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COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF
COMMERCE AND
AGRICULTURE

FAT LAMB INDUSTRY SURVEY

1951

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FOREWORD

This report presents the results of an Australia-wide survey of the fat lamb industry carried out by the Bureau of Agricultural Economics during 1951. The information revealed by the survey should be of interest and value to the industry itself and to those concerned with its development.

Perhaps the most significant feature of the report is the detail provided on the complex structure of the industry. Few properties concentrate exclusively on fat lamb production; on 85% of properties fat lambs are raised in conjunction with other farming activities, of which wheat-growing is the most important. As a result, there can be a rapid change towards or away from fat lambs in response to changes in prices ruling for lamb and alternative products.

Diversity is the outstanding characteristic of the industry in this and all other respects. These include farm size, method of management, breeds and physical environment. However, although fat lambs are produced under a wide range of conditions, from the fringe of the pastoral country through the wheat-sheep belt to intensive pasture improvement and irrigation districts, 60% of fat lambs come from properties where some improved pastures have been established. That these properties lie within the regions of Australia which still have the highest potential for increased productivity emphasizes the scope for ultimate expansion of fat lamb production.

The survey was carried out by the Wool Section of the Bureau with the co-operation of the Land Use Sections. Mr. K. O. Davis, Investigating Officer, was responsible for organizing the field work, and, with Mr. H. G. McConnell, Senior Research Officer, for the analysis and presentation of the data. Both these officers were working under the general supervision of Mr. R. B. McMillan, Principal Research Officer of the Wool Section.

Valuable assistance was given by various industry organizations during the progress of the survey. It is particularly desired to acknowledge the help of the Australian Meat Board, and of the State Departments of Agriculture, some of whom seconded officers for field work. The Commonwealth Bank also generously provided field staff and in addition, a substantial amount of the necessary valuation data. Too numerous to mention, but invaluable to the success of the investigation, were the local stock agents and wool firms. Finally, it is desired to thank the farmers concerned for their patient and willing co-operation, without which no such survey would be possible.

T. H. STRONG,
Director.

Canberra,
May, 1953.

AUSTRALIA

50 0 100 200 300
Scale of Miles

MAP I
Areas Covered by the
FAT LAMB INDUSTRY SURVEY

Darwin
Wyndham
Derby
Broome
Port Hedland
Onslow
Carnarvon
Geraldton
Kalgoorlie
Avon Hills
Merredin
Northam
PERTH
Bunbury
Albany
INDIAN
OCEAN
WESTERN
AUSTRALIA
NORTHERN
TERRITORY
Alice Springs
SOUTH
AUSTRALIA
Burnie
HOBART
Pt Lincoln
Pt Augusta
Pt Pirie
Broken Hill
Wilcannia
ADELAIDE
Pinnaroo
Mt Gambier
Coen
Cairns
Townsville
Rockhampton
QUEENSLAND
PACIFIC
OCEAN
Goondiwindi
Dalby
BRISBANE
Warwick
Walgett
Bourke
Inverell
Tamworth
Narromine
Cowra
SYDNEY
CANBERRA
Wagga
Swan Hill
Albury
Horsham
Bendigo
MELBOURNE
Sale
NEW
SOUTH
WALES

Bureau of Agricultural Economics

Drawn by J. O'Halloran

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FAT LAMB INDUSTRY SURVEY

SUMMARY

The Bureau of Agricultural Economics undertook in 1951 a survey of the fat lamb industry, covering the major fat lamb producing areas of the Commonwealth. The survey was designed primarily to obtain details of costs on fat lamb producing properties for the year 1949-50 for the construction of an index of cost movements in the industry, but at the same time information was collected on certain physical aspects of the industry. The effective sample covered by the survey was 200 farms, confined to farms which, in 1949-50, (*a*) sold at least the wether portion of the lamb drop as fats, and (*b*) sold at least 100 fat lambs.

Following is a summary of the main findings of the survey on the physical structure of the industry and its financial results in 1949-50.

STRUCTURE OF THE INDUSTRY

Enterprises Associated with Fat Lamb Production

On the majority of the sample farms (113 of the 200) fat lamb raising and cereal cropping were carried out in conjunction. From these farms came 57.8% of the lambs sold. Most of the remainder were specialist fat lamb farms (30), and farms combining a fat lamb flock with a flock for wool-growing (28); these two groups of farms sold 16.2% and 14.7% respectively of the total lambs sold. Of minor importance were farms where the main associated enterprise was beef production (12), dairying (9), or some other enterprise (8); from these three latter groups came the remaining 11.3% of lambs marketed.

