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Agricultural Economics Unit

Lafrowda House,
St German's Road,
Exeter, EX4 6TL.

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D A I R Y F A R M I N C O M E S

A Study of 46 farms in South West England

1979-80 to 1983-84

B R Nixon and K I Robbins

University of Exeter
Agricultural Economics Unit

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F O R E W O R D

The Agricultural Economics Unit conducts, on a continuing basis, a detailed survey of farming production and incomes in the South West, collecting full accounts covering the physical and financial performance of some 320 farms annually. When time and resources allow in a busy work schedule it is valuable to stand back and study the results of a sequence of years to determine what indications and trends they portray.

Such a review is particularly important at present for the dairying sector, which is still in the throes of adjusting to the imposition of production quotas. The full effects of these are not yet clear, and there remains considerable uncertainty in the minds of many farmers and commentators even after twelve months' experience of the new regime. The initial reaction of many diary farmers has been to sell off dairy cows and reduce the use of concentrate feeds so as to avoid producing in excess of quota and having to pay the consequent levy. In this respect, farmers were assisted by the poor climatic conditions in 1984 which restricted the availability of grass for grazing and conservation. The longer term adjustments to production controls - which are now threatened for other products - will vary greatly across farms depending on their size, structure, technical performance, production alternatives and capital position. But as this report makes quite clear, particular farmers will face unavoidable financial pressures to cease milk production entirely and for them the prospects are not pleasing.

This study of the incomes of dairy farms over the five year period to March 1984 will provide a benchmark for subsequent surveys of the economic position of milk producers in the post-quota period. Although 46 farms is not a large number from which to observe trends applicable on a wider scale, the sample does comprise identical farms on which there have been no major changes in scale or of managerial input. For these reasons, the results should fairly reveal how things have developed on 'typical' farms over an extended period and so should be of substantial interest in a period of major change. The comparison of groups of farms with 'high' and 'low' interest charges is particularly relevant, focussing as it does on one factor which is increasingly critical nowadays to the

financial viability of the firm. It is hoped that readers will find these and other results, and the commentary given by the authors, to be of value in understanding the pressures and adjustments to which milk producers are currently subject.

The Unit is grateful to the many farmers throughout the region who made available the detailed information on which this report is based. The authors would like to thank their colleagues who assisted with the collection and analysis of the data, especially Peter Brown for his contribution on the milk quota monitoring and Kelsey Thomas for editorial advice.

University of Exeter
Agricultural Economics Unit

J P McInerney
May 1985

C O N T E N T S

DAIRY FARM INCOMES

Summary

1 The study analyses the results of an identical sample of 46 Specialist Dairy farms in South West England from 1979/80 to 1983/84.

2 Climatic conditions were not conducive to grass production in 1979 and 1981 and were particularly unfavourable in 1983.

3 During the period milk and concentrate prices rose less than the retail price index but labour and energy costs increased faster than the general rate of price inflation. Interest rates fell during the period but remained above the inflation rate. The favourable milk price : concentrate price ratio in the late '70's and early '80's, coupled with the available EEC grants and external finance with good asset-backing gave farmers the confidence to expand production.

4 On the sample farms, dairy cow numbers increased by 13 per cent and milk physical production by 15 per cent. Milk yield per cow and stocking rate improved only slightly over the period. The area of grass cut for silage continued to expand at the expense of hay. Farm output increased by 47 per cent. The value of milk output rose by 51 per cent, of which almost two thirds was due to price rises and the remainder due mainly to increased cow numbers.

5 The increases in variable costs were less than those in output except in 1983/84, when poor fodder and grazing conditions increased concentrate costs substantially. The milk price : concentrate price ratio improved until 1982 but declined by 1984 to almost the 1979 level. Fixed inputs are not normally affected by weather conditions but inflation and the additional cost of looking after extra cows increased fixed costs by 72 per cent over the 5 years i.e. by 17 per cent ahead of general inflation.

6 Net Farm Income and Management and Investment Income rose steadily up to 1982/83 but decreased drastically in 1983/84. At 1979/80 prices, Net Farm Income in that year fell to half its previous level. Farm Profits showed a similar trend to Net Farm Income, Interest charges increased by 59% although the reduction in bank base rate over the period helped to mitigate even higher charges which would have resulted from the additional loans. The 1983/84 Profit after interest averaged some £10,000 for the 46 farms.

7 The Return on Tenant's Capital varied over the period but rose from 10 per cent in 1979/80 to almost 13 per cent in 1981/82 and then decreased to zero in 1983/84.

8 Net fund flow analysis showed a deficit in each of the five years as a result of capital expenditure, increased valuation and private drawings collectively exceeding profits. In 1983/84 the average deficit was £10,000. External funds financed the deficits in the Net Fund Flows partly by the introduction of private funds but mainly from increased bank borrowings. Total borrowing increased by 115 per cent to almost £50,000.

9 Net Worth rose by 45 per cent but three-quarters of this was due to the increasing values of fixed assets.

10 The distribution of results within the sample indicated that, on average over the five years, 54 per cent of farms had Net Farm Incomes of less than £10,000 and that 80 per cent of the farms had Management and Investment Incomes of less than £10,000. The majority of farms are still financially sound with almost half borrowing less than 10 per cent of total assets. However, there is a small but growing number who are financially overstretched and will have to sell assets to remedy the situation.

11 A sub-sample of 22 farms with interest charges in excess of £1,000 in 1979/80 (designated as 'high interest' farms in this report) continued to expand during the period, but the cost in terms of interest on borrowed capital and additional fixed inputs limited both profits and private drawings. External borrowings on these

farms increased by £47,000 to £87,000. Net Worth improved due mainly to an increase in asset values while owner equity declined to 73 per cent of total assets. The net result was that the increased production, on average, did not pay for the extra costs and a fund flow deficit occurred in all five years. A proportion of these farms will have to sell assets, preferably those on which the return is inadequate, to reduce interest charges and overcome an unreasonable time span of repayment. The sample of 24 farms with interest charges below £1,000 in 1979/80 (designated as 'low interest' farms) did not lower their profitability relative to the 'high interest' group. They expanded at a slower rate, and financed their expansion almost entirely from funds produced from within the farm from profitability. Their owner equity was 93 per cent of total assets.

12 The outlook for Dairy farming will depend on the ability of individual farmers to reduce costs relative to output. However its profitability compared with alternative enterprises does not appear to have changed. Nevertheless, one in twenty farms may not survive the new conditions confronting dairy farming and expansion financed mainly with borrowed funds must obviously be more carefully assessed than in the recent past. A significant proportion of the additional costs incurred in implementing recent expansion, as revealed by this survey, may be saved by returning to a lower level of farming intensity. Under such circumstances profits need not deteriorate. Universally adopted, this change of direction could reduce surpluses, allow moderate commodity price rises, improve profitability, reduce external borrowing and produce a more stable agricultural industry.

DAIRY FARM INCOMES

A Study of 46 farms in South West England 1979/80 - 1983/84

Introduction

Milk production is the most important single enterprise in farming in South West England, accounting for 63 per cent of the estimated output of grazing livestock in the counties of Cornwall, Devon, Dorset and Somerset in 1983/84. This report analyses the results of an identical sample of Specialist Dairy farms over the five years prior to the introduction of quotas in an attempt to identify any significant trends. It is hoped that the report will contribute some factual confidence to offset the uncertainty which quotas have imposed on this traditionally stable backbone of farming in this area.

1 Economic and climatic conditions 1979/80 - 1983/84

Table 1.1 indicates that the general level of price inflation, as measured by changes in the Retail Price Index, slowed down during the five year period but that the Index still increased by 50 per cent. Farmgate milk prices, excluding levies, rose by 40 per cent, slightly more than the prices of concentrates and fertiliser. However, the prices of most other farm inputs, especially of fuel, labour and general expenses, increased more than the milk price. Although each farm has a varying mix of inputs, most dairy farms have suffered a cost-price squeeze over the five year period. In order to maintain profitability, farmers could reduce costs or increase output or a combination of both, but with a favourable milk-concentrate price ratio and available grants, increased production was generally preferred. This was brought about by keeping more cows and to a lesser extent by increasing yields with greater concentrate feeding. The expansion, therefore, required funds over and above those required for normal working capital, the demands for which also increased because of inflation. Without adequate profitability, the additional capital had to be borrowed and, in the five years to 1983/84, bank lending to agriculture in the United Kingdom rose from £2,200 million to £5,300 m.

The actual cost of borrowing varied greatly over the 5 year period; interest rates were 12 per cent in April 1979, then climbed to a peak of

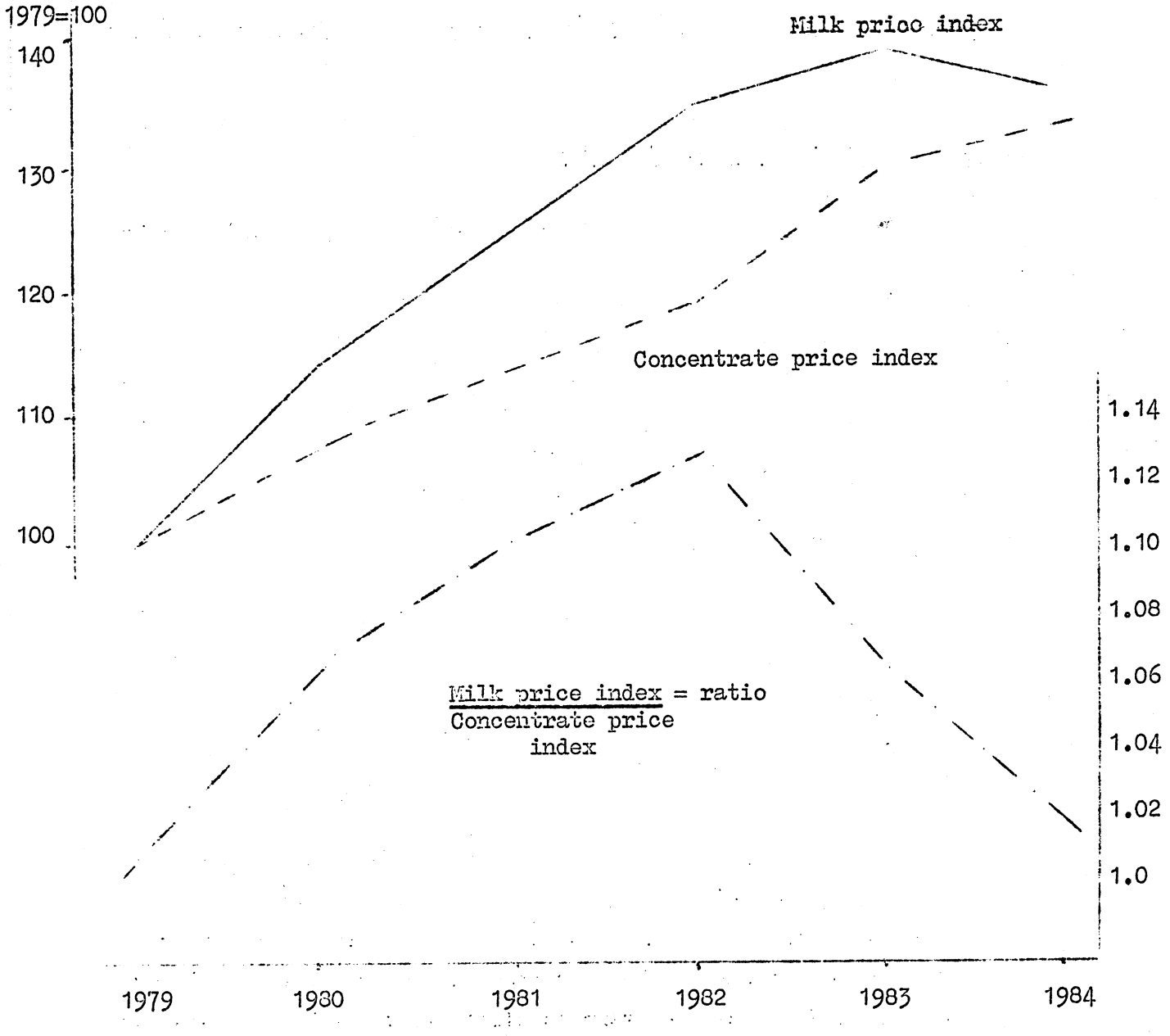
Table 1.1 Economic Indices 1979-1983

	1979	1980	1981	1982	1983
Retail Price Index	100	118	132	143	150
Milk prices	100	114	125	136	140
Friesian bull calves	100	88	94	113	110
Hereford X Friesian bull calves	100	95	104	121	120
Fat cows	100	105	117	128	137
Compound cattle feed	100	108	114	120	131
Fertiliser	100	116	128	135	136
Machinery repairs	100	116	127	138	149
Energy (fuel)	100	130	157	178	196
Labour	100	122	134	148	159
General expenses	100	116	134	148	156
Bank base rate	100	119	97	87	72

