are happy to make do with what materials you have to hand.
☐ NOT TRUE TRUE ☐ ☐ ☐ ☐
15. You find talking to others about farming/growing ideas stimulates and excites you as well as increasing your enthusiasm for new ideas.
☐ NOT TRUE TRUE ☐ ☐ ☐ ☐
16. Having to make changes to well established management systems and rules is a real pain.
☐ NOT TRUE TRUE ☐ ☐ ☐ ☐
17. You normally don't rest until the job is fully completed.
☐ NOT TRUE TRUE ☐ ☐ ☐ ☐
18. You normally enjoy being involved in farmer/grower organisations.
NOT TRUE TRUE ☐ ☐ ☐ ☐ ☐

19. You sometimes believe you are too much of a stickler for checking and double-checking that everything has been carried out satisfactorily. TRUE ☐ ☐ ☐ ☐ ☐ NOT TRUE
20. When the pressure is on you sometimes become cross and short with others. TRUE ☐ ☐ ☐ ☐ ☐ NOT TRUE
21. You generally choose conclusions from experience rather than from hunches when they are in conflict. TRUE ☐ ☐ ☐ ☐ ☐ NOT TRUE
22. You are inclined to let employees/contractors do it their way. TRUE ☐ ☐ ☐ ☐ ☐ NOT TRUE
23. You not only speak your mind and ask questions at farmer/grower meetings, but also enjoy the involvement. TRUE ☐ ☐ ☐ ☐ ☐ NOT TRUE
24. It is very important to stick to management principles no matter what the pressure to do otherwise. TRUE ☐ ☐ ☐ ☐ ☐ NOT TRUE
25. You are much happier if everything is planned well ahead of time. TRUE ☐ ☐ ☐ ☐ ☐ NOT TRUE

D. FARM DEBT

1. When you purchased your first farm, what was the percentage of debt to the total value of assets? %

2. What percentage (%) of your **present** debt comes from (total should add to 100%)

- | | | | | | |
|---------------------------------------|---|----------------------|---------------------------------|---|----------------------|
| (i) Bank Fixed interest mortgages | % | <input type="text"/> | (v) Family fixed int. loans | % | <input type="text"/> |
| (ii) Bank Floating interest mortgages | % | <input type="text"/> | (vi) Family floating int. loans | % | <input type="text"/> |
| (iii) Bank overdraft | % | <input type="text"/> | (vii) Other ... please specify | % | <input type="text"/> |
| (iv) Supplier credit | % | <input type="text"/> | ----- | | |

3. For your various loans, if any, enter a number (as below) to indicate their MAIN use. Use a '1' for land and buildings purchase, '2' for stock purchase, '3' for farm development purposes, and '4' for running expenses, '5' for family expenses.

- | | | | |
|---------------------------------|----------------------|-----------------------------------|----------------------|
| (i) largest mortgage | <input type="text"/> | (ii) second largest mortgage | <input type="text"/> |
| (iii) third largest mortgage | <input type="text"/> | (iv) fourth largest mortgage | <input type="text"/> |
| (v) largest family loan | <input type="text"/> | (vi) second largest family loan | <input type="text"/> |
| (vii) bank overdraft (main use) | <input type="text"/> | (viii) bank overdraft (other use) | <input type="text"/> |
| (ix) other specify..... | <input type="text"/> | (x) other specify..... | <input type="text"/> |

4. What proportion of your loans are interest only (%)

5. Do you pay any interest on family loans (Y/N)?

6. Are you obliged to pay back principal on family loans (Y/N)?

7. Please indicate your present debt for

- | | | | | | |
|--|----|----------------------|------------------------|----|----------------------|
| (i) all long term mortgages | \$ | <input type="text"/> | (iv) Family loans | \$ | <input type="text"/> |
| (ii) bank overdraft | \$ | <input type="text"/> | (iv) Any non farm debt | \$ | <input type="text"/> |
| (iii) supplier/HP credit | \$ | <input type="text"/> | | | |
| (vi) If a dairy farmer what is the average kilogram MS associated with this debt | | | | | <input type="text"/> |
| if sheep farmer how many stock units do you have? (use N/A if neither) | | | | | <input type="text"/> |

8. If paying off principal, indicate which method used? Please answer Yes (Y) or No (N).

- | | | | |
|---|----------------------|----------------------------------|----------------------|
| (i) monthly as part of a table mortgage or similar whenable | <input type="text"/> | (ii) in lump sums | <input type="text"/> |
| (iii) never | <input type="text"/> | (iv) only as part of refinancing | <input type="text"/> |

9. On a scale of 1 to 5, indicate the greatest degree of restriction your debt level has imposed on your farming plans (1 = minor restriction ...5=major restriction)

10. Have you ever been refused a loan for land purchase? (Y/N) stock ? (Y/N)
 plant and machinery? (Y/N) farm development? (Y/N) other?(Y/N)

11. Of ALL debt, what proportion (%) was used for land and buildings? stock
 plant and machinery? development? running expenses? other?