Flock Size

The average number of ewes mated for fat lamb production was 734 per farm. Table No. 1 indicates the range of flock size.

TABLE No. 1.—RANGE OF FLOCK SIZE: SAMPLE FARMS
1949-50

Number of ewes mated.	Number of farms.
0– 200	17
201– 400	58
401– 600	35
601–1,000	46
Over 1,000	44
Total	200

The effective lambing percentage for the whole sample was 77.6%, and the average number of lambs sold in 1949-50, including lambs purchased and fattened, was 662.

Flock Maintenance

Of the 200 sample farms, 146 sold ewes in 1949-50, most of them selling the ewes as fats. Breeding ewes were replaced that year on 149 farms, the purchase of young ewes being the most favoured method of replacement. For the whole sample, wastage from sales and death, and for rations, was balanced by replacements, either purchased or bred on the property; wastage, and thus replacements, represented about one-third of the total number of ewes on hand at 1st July, 1949.

Breeds of Sheep Mated for Fat Lamb Production

Ewes: More than one-third (34.1%) of the total ewes mated were Border Leicester x Merino first cross ewes. Merinos (19.3% of ewes mated), concentrated mainly in the wheat-sheep zone, and Romney Marsh x Merino ewes (16.7%), were the other breeds most commonly used.

Rams: The breeds of rams most favoured for fat lamb production were Border Leicester (mated to 37% of total ewes), Dorset Horn (to 30%), and Southdown (to 19%).

Lambs: The types of lambs produced are indicated by the matings of rams and ewes. Matings of Downs type rams to crossbred type ewes constituted about 50% of total matings. Matings of long-wool rams to crossbred type ewes accounted for 30% of matings. The remaining 20% were to merino ewes, mainly of long-wool rams.

Feeding

On 105 farms, flocks were run on improved pasture for more than four months of the year; from these farms, where improved pasture plays a major part in fat lamb production, came 60% of the total lambs marketed. On the other hand, 84 of the 200 farms ran their flocks on improved pasture for less than two months, and from these came 36% of the lambs marketed.

Although pasture, natural or improved, provided by far the greater part of the feed for fat lamb flocks, other types of grazing—stubble, fallow, growing cash crops and fodder crops—were used to supplement pasture. Where the main pasture was natural, the most important supplementary feeding method was stubble grazing; by contrast, where the main pasture was improved, fodder crops were largely used as a supplement. This contrast resulted from the fact that most "natural pasture" farms were situated in the wheat-sheep zone, while most "improved pasture" farms were in the high-rainfall zone.

Supplementary hand feeding was regularly carried out on 55 of the sample farms. It was far more common on improved pasture farms than on those depending principally on natural pasture.

Marketing

Of the lambs sold in 1949-50, 78% were marketed in the period August-February. The peak selling period in the wheat-sheep zone was September-October, while in the high-rainfall zone it was November-December.

The bulk of lambs sold were between three and a half and six months old. Age at sale appears to have been determined largely by factors other than market requirements.

Lambs from 156 of the 200 sample farms were sold by auction; of these, 124 sold at metropolitan markets, and the other 32 at country selling centres. Of the 160 sample farms which transported their lambs to market, 107 used rail and 53 used motor transport.

Wool Cuts

The sheep shorn from the fat lamb flock were principally breeding ewes with some ewe replacements; they cut an average of 9.5 lb. per head. The average price for the wool sold from these sheep in 1949-50 was 52d. per lb., giving an average return from wool of just over £2 per head.

Trends in Fat Lamb Production

At the time the survey was carried out, early in 1951, farmers indicated that they would tend more to sheep raising and less to wheat-growing in the immediate future; most of the extra sheep would be run for wool rather than for fat lamb production. Their intentions, as stated, would have resulted in an increase of 4% in fat lamb production.

An assessment of the potential fat lamb production from the sample farms indicated scope for an increase of 44% in output from farms at present producing fat lambs. Factors operating at that time which would limit an increase of that order were the availability of labour, materials, and finance, as well as price incentives for the changes involved; of greater importance than these as a limiting factor could well be the availability of additional ewes for fat lamb production.

Regional Characteristics of the Industry

There were no strict regional patterns, with the exception of the general use of improved pastures in high rainfall areas and of natural pastures in the wheat-sheep and pastoral areas, and the concentration of merino ewes in the inland fringes of the fat lamb belt. Broad fat lamb regions of south-eastern Australia have been defined on the basis of breed of fat lamb mothers and type of pasture on which they were grazed; but when account was taken of other factors, such as the type of associated enterprise, there were marked differences between individual farms in each region.