17 per cent in November 1979 but fell back to 8.5 per cent in March 1984. This element, together with the greater amounts of borrowing, became an increasing charge on many farm businesses over the five years covered. Dairy farm incomes were not helped by the reduced consumer demand for milk nor by the 2 per cent co-responsibility levy set by the European Commission in 1980/81 when it could not get agreement on milk quotas.

Economic conditions, however, play only a part in profitability as weather conditions for grass and forage production are also very important. The years 1979/80, 1981/82 and 1983/84 all witnessed unfavourable conditions for grazing and the conservation of forage in the South West. Each of these years had a cold wet spring, while 1983/84 also had a drought which necessitated increased concentrate usage to supplement the lack of summer grazing and also the poorer quality of winter fodder.

Diagram 1.1 Milk price and concentrate feed price trends 1979-84



2 The Sample

The farms for this study were selected from the sample of farms co-operating in the Farm Management Survey in the South West Region. The selection criteria were:-

i) they were Specialised Dairy farms i.e. on which 75 per cent or more of the farm gross margin came from the dairy herd;

ii) the farms had full accounts, including balance sheets, available for the five years;

iii) the farms experienced no major changes in acreage size;

iv) there were no major changes in the management of the farms.

Forty six farms met these conditions and formed an identical sample for the study. In 1983 there were about 9,000 registered milk producers in the four South West counties and a study of just 46 farms represent a very small proportion. However, the sample covered all four counties with differing soil types and micro-climates. It is also large enough to give a range of farmers' ages, management abilities and financial status. Farming comparisons over periods of years can be distorted if conditions in the first and last years are totally different from one another; however, whilst it is true that 1983/84 produced adverse weather conditions, 1979/80 was also a difficult year from this point of view.

Table 2.1 Some comparisons of the study farms and dairy farms in South West England

	Study	South West England (i)
No of farms	46	9000
Average farm size(hectares)	59	62
Average number of cows per herd	86	71
Milk sales per farm('000 litres)	4482	344.3
Average milk yield(litres)	5225	4849

(i) Source: Dairy Facts and Figures

The average farm in the study was similar in size to that of the average South West dairy farm, but it had more cows, higher yields and greater milk production. Nevertheless, in the absence of a more statistically representative sample, the results examined in this report will indicate the trends and position of many dairy farms within the South West province.

The main objectives of the study are to examine the farm results for the five years and to indicate:

- the trends in physical stocking, cropping and labour;
- the changes in outputs, inputs and incomes;

- the flows of financial funds;
- the effect of the above on the financial structure of the farm businesses in terms of assets and liabilities;
- any different trends between the farms with a low cost of borrowing and those with high interest charges.

3 Physical changes

The full details of cropping and stocking are given in Appendix A Table 1, but the following summary highlights some of the major features. Farm size increased by 10 per cent mainly as a result of land purchase. The apparently significant change in the proportion of tenanted land was due partly to one farm transferring the ownership and becoming a normal tenancy. The area of silage continued to increase at the expense of the area of hay with the additional forage area being required for the extra dairy cows (+ 13%) and for more youngstock (+ 8%). The average stocking rate increased by only 2 per cent, which may reflect either the poor climatic conditions or the practical stocking limitations on these farms. Milk yield per cow fluctuated slightly between years but increased by

Table 3.1 Summary of physical data

		Average 1983/84	% Change 1979/80-1983/84
No of farms		46	-
Farmer's age	(years)	50	-
Farm size	(hectares)	59	+ 10
Tenanted land	(%)	39	+ 16
Silage - main cut	(hectares)	21	+ 25
Hay - main cut	(hectares)	7	- 22
Dairy cows	(numbers)	86	+ 13
Other cattle	(grazing livestock units)	36	+ 8
Stocking rate	(LU's per forage hectares)	2.2	+ 2
Labour	(hours)	6739	+ 6
Total milk production per farm	('000 litres)	448.2	+ 15
Milk yield	(litres)	5225	+ 1

only 1 per cent over the whole period. The 15 per cent increase in milk production was, therefore, due almost entirely to additional cow numbers. Financial results partly reflect the physical changes on farms and the indications from this sample suggest that increased production was achieved by increasing the inputs of land, labour and livestock rather than by any improvement in the efficiency of use of the existing resources.

4 Financial changes

The analysis and comparison of financial data using percentage increases during a period of inflation can be misleading. The use of a single deflationary adjustment, such as the Retail Price Index, helps to make comparisons more meaningful. However the procedure must be used with care as the prices of output items and of the factors of production will vary differentially over time and not necessarily in the same direction as the average index.

Table 4.1 summarises the financial data (see Appendix Table 2 for full details) and indicates that the increase in Farm Output of 47 per cent only just kept pace with inflation (+ 50%, see RPI in Table 1.1) despite the increasing size of business. Costs of production, especially the 'fixed' elements, rose faster than inflation so that Net Farm Income over the five years fell by 24 per cent in current terms, and by 49 per cent when measured in constant 1979-80 prices. This measure of Net Farm Income excludes the effect of changes in the values of breeding livestock (Breeding Livestock Stock Appreciation, BLSA) which were significant in the late '70's and early '80's but which were negligible in 1984. Farm incomes were, however, depressed in 1983-84 by adverse weather conditions and compare unfavourably with those earned in 1981-82 and 1982-83 when they averaged just under £18,000 as a result of better weather and a more favourable milk-concentrate price ratio.

Output comprises the sales of milk and livestock, less purchases of livestock adjusted for changes in trading stock valuations. On Specialist Dairy farms, milk is obviously the main component of output

and it is of interest to examine the more important factors responsible for the higher output of milk in 1983-84 compared with 1979-80.

Table 4.1 Summary of financial data

	1983-84			
	£	% of total output	% changes 1979/80-1983/84	% changes in real terms(i)
Output: Milk	67067	80	+ 51	+ 3
Cattle	12088	14	+ 26	- 14
Other	4703	6	+ 47	0
Total	83858	100	+ 47	0
Variable costs:				
Feed	32763	39	+ 53	+ 4
Other	13405	16	- 55	+ 5
Total	46168	55	+ 53	+ 4
Gross margin	37690	45	+ 39	- 5
Fixed inputs:				
Labour incl farmer & wife	16247	19	+ 68	+ 14
Machinery (inc. dep)	9691	12	+ 64	+ 11
Rent & rates	6748	8	+ 107	+ 41
General overheads	4966	6	+ 66	+ 13
Total	37652	45	+ 72	+ 17
Management & investment income	38	-	- 99	-
Farmer & wife labour	7611	9	+ 54	+ 4
Net farm income	7649	9	- 24	- 49
B L S A(ii)	- 60	-	-	-
Net farm income incl. BLSA	7589	9	- 34	- 55

(i) For this calculation, the 1983-84 prices were adjusted according to changes in the Retail Price Index since 1979-80

(ii) Breeding livestock stock appreciation

The actual price of milk after levy deductions, but before payment for AI and National Milk Records, increased by 31 per cent. This is much less than the figure of 40 per cent indicated by national statistics and considerably less than the upward movement in the Retail Price Index.

The higher milk price accounted for over 60 per cent of the improved milk sales, higher yields per cow contributed only 4 per cent and

Table 4.2 Factors responsible for increased milk output in 1983-84 over 1979-80

	Extra litres	%
Higher milk yield:		
+ 75 litres x 85.8 cows	6435	11
Extra cows:		
+ 10.5 cows x 5150 litres	52270	89
Total	58705	100
	£	
Value of extra litres:		
58705 litres x 14.95p per litre	8732	39(i)
Higher milk prices:		
389530 litres x 3.58p per litre	13950	61
Additional value of milk sales	22732	100

(i) Of this figure, 4% is due to higher milk yields per cow and 35% to the production from the extra cows.

increased cow numbers produced the remainder. The contribution of cull cows and calves to output increased as would be expected from the greater herd size but, in real terms, output per unit from these sources fell as their sale prices failed to keep pace with inflation.

Variable costs are defined as those which vary with the scale of production and comprise such items as concentrate feeds, seeds and fertilisers. Appendix Table 8 shows that the increases in variable costs were less than those in output in the first four years of the 5-year period. In 1983-84 the reverse was true, the greater expenditure on concentrate feeds, for example, being due to the production of poorer quality fodder stocks as a result of the unfavourable weather. Gross margins increased in four of the five years, mainly reflecting the use of additional land and more cows.

From Table 4.1 it can be seen that the increases in the total cost of fixed inputs were greater than inflation by 17 percentage points. This was due to unit price increases of the individual items and the greater physical inputs of land, labour, machinery items and general overheads. It would appear, therefore, that the increased production was not obtained from existing resources. With the increase in farm output, one would have expected a gain in efficiency and a consequent reduction in unit fixed costs but this is not apparent on the farms in this study.

The additional live and dead stock investment in Tenants' Capital (excluding land and buildings) can be seen in detail in Appendix Table 4. Over the five years, Tenants' Capital increased by 47 per cent to just over £100,000 per farm. The return on Tenants' Capital, measured by its relationship to Management and Investment Income, stood at 10 per cent in 1979/80, increased to almost 13 per cent in 1981/82 but declined to nil in 1983/84.

5 The Flow of financial funds

In periods of inflation or expansion in farm production, changes in farm incomes are not necessarily revealed in the bank balances which are, for many farmers, the barometer of the profitability of their businesses. The standardised measurement of Net Farm Income, while being adjusted where necessary by a rental charge on owned land and for the unpaid labour of partners, DOES NOT include the cost of capital whether this is borrowed or not. In this section the cost of borrowed capital is taken into account (the full methodology is explained in Appendix B). The figure for Net Farm Income is converted to a Net Profit, as in Table 5.1, which also indicates the various demands for funds for such items as capital expenditure and private drawings. Where the overall financial result is a negative one, the section explains how this is met by the introduction of outside funds.