12. If ever, how often have you had to default on a loan payment? times.

13. Please enter the date of your first major investment in farming (farm/herd purchase), and the values for assets, debt, and equity, also these values in 2010 and 2015 for your total farming interests. Please estimate the figures if you don't

	year	Asset value	Debt	Equity
First farm/herd purchase		\$	\$	\$
Total farming interests	2010	\$	\$	\$
Total farming interests	2015	\$	\$	\$

14. On **average** over the last **five** years, what percentage of **gross income** is taken up by

(i) interest on all debt % (ii) debt (principal) repayments %

15. If you seek help for your financing and debt affairs from the following people please indicate for an average year:

	Ave. Hours/annum spent	Degree of reliance on advice offered on 1 to 5 scale
Farm consultant	Hrs.	(1=total reliance
Accountant	Hrs.	through to
Lawyer	Hrs.	5=no reliance at all)
Banker	Hrs.	
Family/friends	Hrs.	

16. Over your farming career, what is the **lowest** equity % you have ever experienced? %

16. Using a scale of 1=very good, through to 5= not at all good, how would you RATE your SUCCESS/BENEFITS from borrowing funds in achieving

(i) capital gains (ii) good profits (iii) non monetary goals
 (iv) NET gains in family net worth (v) other

E GOALS AND AIMS

For **each** statement **Tick ONE** box that best records your degree of belief in each statement.

- | | |
|---|--|
| 1. It is very important to pass on the property to family members. | TRUE ☐ |
| ☐ ☐ ☐ ☐ NOT TRUE | |
| 2. It is important to earn the respect of farmers/growers in the local community. | TRUE ☐ |
| ☐ ☐ ☐ ☐ NOT TRUE | |
| 3. Making a comfortable living is important. | TRUE ☐ |
| ☐ ☐ ☐ ☐ NOT TRUE | |
| 4. It is very necessary to keep debt as low as possible. | |
| TRUE ☐ ☐ ☐ ☐ NOT TRUE | |
| 5. It is essential to plan for reasonable holidays and plenty of leisure time. | |
| TRUE ☐ ☐ ☐ ☐ NOT TRUE | |
| 6. Attending field days and farmer/growers meetings is vital. | TRUE ☐ ☐ |
| ☐ ☐ ☐ NOT TRUE | |
| 7. It is very important to reduce risk using techniques like diversification farming conservatively, keeping cash reserves | TRUE ☐ |
| ☐ ☐ ☐ ☐ NOT TRUE | |
| 8. Developing facilities and systems that give good working conditions is crucial. | |
| TRUE ☐ ☐ ☐ ☐ NOT TRUE | |
| 9. It is very important to ensure employees enjoy their jobs. | TRUE ☐ |
| ☐ ☐ ☐ ☐ NOT TRUE | |
| 10. Doing jobs that I enjoy is a very important part of the operation. | TRUE ☐ |
| ☐ ☐ ☐ ☐ NOT TRUE | |
| 11. Minimising pollution is very important. | TRUE ☐ |
| ☐ ☐ ☐ ☐ NOT TRUE | |
| 12. I enjoy experimenting with new products and production systems. | TRUE ☐ |
| ☐ ☐ ☐ ☐ NOT TRUE | |
| 13. Proper retirement planning is a major consideration | TRUE ☐ |
| ☐ ☐ ☐ ☐ NOT TRUE | |
| 14. You must always be striving to increase the total value of assets. | TRUE ☐ |
| ☐ ☐ ☐ ☐ NOT TRUE | |
| 15. Constantly expanding the size of the business is absolutely necessary. | TRUE ☐ |
| ☐ ☐ ☐ ☐ NOT TRUE | |