FINANCIAL RESULTS

The results presented here relate to the financial year 1949-50 and inevitably reflect the influence of prices and costs in that year.

Capitalization

The average computed capitalization of the sample farms was £19,416. There was a wide range of values for individual farms; only half the farms fell within the range between £5,000 and £15,000. Land and improvements comprised, on the average, nearly 80% of total capitalization.

Returns

Gross returns in 1949-50 averaged £6,475 per farm, although more than half the sample farms had returns under £5,000. Just over half the gross returns came from the fat lamb enterprise; 56.6% of fat lamb enterprise returns came from the sale of wool, and only 43.4% from the sale of fat lambs.

Costs

Costs (here taken as all costs except interest and an allowance for the operator's labour and management) averaged £2,993 per farm. On individual farms, costs ranged from less than £1,000 to more than £23,000; for half of the farms the range was between £1,000 and £3,000.

Income

Average farm income (returns less costs) was £3,482, ranging from a deficit of £664 to an income of £15,893; five farms showed a deficit and two-thirds of the farms had incomes under £4,000.

If allowance is made for interest on the computed capital investment at the rate of 4½% (the bank overdraft rate in 1949-50), the average labour and management income was £2,608; on one-fifth of the farms labour and management income failed to reach £600.

Return to Capital

The average rate of return on the computed capital, after allowing £600 for the operator's labour and management, was 14.8%. The corresponding rate of return on the 1949-50 market value of the investment would have been decidedly below this figure, as the computed capitalization was based on conservative long-term values.

Of the farms which failed to give a labour and management income of £600, or alternatively, failed to show a return of 4½% on computed capitalization, almost two-thirds were below 700 acres in area; in this size group almost as many farms "failed" as "succeeded".

Table No. 2 summarizes the financial analysis of the sample farms in terms of the enterprise associated with fat lamb production. In all cases the figures for individual farms cover a wide range. (*See* Appendix III.)

TABLE No. 2.—FINANCIAL SUMMARY: SAMPLE FARMS
(Group Averages)
1949–50

Farm group.	Computed capitalization.	Return.	Costs.	Net farm income.	Labour and management income.	Rate of return to capital.
	£	£	£	£	£	%
Fat lamb - cereal cropping ..	19,849	7,742	3,547	4,195	3,301	18.1
Specialist producer	14,502	4,204	1,740	2,464	1,812	12.9
Fat lamb-wool ..	26,611	6,760	3,068	3,692	2,495	11.6
Fat lamb-beef ..	19,507	4,019	2,202	1,817	939	6.2
Fat lamb-"other"	17,669	4,419	2,809	1,610	815	5.7
Fat lamb-dairying.	9,417	2,338	1,201	1,137	713	4.7
All farms ..	19,416	6,475	2,993	3,482	2,608	14.8

CONCLUSIONS

The survey points to the following conclusions:—

The outstanding characteristic of the fat lamb industry is diversity—diversity in other enterprises associated with it, in almost all aspects of farm management, and in all measures of financial performance.

Although many other forms of primary production are associated with the fat lamb industry, its chief strength lies in the complementary nature of fat lamb raising and wheat growing.

As a result, the well-being of the industry depends on satisfactory returns for wheat as well as on satisfactory prices for meat and wool.

There are a large number of small farms in the industry which can only give an adequate income with a high standard of efficiency, even when prices are favorable.

There is considerable scope for increased production on existing fat lamb farms, but a limiting factor, which would become more important as production increased, would be the availability of ewes.

Follow-up surveys would be necessary before the detailed characteristics of the industry, as they vary from district to district, could be clearly defined.

SECTION I
INTRODUCTION

Although Australia runs more sheep than any other country in the world, the production of lamb and mutton has not been in keeping, by world standards, with the size of her sheep flocks. Particularly is this the case for lamb production, as it was not until 1931-32 that the number of lambs slaughtered exceeded five million. For the next twelve years there was a fairly steady increase in production which reached a peak in 1942-43, when nearly 12 million lambs were slaughtered. Due largely to the increase in demand for meat during the war period, slaughterings in each of the years 1940-41 to 1944-45 exceeded ten million. The drought of 1944-45 caused production to drop to just over six million in 1945-46 and it was not till 1949-50 that it again approached the ten million mark. The decrease in slaughterings in the next two years was of a temporary nature due mainly to extremely high wool prices which caused more lambs to be retained on farms for wool-growing. With the fall in wool prices and with Australian sheep numbers once more around 120 million the number of lambs slaughtered in 1952-53 again approached ten million.