The analysis in Appendix Table 5.' indicates that actual farm Profits increased in each year except for 1983/84, but that a Fund Flow deficit occurred in every year and averaged over £6,000 per year. This deficit arose because profits were insufficient to meet the demands

for capital expenditure and private drawings. It is true that just over a third of the deficit was due to land purchases and that just under half to capital improvements but, over a five year period, it would be expected that the average farm Profits should be able, at least, to make some contribution towards land purchases and improvements.

The summary Table 5.1 indicates that, in 1983/84, capital expenditure and private drawings both exceeded profit but, while the farm net fund flow deficit increased by 142 per cent over the five years, private drawings only rose at a similar rate to inflation. The effects of these deficits were partly offset by bringing in private funds, outside investments and/or legacies. but the major part had to be borrowed mainly from the banks as is seen in the next section.

Table 5.1 Summary of Profit, Fund Flow and Loans

	1983 - 84			
	Average £	% of profit	% change 1979/80-1983/84	% change in "real" terms (i)
Net Farm Income (inc.BLSA)	7589	76	- 34	- 55
Add: Rental value and unpaid wages	6667	67	+ 87	+ 27
Profit before interest	14256	143	- 5	- 36
Less: Interest charges	4252	43	+ 59	+ 8
Net Profit (inc.BLSA)	10004	100	- 19	- 45
Trading fund flow	13710	137	+ 30	- 12
Capital fund flow	12002	120	+ 65	+ 12
Private drawings	11936	119	+ 53	+ 4
Farm net fund deficit	- 10229	102	+127	+ 55
Private funds introduced	1717	17	+ 75	+ 19
Total net fund deficit	- 8512	85	+142	+ 65
Change in external credit	+ 8512	85	+142	+ 65

(i) i.e. adjusted for changes in the Retail Price Index since 1979/80.

6 Assets and Liabilities

The Balance Sheet completes the financial assessment of a business by combining the profit and fund flow data in order to determine the entrepreneur's Net Worth retained in his business. However, as with most accounting procedures, the Balance Sheet is only as accurate as the information available and the valuations relate to the particular dates stated. Detailed figures are given in Appendix Table 6, while the summary Table 6.1 indicates an investment in Assets of over £262,000 on the average farm. This will vary between farms depending on the proportion of land owned and rented, its value, and the level of farming intensity as measured by the Tenant's Capital. The table reveals that 60 per cent of the Assets are in the form of land, which obviously has a major influence on the value of Net Worth, the latter being the value of Total Assets after External Loans are deducted. Whereas the value of Assets may vary, external loans do not and, therefore, their proportion of Net Worth will vary according to the state of confidence in the land and livestock markets which are the major determinants of the value of land and other assets at any one time. Bank loans and overdrafts have trebled from the opening balance in 1979/80 to the closing balance in 1983/84.

Hire purchase and other short term loans, including leases, more than trebled over the five years, albeit for the latter from a low opening figure. Many financial advisers test the financial stability of a business by calculating balance sheet ratios which can be seen in Appendix Table 7. For the farms in this study the ratios relating to borrowing indicate that the farms are still financially reasonably healthy for, on the average farm, only one-fifth of the assets are borrowed. However, most ratios have deteriorated over the five years even allowing for the reasonably profitable years of 1981/82 and 1982/83. The deterioration in liquidity and current ratios[1] suggest that some of the more permanent overdrafts should be converted into long-term loans which would improve a difficult short-term liquidity situation.

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(1) Current ratios - see Definitions of Terms p 56

Table 6.1 Summary of Assets and Liabilities

	1983 - 84		
	Closing balance £	% total assets	% Change 1979/80-1983/84
Assets			
Land and buildings	160670	61	+ 51
Machinery	29657	11	+ 59
Livestock	53766	21	+ 62
Crops and stores, etc.	9002	3	+114
Debtors and credit bank balance	9278	4	+ 25
Total Assets	262373	100	+ 55
Liabilities			
AMC and other long term loans	13716	5	+ 40
Bank loans and overdraft	25323	10	+224
HP and other short term loans	2073	1	+247
Creditors	8401	3	+ 76
Total External Loans	49513	19	+115
Net Worth	212860	81	+ 45
Total Liabilities	262373	100	+ 55

The assessment of Total Assets, and consequently of Net Worth, includes the following items:-

i) the periodic revaluation of land, buildings and machinery;
ii) breeding livestock stock appreciation (BLSA);
iii) the acquisition of capital grants;
iv) the introduction of private funds to the business;
v) the farm profit, net of BLSA and private drawings.

Table 6.2 indicates that, of the average increase in net worth of £66,000 (£13,000 per year), only 17 per cent was attributable to profits net of drawings while nearly three quarters was due to the revaluation of assets.

It is true that in many other types of business it has also been difficult to increase Equity (Net Worth) out of profits. The intro-

Table 6.2 The contributions to the cumulative five-year increase in Net Worth

	£	% Total
Revaluation of property	31742	48
Revaluation of machinery	7342	11
Breeding livestock stock appreciation	10095	15
	49219	74
Capital grants received	7540	11
Net private funds introduced	5550	8
Land ownership transferred	- 7000	- 10
Residue (Profit less drawings)	10993	17
	66262	100

duction of milk quotas will, in the short term at least, restrict profitability of dairy farms unless costs can be reduced. Therefore, although capital investment may be curtailed, it will be difficult to repay existing loans unless some assets are sold, especially as repayment is not accepted as a tax deduction allowance.

7 The Variability of farm results

Average figures usually obscure the wide range of farm results obtained in surveys. The tables (p17-18) illustrate some of the variations between farms in 1979/80, in 1983/84 and in the 5-year average figures for each farm.

The distributions indicate the deterioration in incomes especially of Management and Investment Incomes. The 5-year averages reveal that well over half the farms had an annual Net Farm Income of less than £10,000 and four-fifths a Management and Investment Income of less than £10,000. The last five years may well have increased the surpluses of milk products in the European Community but they have certainly not

produced any bonanzas in the incomes of the majority of these specialist dairy farms.

Table 7.1 Distribution of Net Farm Incomes and Management Investment Income

Net Farm Income	1979/80	1983/84	5 year averages
	%'s of farms		
Negative	2	17	5
Positive:			
Less than £10,000	63	52	49
£10,000 - £20,000	24	17	32
Over £20,000	11	14	14
	100	100	100
Management & Investment Income			
Negative	17	54	25
Positive:			
Less than £10,000	61	35	55
£10,000 - £20,000	24	9	13
Over £20,000	11	2	7
Total	100	100	100

The capital cost of producing the extra milk has been financed mainly by loans and the following tables illustrate the changes in the distributions of loans and equity ratios. The latter measure the proportion of total assets owned by the farmer. It indicates that the situation has deteriorated but that the majority of farmers were still not large borrowers and had good financial security although 20 per cent had loans in excess of £100,000 in 1983/84.

There is, however, a small but increasing number of farmers who are overstretched financially and who may be forced to reduce their loans by selling assets in order to prevent a further deterioration in their owner-equity.

Table 7.2 Distribution of External loans and Equity ratio(i)

Total external loans	1979/80	1983/84
	% of farms	
Less than £20,000	70	46
£20,000 - £60,000	17	26
£60,000 - £100,000	9	8
Over £100,000	4	20
Total	100	100

Equity ratio(i) %		
	% of farms	
Less than 50	-	4
Over 50 - 70	13	14
Over 70 - 90	37	34
90 & over	50	48
Total	100	100

(i) $\% \text{ Equity ratio} = \frac{\text{Net worth}}{\text{Total assets}} \times 100$

8 'High interest' and 'Low interest' farms

Interest charges reflect the direct cost of borrowing funds and in this section the farm results are analysed with the farms sub-divided into two groups on the basis of the total interest charge they had to meet in 1979/80:-

Interest charges in 1979/80	No of farms
Under £1,000	24
£1,000 & above	22

The £1,000 interest charge demarkation line allowed a roughly equal division of the sample numbers and also differentiated the non-borrowers and minor borrowers from the farms with more substantial loans. Detailed analyses of the results on this basis are given in Appendix Tables 9 to 18 while a summary of them is shown in Table 8.1 below.

Table 8.1 Farm results for Low interest & High interest groups of farms

		'Low interest' farms			'High interest' farms		
		1979/80	1983/84	% Change	1979/80	1983/84	% Change
Interest charges	£	341	747	+ 119	5234	8076	+ 54
Size of farm	ha	50	52	+ 5	58	66	+ 14
Dairy cows	no	70	77	+ 10	82	95	+ 16
Milk produced '000	litres	358.4	390.4	+ 9	423.5	511.3	+ 21
Milk yield	litres	5120	5064	- 1	5178	5368	+ 4
Stocking rate	LU/ha	1.86	1.88	+ 1	1.95	2.01	+ 3
		£ per farm			£ per farm		
Gross output		52535	73894	+ 41	62177	94728	+ 52
Gross margin		25253	33723	+ 34	28956	42017	+ 45
Fixed inputs		20533	33690	+ 64	23325	41974	+ 80
Management and investment income		4720	33	- 99	5631	43	- 99
Net farm income (excl. BLSA)		9649	7579	- 22	10616	7725	- 27
Actual profit		14039	13270	- 6	10586	6448	- 39
Total external loans		7261	14845	+ 104	40152	87333	+ 118
Net worth		147362	194399	+ 32	145764	232998	+ 60
		%			%		
Return on capital		9	0		10	0	

The summary indicates the main differences between the groups in the base year 1979/80. Interest charges, the factor which was used for dividing the groups, were 15 times greater on the average 'high interest' farm. The average farm in the 'high interest' group was

slightly larger, had more dairy cows and a higher stocking rate but milk yields in both groups were similar. Output was some 18 per cent higher but Net Farm Income and the return on Tenant's Capital were only 10 per cent greater. The higher cost of interest, however, reduced the profit to £10,586, £3,450 less than the average of the 'low interest' group. Total external liabilities were £40,000 compared to £7,200. Net worth, nevertheless, was very similar.

On a non-financial aspect, it was of interest to note that the average age of the 'low interest' farmers was 53 compared to 47 for the 'high interest' group. This difference in age is much smaller than might have been expected, on the assumption that it would be the much younger farmers who borrowed heavily to increase their herds and modernise their farms. On the evidence of this small sample there is little difference in age between farmers who were willing to take on large loans.

The changes over the five years indicate the expansion motivation of the 'high interest' group as evidenced by their increased farm size, larger herds and, to a lesser extent, higher milk yields and stocking rates compared with the 'low interest' group. Output and gross margins also increased but the additional fixed costs rose by some 80 per cent over five years compared to 64 per cent which reduced Net Farm Income and actual Profits more than in the 'low interest' group. Both groups doubled their external liabilities, however, the increase to £15,000 for the 'low interest' group is less serious than the average closing liabilities of £87,333 in the 'high interest' farms. Average Net Worth appears to have risen more in the 'high interest' group and this requires a more detailed explanation which is given later.