16. Aiming for maximum sustainable net cash returns is very important. TRUE ☐ ☐
☐ ☐ ☐ NOT TRUE

17. Maintaining a presence in local community activities is important. TRUE ☐
☐ ☐ ☐ ☐ NOT TRUE

18. It is very important to improve the condition of the property (fertility, facilities).
TRUE ☐ ☐ ☐
☐ ☐ NOT TRUE

19. Giving assets to the children so they can pay for education and/or set up businesses is very important. TRUE ☐
☐ ☐ ☐ ☐ NOT TRUE

20. While I don't particularly enjoy farming, I carry on as I don't have a background that allows shifting into another occupation. TRUE ☐
☐ ☐ ☐ ☐ NOT TRUE

F. ANXIETY AND FORECASTING

1. On a scale of 1 (little) to 10 (great) please indicate the anxiety level caused by each of:

crop and/or animal yields		product prices		financing/debt	
mismanagement		family issues		employees	
rules & regulations		environmental regulations		health	
work conditions		extreme weather		isolation	
time pressures		other (specify).....			

2. If you COULD NOT/HAVE NOT pay/ied your bills, using a scale of 1 (never) to 5 (definitely),

would you?: sell some assets seek to increase loans seek family help
re-finance sell and reinvest what's left
other (specify).....

3. If you have a spouse/partner, rate on a scale of 1(never) to 5 (frequently) whether the spouse/partner

(i) gets concerned over the farm debt level
(ii) significantly influences the level of farm debt

4. Rate on a scale of 1 (very) to 5 (not at all) how accurate your forecasts tend to be when forecasting (i) prices (ii) crop/animal yields
(iii) weather conditions (iv) costs

5. Rate on a scale of 1 (excellent) to 5 (very poor) your knowledge of all matters 'financial and debt'

6. Rate on a scale of 1 (excellent) to 5 (poor) your ability to accurately work out the financial outcomes of any proposal you might have that involves debt
7. Overall, rate on a scale of 1 (often) to 5 (seldom) the frequency you have experienced quite significant anxiety from farming **DEBT** issues
8. Overall, rate on a scale of 1 (often) to 5 (seldom) the frequency you have experienced quite significant anxiety from **GENERAL** farming issues

G. VIEWS ON MANAGERIAL APPROACHES

For each of the following statements indicate how true it is with a tick in the relevant box.

1. So far I have managed to largely achieve my goals. TRUE ☐ ☐ ☐ ☐
☐ NOT TRUE
2. I never try anything that might not work. TRUE ☐ ☐ ☐ ☐
☐ NOT TRUE
3. I'm using exactly the same production methods that I have used for many years because they have stood the test of time. TRUE ☐ ☐ ☐ ☐
☐ NOT TRUE
4. It's no use being stubborn about a job or management approach that doesn't initially work. TRUE ☐ ☐ ☐ ☐ ☐ NOT TRUE
 TRUE
5. I reckon 'good luck' doesn't exist - 'luck' is really good management, and 'bad luck' poor management. TRUE ☐ ☐ ☐ ☐
☐ NOT TRUE
6. It is safer not to rely on others to get the job done well and on time. TRUE ☐ ☐
☐ ☐ ☐ NOT TRUE
7. I'm able to get others to do the jobs my way. TRUE ☐ ☐ ☐ ☐
☐ NOT TRUE
8. Too often I end up having to run my property to suit others' demands. TRUE ☐ ☐
☐ ☐ ☐ NOT TRUE
9. While being a good manager involves some training, experience and reading, management skill is mainly determined by your genes. TRUE ☐ ☐ ☐ ☐
☐ NOT TRUE
10. You can work hard at creating good relationships between neighbouring managers, but often your efforts fall on deaf ears as people are commonly uncooperative and self-interested. TRUE ☐ ☐ ☐ ☐
☐ NOT TRUE

11. I find most employees work hard and finish the tasks set very adequately after a bit of training where necessary. TRUE ☐ ☐ ☐ ☐
☐ NOT TRUE

12. The years when the property has shown poor production and/or profit have been due to circumstances totally out of my control. TRUE ☐ ☐ ☐ ☐
☐ NOT TRUE

13. In local body affairs it's easy for a hardworking and dedicated individual to have an impact in getting changes for the better. TRUE ☐ ☐ ☐ ☐
☐ NOT TRUE

14. Often I get frustrated as circumstances beyond my control impede the smooth progress of my management plans and decisions. TRUE ☐ ☐ ☐ ☐
☐ NOT TRUE