In order to allow for variations between years and the possibly greater adverse effects of weather on the more intensively stocked 'high interest' group, Net farm incomes, Profits and Fund flows over the five years have been averaged and the results are given in Table 8.2. On this basis, the Net Profit of £12,404 of the 'high interest' group was 26 per cent less than that of the 'low interest' farms although their Net Farm Income was greater. The additional annual investment of the 'high interest' group was, on average, £14,292 equivalent to 115 per cent of Net Profit, compared to a figure of only 40 per cent in the 'low

interest' group. Private drawings were nearly £2,000 lower in the 'high interest' group but the combination of capital and private

Table 8.2 Average Incomes, Profits and Fund flows over five years

	'Low interest' farms		'High interest farms	
	Average 1979/80-1983/84	% of Net profit	Average 1979/80-1983/84	% of Net profit
	£		£	
Net Farm Income inc. BLSA	12346	73	14356	116
Add: Rental value and unpaid wages	5048	30	5074	41
Profit before interest	17394	103	19430	157
Less: Interest charges	569	3	7026	57
Net profit (a)	16825	100	12404	100
Valuation change	3414	20	6131	49
Machinery (net of deprec.)	79	-	900	7
Improvements	2498	15	4042	33
Land purchases net	894	5	3187	26
Miscellaneous assets	43	-	32	-
Sub-total	6928	41	14292	115
Private drawings	11204	67	9317	75
Total (b)	18132	108	23609	190
Farm net fund flow (a-b)	-1307	- 8	-11205	- 90

expenditure produced a negative fund flow of over £11,000 which had to be met by the introduction of £2,000 of private funds and £9,000 of external loans. The 'low interest' group's average demand for funds overshot Net Profit by 8 per cent but in its case only £1,307 of extra funds had to be found. Land purchase was significant in the 'high interest' group but it represented only 28 per cent of the deficit with expenditures on improvements accounting for a further 36 per cent. The investment in machinery over and above that for normal replacement was minimal. It should be emphasised that these are averages over 5 years and should, therefore, minimise the effect of weather conditions on Profit and irregular investments. For a group of 22 farms to require four-fifths of its funds for expansion to come from outside the farm

over such a long period does not indicate a very prosperous period and was, of course, prior to milk quotas.

From the summary of the results of the two groups, Table 8.1, the decrease in profitability of the 'high interest' group would appear to have been mitigated by the greater increase in Net Worth i.e. the farmer's own investment in the business. However the analysis of the contributions to the increase in Net Worth over the 5-year period, as in

Table 8.3 The contributions to the cumulative 5-year increase in Net Worth

	'Low interest' farms		'High interest' farms	
	£	%	£	%
Revaluation of property	22720	48	41395	47
Revaluation of machinery	6926	15	7796	9
Breeding l'stock stock appreciation	8924	19	11372	13
Capital grants received	3314	7	12152	14
Net private funds introduced	562	1	10992	13
Land ownership transfer	-7000	-15	-	-
Profit(i) Residue	11591	25	3527	4
Total increase in Net Worth	47037	100	87234	100

(i) Net of private drawings & BLSA

Table 8.3, shows that the revaluations of property and of machinery accounted for more than half of the increase. Also the Net Worth of the 'high interest' farms benefitted from the greater acquisition of capital grants and the introduction of more private funds. The net result was that only 4 per cent of the additional Net Worth came from farm Profits, net of private drawings and BLSA, compared with 25 per cent for the 'low interest' group. To summarise, the 'high interest' group continued to be more expansionist but, in the period reviewed, this produced no improvement in profitability and culminated in an increase of external borrowings from £40,000 to £87,000. In the short term, however, the group did benefit by the increasing value of

assets but, if none of these are cashed, the burden of increased loans will limit profitability. With the current enforced reduction in milk output, many will question whether any expansion requiring borrowed funds is worthwhile. The small borrowing-low interest farms expanded but at a slower pace and have on average refrained from land purchase and have financed their investments in improvements and livestock from current profitability.

This limited analysis of farm results in the period prior to milk quotas indicates that the expansion financed mainly from borrowed funds was not profitable. If the investment has been to modernise the farms, it may well have more long-term benefits. Nevertheless, the current limitations on production, especially of milk, must question the value of further expansion using mainly outside funds. In fact, for those farms which are overstretched (highly geared) with high borrowing a reduction in the business assets may be necessary. In such circumstances costs, including interest charges, will have to be reduced by more than output in order to enhance profit. For many farms the cash flow situation may be contained by limiting investment in machinery and keeping farm improvements to the bare minimum. Private drawings may also have to be curtailed although the evidence of this study suggests that these have barely kept pace with inflation, especially in the 'high interest' group of farms.

The immediate outlook for the dairy enterprise is uncertain, but relatively speaking it is no bleaker than for the alternative land-using enterprises. Providing that dairy farmers respond to the challenge of cost-cutting, with the same enthusiasm as when they were expanding, the number of business casualties will be limited. Overall, agricultural output may be reduced for a few years but cost-efficient farmers will expand, albeit at the expense of those who decide, or are forced, to reduce or give up altogether.

9 Outlook

The consequences of the introduction of milk quotas in April 1984 cannot yet be assessed fully, nor will they be apparent for a few years.

The decisions on the special cases have only just been finalised, the question of saleable quotas continues to be discussed although some land-based sales of quotas have already been arranged.

For the farming year ending in March 1985, the incomes of dairy farmers will also be affected by the drought in the summer of 1984, by the seasonal adjustments of the milk price and by the lower prices for concentrate feeds. The results of a sample of dairy farms in the period April-December 1984 indicated that the changes in margins depended partly on how individual farmers adjusted their production relative to their primary quotas. The main results are given in the table below and show that farms which produced 2 per cent or more below quota experienced a decrease in the herd margin over concentrates (MOC)

Milk production monitoring survey April-December 1984

	Production		
Per herd	2% or more below quota	Within 2% of quota	2% or more above quota
	% changes on 1983/84		
Milk sold - litres	- 18	- 9	+ 1
Milk price	- 6	- 4	- 5
Milk sales	- 23	- 12	- 3
Concentrates	- 62	- 36	- 36
Margin over concentrates	- 4	- 2	+ 12
No of cows in herd	- 8	- 3	+ 1
Margin over concentrates per cow	+ 3	+ 3	+ 7

of 4 per cent compared with 1983/84. The MOC in the herds which produced within 2 per cent of quota decreased by 2 per cent while the margins in herds producing over quota increased by 12 per cent. From the MOC, other costs including overheads have to be met before determining profitability and, on this basis, the majority of the herds may have a worse result than in 1983/84.

While recently farmers have been encouraged to purchase machinery before the capital tax allowances are reduced by the provisions of the 1984 Finance Act, it seems certain that many improvement projects on farms have been curtailed as the lending by the London Clearing Banks to agriculture has slowed down. It will be interesting to see the direction of movement of loans from other sources such as AMC, leasing companies and trade creditors.

The reduced production of milk in the summer of '84 has meant that no levy is payable, but a more productive season for grass in '85 could lead to some farms paying the penalty for producing over quota. Future profits from dairying and, therefore, also livestock values are likely to be more volatile than in the past. Nevertheless, farmers who react quickly to the changing situation and produce a given quantity of milk at the minimal cost will still make profits. Surplus funds may be needed to reduce external borrowing but some farmers will be able to expand at the expense of those who decide, or are forced, to contract. If a farm's recent expansion has overstretched one or more of his resources of land, labour, capital or management, contraction could improve profitability although it may be psychologically painful.

Some of the alternatives to milk production - such as corn, beef and to a lesser extent, at the moment, sheep - are in surplus, which will have to be tackled by price control or quotas. Dairy enterprises are therefore likely to retain their relative profitability compared with other types of farming. The combination of reasonable winter feeding costs compared to 1983/84, and the stabilisation of dairy livestock values after the initial fall, has produced a 'could have been a lot worse' reaction from many dairy farmers.

The wide range of financial circumstances between farms will inevitably mean that some will not survive. Although owner-equity is a significant factor in judging the viability of a farm, it must be related to current and future profitability and the changing value of assets. The 4 per cent of the farmers in this small survey who borrow more than 50 per cent of their assets must be considered to be at risk. There are others with consistent low profitability who cannot meet their private and loan commitments and must also be in the danger zone.

Profitability, asset values and confidence are all inter-related, however. If the majority of dairy farmers respond to the challenge of cost reduction, with the same enthusiasm as they applied in the recent period of expansion, the numbers of casualties can be limited to the inevitable few whose existing resources are simply incapable of being adjusted to cope with the new conditions confronting the farming industry.

A P P E N D I X A

Supplementary tables

SPECIALIST DAIRY 1979/80 - 1983/84 (46 farms)

Table A 1 Cropping and Labour Data

	1979/80	1980/81	1981/82	1982/83	1983/84
Average farm size (hectares)	53.5	54.0	55.9	57.2	58.7
Percentage tenanted	33.3	33.1	32.6	38.7	38.6
CROPPING			hectares per farm		
Wheat*	0.1	0.1	0.2	0.3	0.2
Barley*	0.9	0.8	0.9	0.9	1.0
Other cereals*	0.1	0.1	0.1	0.1	0.1
TOTAL CEREAL*	1.1	1.0	1.2	1.3	1.3
Other cash crops*	0.1	0.1	0.1	0.1	0.1
TOTAL CASH CROPS	1.2	1.0	1.1	1.2	1.4
Arable forage	0.9	0.8	1.3	1.3	0.9
Silage - main cut	16.8	17.9	19.6	20.7	21.0
Hay - main cut	9.0	8.2	6.9	7.4	7.0
Grazing	24.2	24.8	25.7	25.2	27.1
Rough	1.4	1.3	1.3	1.4	1.3
TOTAL FORAGE	52.3	53.0	54.8	56.0	57.3
Yields			tonnes per ha		
Cereals	4.6	4.4	3.5	4.6	4.0
LABOUR			Labour units per farm		
Regular labour - farmer & spouse	1.19	1.17	1.17	1.17	1.17
- other workers	1.24	1.38	1.46	1.46	1.46
			hours per farm		
Regular labour (inc. farmer & spouse)	6055	6337	6463	6445	6432
Casual labour	293	340	298	300	307

* includes double cropping and contract crops, therefore totals may not agree

Table A 2 . Livestock Physical Data

	1979/80	1980/81	1981/82	1982/83	1983/84
Average farm size (hectares)	53.5	53.95	53.93	57.17	58.70
STOCKING - numbers			per farm		
Cows and bulls	76.2	78.1	81.9	85.3	86.5
Heifers in calf	12.6	13.3	13.5	13.3	13.9
Cattle over 2 years	2.9	2.8	2.3	2.4	2.5
Cattle 1 to 2 years	17.7	18.7	20.7	19.8	20.1
Cattle under 1 year	23.0	25.4	25.5	23.4	25.4
Sheep - ewes & rams	5.9	5.9	7.4	7.2	7.0
Pigs - sows	1.7	1.3	2.2	2.3	1.9
- fattening pigs	4.5	6.4	6.4	7.8	7.3
STOCKING - Grazing l'stock units			per farm		
Dairy cows	75.6	77.6	81.4	84.5	85.8
Other cattle	33.3	35.4	36.4	34.9	36.0
Sheep	1.4	1.4	1.8	2.3	2.1
Total	110.4	114.3	119.6	121.7	123.8
Index (1979/80 = 100)	100	104	108	110	112
Stocking rate:-					
Per forage hectare	2.11	2.16	2.18	2.17	2.16
Index	100	102	103	103	102
Per adjusted forage hectare	1.91	1.97	1.98	2.15	1.95
Index	100	103	104	113	102
MILK					
Per farm -'000 litres	389.5	407.3	415.8	443.3	448.2
Index	100	105	107	114	115
Per cow - litres	5150	5249	5111	5247	5225
Index	100	102	99	102	101
Price per litre - pence	11.38	12.50	13.73	14.75	14.96

Table A 3 Financial Outputs, Inputs and Net Farm Income

	1979/80	1980/81	1981/82	1982/83	1983/84
Average size (hectares)	53.5	54.0	55.9	57.2	58.7
			£ per farm		
Milk	44335	50923	57103	65396	67067
Cattle*	9611	9284	12785	13766	12088
Sheep*	235	238	399	555	588
Pigs and poultry*	1025	1256	1361	1660	1618
Cereals	432	411	418	648	632
Other cash crops	62	63	54	61	57
Miscellaneous	1446	1834	1662	1990	1808
TOTAL OUTPUT*	57146	64009	73782	84076	83858
Feedingstuffs	21483	21898	25120	28370	32763
Other livestock costs	2879	3432	4091	4351	4667
Seeds	266	263	263	273	328
Fertilisers	3809	4439	4925	6135	5670
Other crop costs	271	285	377	439	460
Casual labour	373	466	513	533	589
Contract	1041	1255	1445	1525	1691
TOTAL VARIABLE COSTS	30122	32038	36734	41626	46168
GROSS MARGIN*	27024	31971	37048	42450	37690
Regular labour (inc. farmer & spouse)	9681	11504	13131	15000	16247
Machinery	5926	7574	8205	8976	9691
Rent and rates	3265	3862	4676	5683	6748
General overheads	2996	3673	4431	4874	4966
TOTAL FIXED INPUTS	21868	26613	30443	34533	37652
Management & investment income*	5156	5358	6605	7917	38
Labour of farmer and spouse	4955	5579	6278	6943	7611
NET FARM INCOME (NFI)*	10111	10937	12883	14860	7649
Breeding l'stock stock apprec.	1394	1449	4384	2928	- 60
Net farm income including BLSA	11505	12386	17267	17788	7589

*Excludes breeding livestock stock appreciation

Table A 4 Tenant's Capital - Composition and Return

	1979/80	1980/81	1981/82	1982/83	1983/84
Average farm size (hectares)	53.5	53.95	55.93	57.17	58.70
Capital invested in:-			£ per farm		
Breeding livestock	27545	30471	35028	40256	43366
Trading livestock	7449	8516	9338	10092	10213
Crops, cultivations & stores	4925	6009	6138	6846	7900
Machinery	21003	24443	25857	26967	28684
Total physical assets	60922	69439	76361	84161	90163
Liquid assets(i)	7630	7930	9165	10363	10342
TOTAL TENANT'S CAPITAL	68552	77369	85526	94524	100505
Return on Tenant's Capital					
Management Investment Income (inc. BLSA)	6550	6807	10989	10845	- 22
Return on Tenant's Capital %	9.55	8.80	12.85	11.47	-

(i) Includes debtors and bank blances in credit

Table A 5 Net Farm Income, Net Fund Flow and changes in use of External Credit

	1979/80	1980/81	1981/82	1982/83	1983/84
Average size (hectares)	53.5	54.0	55.9	57.2	58.7
			£ per farm		
NET FARM INCOME - including BLSA	11505	12386	17267	17788	7589
Add: Imputed items - rental value	2410	2812	3375	3821	4475
- other	1158	1579	1493	1997	2192
NET PROFIT BEFORE INTEREST	15073	16777	22135	23606	14256
Less: Interest charges	2681	3596	3814	3942	4252
NET PROFIT AFTER INTEREST	12392	13181	18321	19664	10004
Add: Depreciation	3317	4509	4645	4890	5241
Less: Valuation increase	5131	3532	7065	6302	1535
TRADING NET FUND FLOW (A)	10578	14158	15901	18252	13710
Net Capital Expenditure					
Machinery	4553	4037	4597	5502	6272
Improvements	2085	2856	2199	4709	2612
Land purchases	587	6196	619	1174	3100
Miscellaneous assets	38	57	15	62	18
CAPITAL NET FUND FLOW (B)	7263	13146	7430	11447	12002
TRADING AND CAPITAL NET FUND FLOW (deficit) (A - B)	+3315	+1012	+8471	+6805	+1707
Less: Private drawings	7816	9256	10648	11852	11936
FARM NET FUND FLOW (deficit -)	-4501	-8244	-2177	-5047	-10229
Add: Private funds introduced (withdrawn -)	980	1306	1744	-197	1717
TOTAL NET FUND FLOW (deficit -)	-3521	-6938	-433	-5244	-8512
Changes in External Credit (increase +, decrease -)					
Long term loans: AMC	- 48	-52	3012	- 64	-1376
Bank	313	3298	-1684	1073	1880
Other	- 97	904	350	219	1069
Short term loans: Bank overdraft	3168	3046	-999	3444	4016
Other	543	- 2	1095	1555	1818
Decrease (increase -) in liquid assets	- 358	-256	-1341	- 983	1105
NET CHANGE IN EXTERNAL CREDIT (LOANS)	+3521	+6938	+ 433	+5244	+8512

Table A 6 Assets[(i)] and Liabilities

	Opening 1979/80	Closing Balances - per farm 1979/80	1980/81	1981/82	1982/83	1983/84
Average size (hectares)	-	53.5	54.0	55.9	57.2	58.7
ASSETS[(i)]				£ per farm		
Land & Buildings	102943	117296	131478	135279	139091	153929
Tenant Improvement	3185	3824	5267	5721	6548	6741
Other tenant's Assets	300	374	431	446	507	524
Machinery	18676	23330	25491	26224	27711	29657
Breeding Livestock	26359	29305	32156	37900	42994	43737
Trading L'stock	6771	8214	8907	9768	10398	10029
Crops, cultivations	1780	2131	2568	2981	3672	4089
Consumable stores	2124	3177	3338	3390	3642	4389
Debtors	5396	5451	5922	7467	8681	7686
Bank Credit balance	2055	2351	2136	1933	1701	1592
TOTAL ASSETS	169589	195453	217694	231109	244945	262373
LIABILITIES						
AMC	7520	7471	7420	10431	10368	8992
Building Soc. loan	7	126	0	0	0	420
Bank Term loan	3163	3760	7058	5374	6448	8328
Other Long term	2269	2054	3084	3435	3654	4304
Hire Purchases	548	439	617	624	787	1362
Creditors	4786	5394	5199	6116	7523	8401
Bank overdraft	4648	7489	10536	9536	12980	16995
Other Short term	50	175	190	362	347	711
TOTAL EXTERNAL LOANS	22991	26908	34104	35878	42107	49513
NET WORTH	146598	168545	183590	195231	202838	212860
TOTAL LIABILITIES	169589	195453	217694	231109	244945	262373
Revaluation[(i)] included in above Assets - cumulative						
Land & Buildings	-	11212	15310	15591	21040	29346
Tenants Improvement	-	594	1947	2669	2205	2396
Machinery	-	2894	5419	6002	6717	7342
TOTAL	-	14700	22676	24262	29962	39084
				Cumulative		
Net Funds introduced	-	980	2286	4030	3833	5550
Land ownership transferred	-				7000	7000

(i) These include the effects of periodic revaluation

Table A 7 Balance Sheet - Percentage Ratios

	Opening Balance 1979/80	Closing Balance 1979/80	1980/81	1981/82	1982/83	1983/84
				%		
OWNER EQUITY						
Net Worth x 100 / Total Assets	86	86	84	84	83	81
GEARING						
(1) Long term loans x 100 / Net Worth	9	8	10	10	10	10
(2) Total loans x 100 / Net Worth	16	16	19	18	21	23
FIXED ASSETS						
Fixed Assets x 100 / Total Assets	89	89	89	89	88	89
CURRENT						
Current Assets x 100 / Current Liabilities	184	160	141	156	132	103
LIQUIDITY						
Liquid Assets x 100 / Current Liabilities	74	58	49	56	48	34

Table A 8 Financial Indices 1979/80 - 1983/84

(1979/80 = 100)

	1979/80	1980/81	1981/82	1982/83	1983/84
Retail Price Index	100	116	129	139	146
Total farm output	100	112	129	147	147
Variable costs	100	106	122	138	153
Gross margin	100	118	137	157	139
Fixed inputs	100	122	139	158	172
Management & Investment income	100	104	128	154	1
Farmer - Spouse labour	100	113	127	140	154
Net farm income	100	108	127	147	76
Tenant's Capital	100	113	125	138	147
Interest	100	134	142	147	159
Profit	100	106	148	159	81
Capital cash flow	100	181	102	158	165
Private drawings	100	118	136	152	153
Farm fund flow (negative)	(100)	(183)	(48)	(112)	(227)
Net fund flow (negative)	(100)	(197)	(1)	(149)	(242)
External loans	100	127	133	156	184
Closing Net Worth	100	109	116	120	126
Closing Assets	100	111	118	125	134

Table A 9 Low and High Interest Farms

Summary of Financial changes 1979/80 - 1983/84

	Low Interest[(i)] farms			High Interest farms		
Physical Data	1979/80	1983/84	% change	1979/80	1983/84	% change
No of farms	24	24	-	22	22	-
Size of farm (ha)	49.6	52.1	5.0	57.8	65.9	14.0
Tenanted area (%)	37.8	47.1	24.6	29.2	31.4	7.5
Dairy Cow No	70.0	77.1	10.1	81.8	95.2	16.4
Young Stock (G L U)	28.7	29.5	2.8	38.4	43.0	12.0
Stocking Rate (LU/ha)	1.86	1.88	1.1	1.95	2.01	3.1
Milk - per farm (litres)	358371	390437	8.9	423523	511286	20.7
Milk - per cow (litres)	5120	5064	- 1.1	5178	5368	3.7
Financial Data			£ per farm			
Output[(ii)]	52535	73894	40.7	62177	94728	52.4
Variable Costs	27282	40171	47.2	33221	52711	58.7
Gross Margin[(ii)]	25253	33723	33.5	28956	42017	45.1
Fixed Inputs	20533	33690	64.1	23325	41974	80.0
Management & Investment income (ii)	4720	33	- 99.3	5631	43	- 99.2
Farmer & Spouse	4929	7546	53.1	4985	7682	54.1
Net Farm Income[(ii)]	9649	7579	- 21.5	10616	7725	- 27.2
BLSA	1104	20	-	1710	- 148	
Net Farm Income (incl. BLSA)	10753	7599	- 29.3	12326	7577	- 38.5
Tenant's Capital	64238	87546	36.3	73258	114643	56.5
Return[(iii)] on Tenant's Capital	9.1%	0	-	10.0	0	-

(i) Based on 1979/80 Interest charges - less than £1000 per farm
(ii) Excludes BLSA
(iii) As measured by Management & Investment Income incl. BLSA

Table A 10 Low[(i)] Interest Farms

Physical and Financial Data 1979/80 - 1983/84 (24 farms)

Physical Data	1979/80	1980/81	1981/82	1982/83	1983/84
Size of farm (ha)	49.6	50.5	52.1	51.7	52.1
Tenanted area %	37.8	37.4	37.9	47.5	47.1
Dairy Cows	70.0	71.2	72.3	74.9	77.1
Young Stock (G L U)	28.7	29.6	32.2	30.7	29.5
Stocking rate ($GLU/_{ha}^{Adj}$)	1.86	1.88	1.88	2.09	1.88
Milk - per farm ('000 litres)	358.4	373.2	370.4	384.0	390.4
Milk - per cow (Litres)	5120	5246	5125	5127	5064
Financial Data			£ per farm		
Output[(ii)]	52535	59059	66191	74030	73894
Variable Costs	27282	29323	31722	36309	40171
Gross Margin[(ii)]	25253	29736	34469	37721	33723
Fixed Inputs	20533	25025	28390	31463	33690
Management & Investment Income[(ii)]	4720	4711	6079	6258	33
Farmer & Spouse labour	4929	5559	6185	6783	7546
Net Farm Income[(ii)]	9649	10270	12264	13041	7579
BLSA	1104	1228	3935	2639	20
Net Farm Income	10753	11498	16199	15680	7599
Tenant's Capital	64238	70712	76611	83067	87546
Return[(iii)] on Tenant's Capital	9.1	8.4	13.1	10.7	0