15. Some people seem to be just lucky and everything works out for them but it hasn't happened to me much. TRUE ☐ ☐ ☐ ☐
☐ NOT TRUE

16. I tend to carefully plan ahead to ensure my goals are achieved, and often do budgets and commit my ideas to paper. TRUE ☐ ☐ ☐ ☐
☐ NOT TRUE

17. I seldom change my management and production systems unless I'm doubly sure the change will be positive. So much depends on chance. TRUE ☐ ☐
☐ ☐ ☐ NOT TRUE

18. When things go wrong it is so often due to events beyond my control - the weather ruins the hay, the wool auction I choose has a sudden price dip, TRUE ☐ ☐ ☐ ☐
☐ NOT TRUE

19. When I know I'm right I can be very determined and can make things happen. TRUE ☐ ☐ ☐ ☐
☐ NOT TRUE

H. INCOME AND PRODUCTIVITY

1. Your farm based income is BEST described as coming from (tick ONE box)

(i) a formal fixed salary	☐	(iii) formal salary AND farm profits	☐
(ii) the profits from the farm	☐	(iv) share milker's agreed % (someownership)	☐
(v) Other. Give details.....			☐

2. What % of your total net income, from all sources, comes from off farm (on average) %

3. For the last FIVE years, what is your estimate of the % your **average annual cash surplus**, after tax and mortgage payments, has been increasing/decreasing?

(delete one of INCREASE/DECREASE) %

With respect to the **production on your farm/s**, where applicable and known:

4. What is your average lambing % survival to sale &/or into replacement flock?%
5. What is your average calving % survival to sale &/or into replacement herd? %
6. What is your estimate of your average wool production per hectare (greasy)?kgs
7. What is your average wool production per ewe (greasy)? kgs
8. What is your estimate of your average carcass meat production per hectare?kgs
9. What is your average 'milk solids' production per hectare? kgs
10. What is your average 'milk solids' production per cow? kgs

11. If you have the relevant information, please give to the nearest \$5000 the total annual amounts for the following yearly income and expenses on your farm/s for a typical year. Estimate if necessary.

Gross income total sales	\$	Lease/rent	\$
Cash farm working expenses	\$	Loan principal	\$
Depreciation	\$	Off farm income	\$
Interest	\$		

I. BIOGRAPHICAL

1. Rate the following statements by ticking a box representing the degree of truth

(i) 'I tend to wait too long before deciding and acting'. TRUE ☐ ☐
☐ ☐ ☐ NOT TRUE

(ii) 'So very often I find my budget estimates tend to be significantly wrong'. TRUE ☐ ☐
☐ ☐ ☐ NOT TRUE

(iii) 'I regard myself a better manager than most of my neighbours' TRUE ☐ ☐
☐ ☐ ☐ NOT TRUE

2. Which age group do you fall into? (tick ONE box)

less than 25 years ☐ 26 - 35 years ☐ 36 - 45 years ☐
 46 - 55 years ☐ 56 - 65 years ☐ greater than 45 years ☐

3. What was the level at which you stopped your formal education? (Tick ONE box)

Primary school	☐	Secondary school - up to 3 years	☐
Secondary school – 4 or more years	☐	Tertiary education up to 2 years	☐
Tertiary education – 3 or more years	☐		

4. For your LAST year of formal study, what was your average grade (as you recall)? %

5. Please indicate your gender by putting **F**(emale) or **M**(ale) in the box.

6. Of your children, how many have expressed a serious interest in becoming a farmer? Use '0' to indicate none.

7. Indicate how many children you have in each age group. No children (tick)

0 – 5 years 6 – 10 years 11 – 15 years 16 – 20 years

21 – 25 years 26 - 30 years 31 - 35 years greater than 35 years

**THANK YOU VERY MUCH FOR TAKING THE TIME AND THOUGHT
TO COMPLETE THIS QUESTIONNAIRE.**

The results will be used to develop the country's understanding of farm debt issues. They will also be published in the popular and farming press for your general information.

Please return the completed questionnaire using the enclosed envelope. A stamp is **NOT** required

It is assumed that if you respond you are happy for your data to be included in the analysis -- on a confidential basis of course. AND don't forget a local Rural Support

Trust is available for any farmers seeking help on any concerns (www.rural-support.org.nz). Your GP can also provide support and contacts. If you wish to withdraw your data at any time contact us, preferably before analysis starts towards the end of the year.