(i) Based on 1979/80 Interest Charges - less than £1,000 per farm
(ii) Excludes BLSA (Breeding Livestock Stock Appreciation)
(iii) As measured by Management & Investment Income inc. BLSA

Table A 11 High[(i)] Interest Farms
Physical and Financial Data 1979/80 - 1983/84 (22 farms)

Physical Data	1979/80	1980/81	1981/82	1982/83	1983/84
Size of farm (ha)	57.8	57.7	60.1	63.2	65.9
Tenanted area %	29.2	28.9	27.5	30.8	31.4
Dairy Cows	81.8	84.6	91.3	95.0	95.2
Young Stock (G L U)	38.4	41.7	41.0	39.5	43.0
Stocking rate ($GLU/^{Adj}_{ha}$)	1.95	2.05	2.08	2.21	2.01
Milk - per farm ('000 litres)	423.5	444.4	465.2	508.0	511.3
Milk - per cow (litres)	5178	5252	5098	5343	5368
Financial Data			£ per farm		
Output[(ii)]	62177	69409	82062	95037	94728
Variable Costs	33221	35001	42202	47426	52711
Gross Margin[(ii)]	28956	34408	39860	47611	42017
Fixed Inputs	23325	28344	32683	37883	41974
Management & Investment Income[(ii)]	5631	6064	7177	9728	43
Farmer & Spouse	4985	5599	6381	7117	7682
Net Farm Income[(ii)]	10616	11663	13558	16845	7725
BLSA	1710	1692	4875	3243	- 148
Net Farm Income	12326	13355	18433	20088	7577
Tenant's Capital	73258	84631	95253	107024	114643
Return[(iii)] on Tenant's Capital	10.0	9.2	12.7	12.1	0

(i) Based on 1979/80 Interest Charges - greater than £1,000 per farm
(ii) Excludes BLSA (Breeding livestock stock appreciation)
(iii) As measured by Management & Investment Income inc. BLSA

Table A 12 Low and High Interest Farms - Summary of Fund Flow Changes

	Low Interest			High Interest		
	1979/80	1983/84	% change	1979/80	1983/84	% change
	£ per farm					
Net Farm Income(i)	10753	7599	- 29.3	12326	7577	- 38.5
Add: Imputed items(ii)	3627	6418	77.0	3494	6947	98.8
NET PROFIT BEFORE INTEREST	14380	14017	- 2.5	15820	14524	- 8.2
Less: Interest charges	341	747	119.1	5234	8076	54.3
NET PROFIT AFTER INTEREST	14039	13270	- 5.5	10586	6448	- 39.1
Add: Depreciation	3036	4417	45.5	3624	6140	69.4
Less: Valuation increase	2619	541	- 79.3	7872	2626	- 66.6
TRADING NET FUND FLOW (A)	14456	17146	18.6	6338	9962	57.2
Net Capital Expenditure						
- Machinery	3800	4816	26.7	5374	7859	46.2
- Improvement	2065	1743	- 15.6	2416	3560	47.4
- Land	- 1090	3290	-	2107	2892	37.3
- Misc. Assets	55	2	-	20	34	-
CAPITAL NET FUND FLOW (B)	4830	9851	104.0	9917	14345	44.7
TRADING AND CAPITAL FUND FLOW (A-B)	+ 9626	+ 7295	- 24.2	- 3579	- 4383	22.5
Less: Private Drawings	8149	13232	62.4	7451	10523	41.2
FARM NET FUND FLOW	+ 1477	- 5937	-	- 11030	- 14906	35.1
Add: Private Funds introduced	81	2486	-	1962	877	
TOTAL NET FUND FLOW	+ 1558	- 3451	-	- 9068	- 14029	54.7
Changes in External Credit (increase +, decrease -)						
Long term loan: AMC	-	-	-	- 101	- 2878	-
Bank	- 673	- 45	-	1388	3981	-
Other	- 32	- 197	-	- 164	2450	-
Short term loans:						
Bank overdraft	- 281	2937	-	6932	5193	-
Other	465	328	-	630	3443	-
Add: Decrease in Liquid Assets (-increase)	- 1037	428	-	383	1840	-
NET CHANGE IN EXTERNAL CREDIT (LOANS)	- 1558	3451	-	9068	14029	-

(i) Includes BLSA (Breeding Livestock Stock Appreciation)
(ii) Rental value, value of unpaid labour

Table A 13 Low[(i)] Interest Farms - Fund Flow Detail 1979/80 - 1983/84

	1979/80	1980/81	1981/82	1982/83	1983/84	Five Year average
			£ per farm			
NET FARM INCOME[(ii)]	10753	11498	16199	15679	7599	12346
Add: Imputed items[(iii)]	3627	4587	4942	5665	6418	5048
NET PROFIT BEFORE INTEREST	14380	16085	21141	21344	14017	17394
Less: Interest charges	341	529	598	629	747	569
NET PROFIT AFTER INTEREST	14039	15556	20543	20715	13270	16825
Add: Depreciation	3036	4137	4058	4219	4417	3973
Less: Valuation increase	2619	3108	5300	5500	541	3414
TRADING NET FUND FLOW (A)	14456	16585	19301	19434	17146	17384
Net Capital Expenditure						
- Machinery	3800	3923	3213	4508	4816	4052
- Improvements	2065	2681	1828	4175	1743	2498
- Land	- 1090	2984	229	- 946	3290	894
- Misc. Assets	55	71	5	83	2	43
CAPITAL NET FUND FLOW (B)	4830	9659	5275	7820	9851	7487
TRADING AND CAPITAL FUND FLOW (A-B)	9626	6926	14026	11614	7295	9897
Less: Private drawings	8149	10305	11482	12853	13232	11204
FARM NET FUND FLOW	1477	- 3379	2544	- 1239	- 5937	-1307
Add: Private funds introduced (-transferred out)	81	1763	- 2039	- 1729	2486	112
TOTAL NET FUND FLOW	+ 1558	- 1616	+ 505	- 2968	- 3451	- 1195
Changes in External Credit (increase + decrease -)						
Long term loans: AMC	-	-	-	-	-	-
Bank	- 673	- 110	184	- 37	- 45	- 136
Other	- 32	102	-	700	- 197	115
Short term loans:						
Bank overdraft	- 281	1369	- 31	495	2937	898
Other	465	- 83	82	2410	328	640
Add: Decrease in Liquid Assets (-increase)	- 1037	338	- 740	- 600	428	- 322
NET CHANGE IN EXTERNAL CREDIT (loans)	- 1558	+ 1616	- 505	+ 2968	+ 3451	+ 1195

(i) Based on 1979/80 interest charges less than £1,000 per farm
(ii) Includes BLSA (Breeding Livestock Stock Appreciation)
(iii) Rental value, value of unpaid labour

Table A 14 High(i) Interest Farms - Fund Flow Detail 1979/80 - 1983/84

	1979/80	1980/81	1981/82	1982/83	1983/84	Five Year average
			£ per farm			
NET FARM INCOME(ii)	12326	13355	18433	20088	7577	14356
Add: Imputed items(iii)	3494	4169	4787	5975	6947	5074
NET PROFIT BEFORE INTEREST	15820	17524	23220	26063	14524	19430
Less: Interest charges	5234	6942	7322	7555	8076	7026
NET PROFIT AFTER INTEREST	10586	10582	15898	18508	6448	12404
Add: Depreciation	3624	4915	5286	5622	6140	5117
Less: Valuation increase	7872	3994	8991	7173	2626	6131
TRADING NET FUND FLOW (A)	6338	11503	12193	16957	9962	11390
Net Capital Expenditure						
- Machinery	5374	4161	6106	6587	7859	6017
- Improvements	2416	9701	1044	3488	3560	4042
- Land	2107	3044	2602	5293	2892	3187
- Misc. Assets	20	41	26	37	34	32
CAPITAL NET FUND FLOW (B)	9917	16947	9778	15405	14345	13278
TRADING AND CAPITAL FUND FLOW (A-B)	- 3579	- 5444	2415	1552	- 4383	- 1888
Less: Private drawings	7451	8111	9740	10760	10523	9317
FARM NET FUND FLOW	- 11030	- 13555	- 7325	- 9208	- 14906	- 11205
Add: Private funds introduced	1962	808	5870	1475	877	2199
TOTAL NET FUND FLOW	- 9068	- 12747	- 1455	- 7733	- 14029	- 9006
Changes in External Credit (increase + decrease -)						
Long term loans: AMC	- 101	- 108	6296	- 132	- 2878	615
Bank	1388	7016	- 3722	2285	3981	2190
Other	- 164	1780	733	- 304	2450	899
Short term loans:						
Bank overdraft	6932	4876	- 2055	6660	5193	4321
Other	630	87	2200	625	3443	1397
Add: Decrease in Liquid Assets (-increase)	383	- 904	- 1997	- 1401	1840	- 416
NET CHANGE IN EXTERNAL CREDIT (loans)	+ 9068	+ 12747	+ 1455	+ 7733	+ 14029	+ 9006

(i) Based on 1979/80 interest charges greater than £1,000 per farm
(ii) Includes BLSA (Breeding Livestock Stock Appreciation)
(iii) Rental value, value of unpaid labour

Table A 15 Low Interest Farms - Assets & Liabilities 1979/80-1983/84 (i)

(24 Farms)

	Opening Balance	Closing Balance			
	1979/80	1980/81	1981/82	1982/83	1983/84
Size of Farm	49.6	50.5	52.1	51.7	52.1
Tenanted Area %	37.8	37.4	37.9	47.5	47.1
ASSETS		£ per farm			
Land & Buildings	90848	101119	108860	111894	102508	113328
Tenant Improvements	3297	3377	4977	5510	7551	7792
Other Tenants Assets	504	559	644	648	731	733
Machinery	17408	21218	23448	22913	23908	24951
Breeding livestock	25027	26172	27472	32749	37541	38217
Trading livestock	5607	6218	7600	8093	8169	8070
Crops cultivations	1417	1753	2220	2156	2711	2652
Consumable Stores	2106	2634	2755	3059	3145	3480
Debtors	4795	5556	5369	6592	7465	7279
Bank Credit balance	3614	3889	3740	3257	2985	2742
TOTAL ASSETS	154623	172995	187085	196871	196714	209244
LIABILITIES						
AMC	0	0	0	0	0	0
Building Soc. loan	13	0	0	0	0	0
Bank Term loan	888	215	0	183	146	101
Other Long Term loans	742	723	825	825	1524	1328
Hire Purchase	131	221	338	205	389	430
Creditors	3762	4128	3764	3933	6403	6571
Bank Overdraft	1683	1402	2770	2738	3234	6171
Other Short Term loans	42	50	323	370	126	244
TOTAL EXTERNAL LIABILITIES	7261	6739	8020	8254	11822	14845
NET WORTH	147362	166256	179065	188617	184892	194399
TOTAL LIABILITIES	154623	172995	187085	196871	196714	209244
Revaluation (i) of Assets						
Land & O/occ. Buildings	-	9353	1559	538	3247	5756
Buildings (Tenant Farms)	-	613	1420	682	- 477	203
Machinery	-	2886	2371	470	564	635
Net funds introduced	-	81	1763	- 2039	- 1729	2486
Land ownership transferred					13417	

(i) These include effects of periodic revaluation

Table A 16 High Interest Farms - Assets(i) & Liabilities 1979/80-1983/84

(22 Farms)

	Opening Balance	Closing Balance			
	1979/80	1980/81	1981/82	1982/83	1983/84
Size of Farm	57.8	57.7	60.1	63.2	65.9
Tenanted Area %	29.2	28.9	27.5	30.8	31.4
ASSETS		£ per farm			
Land & Buildings	116138	134943	156153	160790	179000	198217
Tenants Improvements	3062	3766	5377	5951	5455	5595
Other Tenants Assets	77	97	198	224	262	296
Machinery	20059	25633	27856	29836	31859	34792
Breeding livestock	27813	31523	36179	43520	48143	49758
Trading livestock	8042	10208	10145	11596	12870	12166
Crops cultivations	2175	2545	2949	3882	4713	5658
Consumable Stores	2143	3770	3974	3740	4185	5381
Debtors	6052	5900	6527	8421	10008	8131
Bank Credit balances	354	124	385	488	301	337
TOTAL ASSETS	185916	218509	249743	268448	296796	320331
LIABILITIES						
AMC	15724	15623	15515	21812	21679	18801
Building Soc.	0	180	202	1276	1001	877
Bank Term loans	5645	7033	14758	11036	13322	17303
Other Long Term loans	3934	3589	5347	5006	4977	7550
Hire Purchase	1003	677	921	1080	1221	2379
Creditors	5904	6722	6764	8497	8744	10397
Bank Overdraft	7833	14815	19007	16952	23612	28805
Other Short Term loans	59	196	46	353	590	1221
TOTAL EXTERNAL LIABILITIES	40152	48835	62560	66012	75146	87333
NET WORTH	145764	169674	187183	202436	221650	232998
TOTAL LIABILITIES	185916	218509	249743	268448	296796	320331
Revaluation of Assets						
Land & O/occ. Building	-	13240	6867	0	7851	11088
Improvements (Tenant Farms)	-	575	1280	765	- 449	178
Machinery	-	2904	2692	707	879	614
Net funds introduced	-	1962	808	5870	1475	878

(i) These include effects of periodic revaluation

Table A 17 Low and High Interest Farms - Summary of Assets(i) and Liabilities in 1983/84 and change since 1979/80

	Low Interest Farms			High Interest Farms		
	1983/84		% Change 1979/80 -1983/84	1983/84		% Change 1979/80 -1983/84
	Total	%		Total	%	
No of farms	24	-	-	22	-	-
Size of farm hectares	52.1	-	5	65.9	-	14
Tenanted Area %	47.1	-	25	31.4	-	8
	£			£		
Land & Buildings	121853	58	29	204108	64	71
Machinery	24951	12	43	34792	11	73
Livestock	46287	22	51	61924	19	73
Crops & Stores	6132	3	107	11039	3	156
Debtors	7279	4	52	8131	3	34
Credit Bank Balance	2742	1	- 24	337	-	- 5
TOTAL ASSETS (A)	209244	100	35	320331	100	72
AMC & Private loans	1328	1	76	27228	9	39
Bank loans & overdraft	6272	3	144	46108	14	241
HP & Short Term loans	674	-	290	3600	1	239
Creditors	6571	3	75	10397	3	76
TOTAL EXTERNAL LOANS (B)	14845	7	104	87333	27	118
NET WORTH (A-B)	194399	93	32	232998	73	60
TOTAL LIABILITIES	209244	100	35	320331	100	72

(i) These include effects of periodic revaluation

Table A 18 High and Low Interest Farms : Balance Sheet percentage ratios(i) in 1979/80 & 1983/84

Ratio (as percentage)	'Low interest' farms		'High interest' farms	
	1979/80 Opening	1983/84 Closing	1979/80 Opening	1983/84 Closing
OWNER EQUITY -				
Net Worth / Total Assets x 100	95	93	78	73
GEARING -				
(1) Long Term loans / Net Worth x 100	1	1	17	19
(ii)(2) Total Loans / Net Worth x 100	4	8	28	38
FIXED ASSETS -				
Fixed Assets / Total Assets x 100	89	88	90	90
CURRENT -				
Current Assets / Current Liabilities x 100	312	181	126	74
LIQUIDITY -				
Liquid Assets / Current Liabilities x 100	150	75	53	20

(i) Including revaluation
(ii) An extended measure of gearing which includes short term loans

APPENDIX B

The relationship between net farm income, profit and fund flow

Since measured Net Farm Income does not necessarily move in line with the cash generating potential of the farm business, certain adjustments must be made to it in order to determine the net effect on cash flow over a given period. The procedure by which net farm income is progressively adjusted to produce the trading net Fund flow is not necessarily the only system which could have been used, but was adopted as an orderly and logical approach and, furthermore, conforms with established practice.[1] (The method is expressed diagrammatically opposite.) It should be noted that the interest charges relate to all interest including that charged on long-term loans associated with land purchase and schemes to improve buildings.

The first stage involves the conversion of net farm income to net profit by adding back the imputed charges, which comprise the value of unpaid manual work of family members and the rental value of owner-occupied land and buildings. Net profit has been shown both before and after interest.

The second stage encompasses the adjustments made to net profit to arrive at the Trading Fund Flow, which represents the flow of funds resulting fromthe trading activities of the farm. The annual charge for depreciation does not involve a fund flow and so must be added back to net profit. Finally the effect of any change in the valuation of live and deadstock must be removed. An increase in valuation, for example, would produce a corresponding increase in net farm income but since the value of these assets had not been realised it would not affect the actual inflow of funds. The figure thus determined is termed the Trading Net Fund Flow.

Two further major fund flows can be identified and the relationship between the Trading Net Fund Flow (including all interest charges), the

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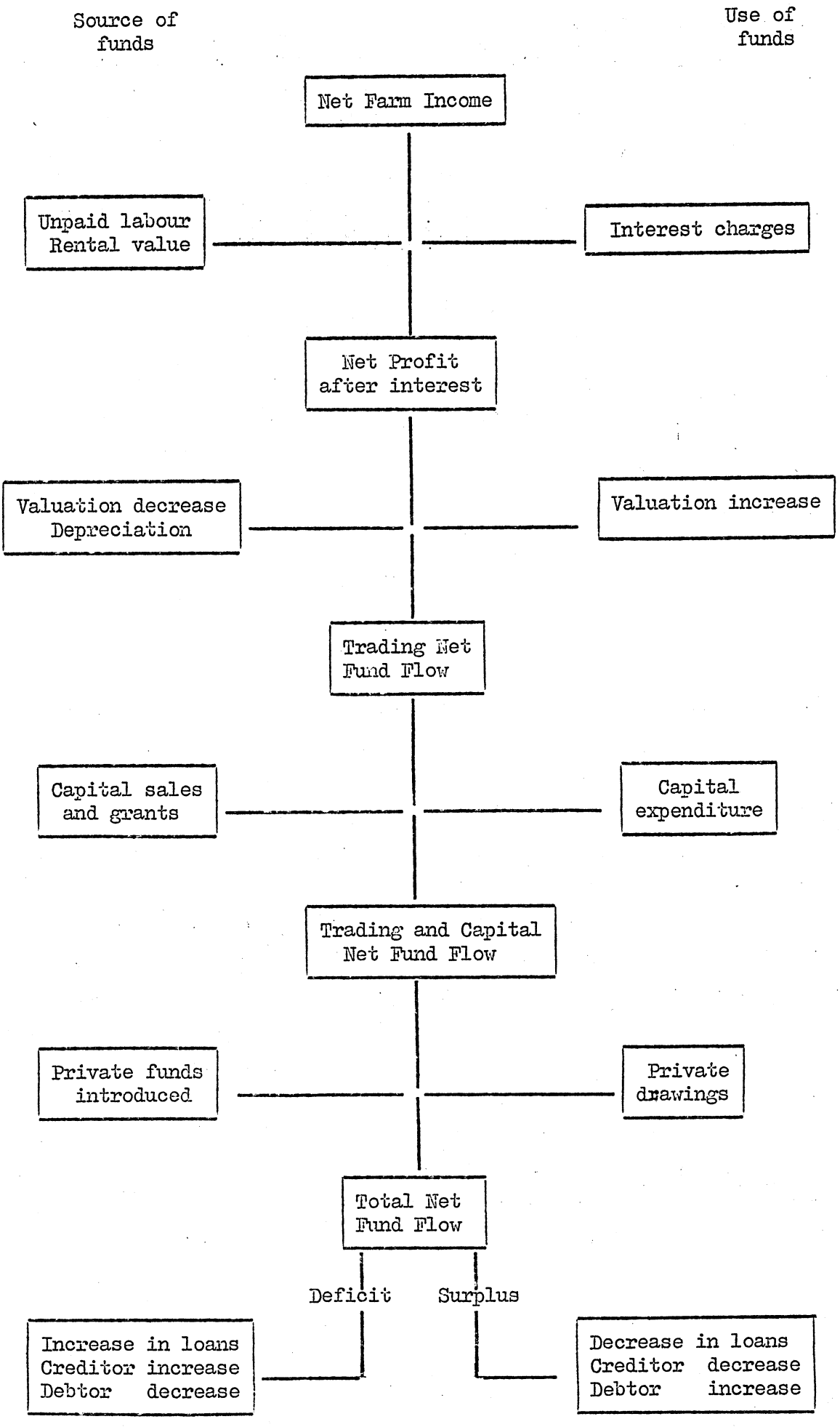
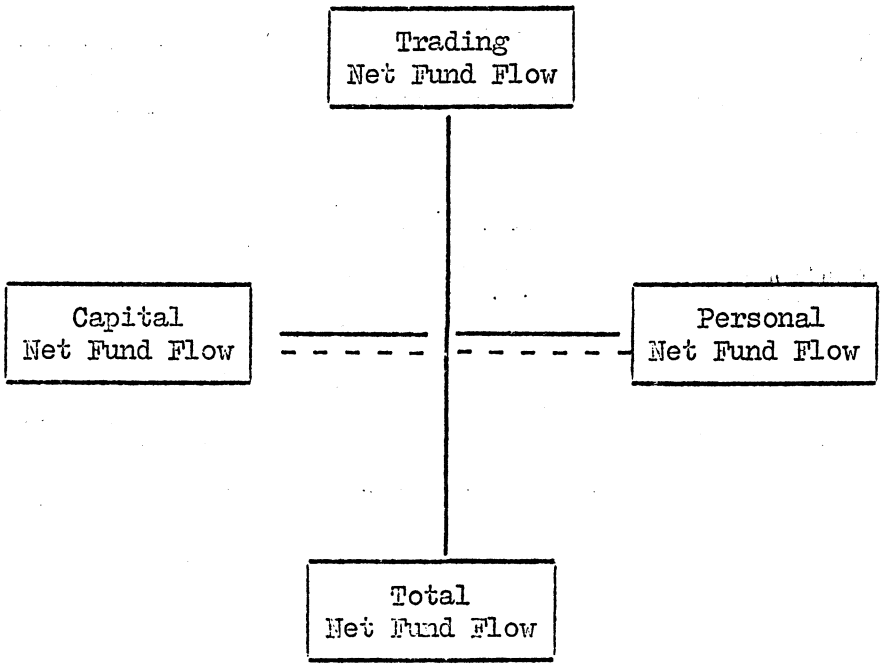
1 See Definitions of Terms used in Agricultural Business Management, 2nd edition, December 1977, Ministry of Agriculture Fisheries and Food


Source of funds
Use of funds
Net Farm Income
Unpaid labour
Rental value
Interest charges
Net Profit after interest
Valuation decrease
Depreciation
Valuation increase
Trading Net Fund Flow
Capital sales and grants
Capital expenditure
Trading and Capital Net Fund Flow
Private funds introduced
Private drawings
Total Net Fund Flow
Deficit
Surplus
Increase in loans
Creditor increase
Debtor decrease
Decrease in loans
Creditor decrease
Debtor increase

Capital Net Fund Flow (capital expenditure less revenue in the form of sales and grants) and the Personal Net Fund Flow can be summarised as follows:



The Capital Net Fund Flow consists of the expenditure on capital items including machinery, improvements and land, net of both sales and of grants received. In normal circumstances this will give rise to a fund deficit and, when aggregated with the Trading Fund Flow, represents the Total Net Fund Flow attributable to the farm business. The Personal Net Fund Flow includes private drawings as an outflow less any inflow of private funds introduced. The latter comprises both small scale current receipts and larger fund inflows which includes items such as private investments cashed and any legacies received. The residual, after the Personal Net Fund Flow has been included, is termed the Total Net Fund Flow in this report and represents the net change in loans whether of a short or long term nature.

The Total Net Fund Flow thus derived may either be a surplus, which produces a net reduction in borrowing or a net increase in credit balances; or conversely, a deficit in which case, the opposite would apply.

APPENDIX C

Definitions of Terms

1 PHYSICAL

Type of farming - Specialist Dairy: farms which derive more than 75 per cent of their standard farm gross margin from dairying.

Average farm size refers to the utilised agricultural area (UAA) which is the sum of the arable area, permanent pasture, the enclosed rough grazings and the area of permanent crops, and excludes buildings, roads and woodland.

Farm forage area includes arable forage, grassland and rough grazings.

Adjusted forage area is farm forage area less unutilised rough grazings, adjusted for purchases and sales of fodder and keep.

Grazing livestock units - the different categories of grazing livestock have been converted to livestock units by means of the following conversion factors:-

	Grazing livestock units
Dairy cows	1.00
Heifers in calf and cattle over two years	0.80
Cattle 1-2 years	0.60
Cattle 0-12 months	0.40
Lowland ewes	0.12
Upland ewes	0.10
Other sheep (based on the annual averages)	0.12

Labour units are the number of regular workers, including farmer and spouse, employed for the whole year or their equivalent for part-time and casual workers.

2 INCOME AND EXPENDITURE

Livestock enterprise output comprises the total revenue for livestock and livestock products, livestock production grants, produce consumed, and milk and milk products fed on the farm; adjusted for livestock valuation changes and transfers between enterprises; less purchases of livestock and livestock products from outside the farm business. It excludes breeding livestock stock appreciation (BLSA).

Cash crop enterprise output is the total value of the production of the current year's cash crops and excludes the profit or loss on the disposal of the previous years' cash crops.

Miscellaneous revenue includes the domestic portion of the farmhouse rent, rent of cottages used for the farm business, hirework, miscellaneous production grants, excluding livestock production grants, a proportion of any grants on machinery and permanent crops, the profit or loss on the disposal of the previous years' cash crops, the gross output of forage crops and any other sundry item of farm revenue.

Total output is the sum of the livestock and cash crop enterprise outputs plus miscellaneous revenue.

Variable costs are those which can readily be allocated to specific enterprises and which vary directly with the scale of production. They include purchased feed, home-grown cereals fed, veterinary and other livestock costs, seeds (including home-grown), fertilisers, other crop costs (all items adjusted for valuation changes where appropriate), casual labour and contract charges.

Total gross margin is total output less total variable costs.

Fixed inputs are costs which are not easily allocated to enterprises and do not vary materially with minor changes in individual enterprises. They include regular labour, machinery costs, rent and rates and general overheads, all of which are separately defined.

Regular labour comprises paid wages and employer's insurance contributions, payments in kind and salaries of managers, together with unpaid family labour and that of farmer and spouse charged at the appropriate current agricultural rates.

Machinery costs include machinery repairs, fuel and oil, small tools and depreciation calculated on a current cost basis, an overall rate of 15 per cent (diminishing balance) is used.

Rent and rates consists of gross cash rents, imputed rent on the net cost of a tenant's own improvements, and the gross rental value of owner-occupied land, together with rates on farm dwellings less the imputed domestic proportion of the rates applicable to the farmhouse.

General overheads include land maintenance, electricity, water charges, general insurances, office expenses and other miscellaneous expenses.

Total inputs is the sum of variable costs and fixed inputs.

Management and investment income (M & II) is the excess of total output over total inputs and represents the reward for management and a return on tenant's capital. It is shown both including and excluding breeding livestock stock appreciation (BLSA).

Farmer and spouse labour is the estimated value of their manual labour on the farm charged at the appropriate current rate.

Net farm income (NFI) is management and investment income plus the value of the manual labour of the farmer and spouse. It, therefore, represents the return to the farmer and spouse for their manual and managerial labour and a return on tenant's capital. It is shown both including and excluding breeding livestock stock appreciation (BLSA).

Breeding livestock stock appreciation (BLSA) - represents the change in market prices of breeding cattle, sheep and pigs between the opening and closing valuations.

Tenant's physical assets include the value of livestock (breeding and trading), harvested crops, cultivations and stores, together with the written down value of plant and machinery.

Net surplus is total revenue plus credits less expenditure and imputed costs in the form of rental value, imputed rent on improvements and unpaid labour. It represents the sum available to meet interest charges, taxation, private drawings and landlord-type investment.

Tenant's capital is the average of the opening and closing valuations of machinery (at current cost), breeding (including BLSA) and trading livestock, other physical assets (such as harvested crops and stores) and liquid assets (such as sundry debtors and cash balances).

Return on tenant's capital is management and investment income (including BLSA) expressed as a percentage of tenant's capital.

3 FUND FLOW

Interest charges include all interest charges on short and long term loans, creditors and hire purchase relating to the farm business.

Net profit after interest is net farm income plus the imputed costs of unpaid labour and rental value, less all farm interest charges but before tax deductions.

Valuation change is the difference between the opening and closing values of tenant's physical assets, excluding machinery.

Trading net fund flow is the net profit after interest adjusted for changes in trading valuations plus depreciation.

Capital net fund flow is the net flow of funds relating to land, buildings, machinery and miscellaneous assets. It includes machinery replacement and property improvements (both net of grants), land purchases (net of sales) and miscellaneous assets such as shares in farming cooperatives.

Trading and capital net fund flow is trading net fund flow less capital net fund flow.

Private drawings include life insurance, tax payments, perquisites and funds withdrawn for personal use.

Farm net fund flow is trading and capital net fund flow less private drawings.

Private funds (introduced or withdrawn) are current receipts of an off-farm nature together with net capital transfers from (or to) off-farm investments.

Total net funds flow is farm net cash flow less (or plus) private funds introduced (withdrawn).

Other long term loans include loans from building societies and other institutions, solicitors and private individuals.

Other short term loans include hire purchase, finance leases, MMB loans, and creditors.

Liquid assets include bank credit balances, farm deposit accounts and debtors.

Net change in external credit includes the changes in long and short term loans and liquid assets.

Net external loans include total long and short term loans less liquid assets.

4 ASSETS & LIABILITIES

Assets include all items owned by the farm business which have a realisable money value and all claims which the business has on others in respect of items with a realisable money value.

Fixed assets are assets which are not used up in the course of a single production cycle and, therefore, cannot be realised without impairing the existing productive capacity of the business. They represent the longer-term investment in the business and include farm property in the form of land, buildings and all improvements thereto, glasshouses, machinery and breeding livestock. Land, buildings, improvements, glasshouses and machinery have been subjected to revaluation procedures to reflect their current value to the business.

Current assets are assets which circulate within the business in the course of the production cycle. They consist of physical working assets and liquid assets.

Physical working assets comprise the raw materials and stock-in-trade of the business normally intended for conversion into cash within one production cycle. They include trading livestock, harvested and growing crops, stocks of livestock products and items of deadstock excluding machinery.

Liquid assets are those which require little or no conversion to generate cash. They include cash balances in hand or at the bank, pre-payments, short-term loans and sundry debtors.

Total assets is the sum of the fixed and current assets of the business.

Liabilities represent the value of claims which the various suppliers of funds to a business have on its assets.

Long term loans consist of loans, mortgages and other debts which, under normal circumstances, are not liable to early recall. Examples include Agricultural Mortgage Corporation mortgages, bank loans and private and family loans.

Current liabilities are claims upon the assets of the business which may have to be met within the span of a normal production or accounting period. They include sundry trade creditors and accrued charges, bank overdrafts and short-term loans.

Total external liabilities is the sum of long-term loans and current liabilities.

Net worth or owner's equity is the residual claim which the owners of a business have against its assets after all external claims against them have been met.

Total liabilities comprise long-term loans, current liabilities and net worth.

Owner equity ratio measures owner equity (net worth) as a percentage of the total assets of the business and, in so doing, measures the extent of the internal funding of the business or, alternatively, the reliance of the business on outside sources of finance. Existing levels of borrowing by the business will clearly be of interest to prospective additional lenders.

Gearing ratio (1) measures the relationship between long-term loans and owner equity as contributory sources to the long-term capital invested in the farm business and is expressed as a percentage with the loan capital as the numerator and owner equity as the denominator.

Farming generally tends to be low-geared (i.e. employs relatively little outside finance) particularly when compared with manufacturing industries. The importance of any increase in this ratio lies in the immediate increase in the prior charges (in the form of interest) which are placed on available income as a consequence.

Gearing ratio (2) is an extending measure of gearing which measures the relationship between total loans and owner equity.

Fixed asset ratio measures the relative importance of fixed assets (the means of production) within the overall asset structure of the business. While fixed assets invariably predominate in farming, it is imperative that the volume of the remaining assets (current assets entering directly into the production process) is sufficient to generate enough income to adequately maintain and reward the capital invested and to recompense the management and manual effort expended in its organisation.

Current ratio expresses current assets as a percentage of current liabilities and measures the amount of cover which is afforded by the current assets of the business to those outstanding claims against the business which may be presented in the shorter term (current liabilities). Normally one will expect current assets to exceed current liabilities in order that the future productive capacity of the business is not threatened by the potential need to liquify any part of its fixed assets to meet short-term claims. What the amount of the excess should be will depend on the nature of the production processes undertaken but, as a general guide, it should be noted that the more prominently do liquid assets (cash and near-cash balances) feature within the total of current assets the narrower can the current ratio safely be.

Liquidity ratio expresses liquid assets as a percentage of current liabilities and measures the extent to which fully liquid assets - cash and near-cash assets - are readily available to meet the more immediate claims which may be made against the business. Normally one would look to the maintenance of parity between current liabilities and liquid assets unless special circumstances (e.g. the granting of bank overdraft facilities) justify a relaxation of this requirement.

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