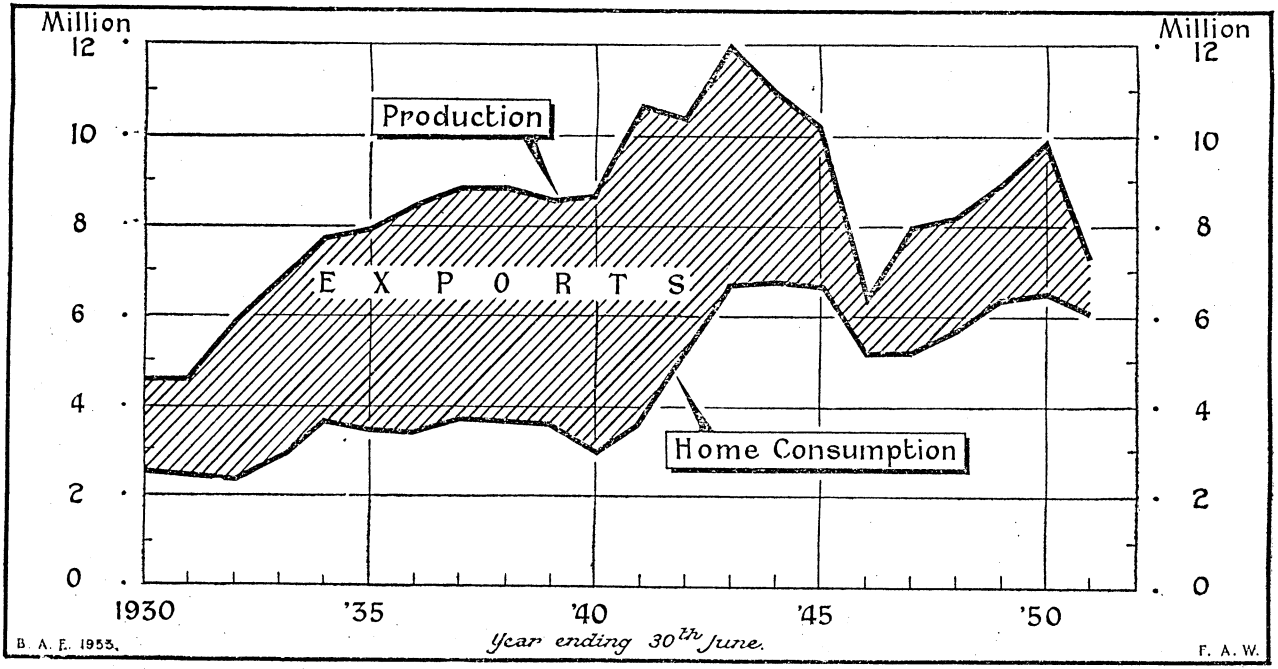
Over the last twenty years consumption of lamb in Australia has gone through two distinct phases. Prior to the 1941-42 season the number of lambs slaughtered for home consumption had ranged from just over 2¼ million to about 3½ million. In the next two years, however, the number increased to over 6½ million, and for the past ten years has averaged over six million. Although the sudden rise was due to the needs of the services, an increased civilian demand for lamb in past years has maintained local consumption at the high level of the war years. With an increasing population it is likely that home consumption of lamb will rise rather than fall in the future.

In the pre-war period, when production was increasing and home consumption remaining comparatively stable, the export of lambs increased from just over two million carcases in 1929-30 to seven million in 1940-41. Since then, due first to increased home consumption and then to lower production after the drought, exports fell to just over one million in 1945-46, and have averaged under two million for the last seven years. (*See* Table No. 3 and Graph I.)

During and since the war years almost all lamb exported has been to the United Kingdom under a bulk purchase agreement, and in October, 1950, it was announced that, by and large, this system was to continue. However, in order to avoid deadlocks in price negotiations between the Australian Government and the U.K. Ministry of Food under the new agreement, it was decided that an attempt be made to establish a mutually satisfactory procedure for arriving at year-by-year changes in meat contract prices; this procedure was to be based on movements in costs of producing meat. To provide basic data for the annual adjustment of lamb prices, therefore, the Bureau of Agricultural Economics was requested by the Federal Government to make a survey of the fat lamb industry.

The survey provided a welcome opportunity for assembling factual data on the structure of the fat lamb industry, about which relatively little information had previously been available. It is well known that in

GRAPH 1.—PRODUCTION, HOME CONSUMPTION AND EXPORTS OF LAMBS: AUSTRALIA
1929-30 TO 1950-51.



different areas fat lamb raising is carried on under widely differing conditions; also that fat lamb production is associated with a number of other farm enterprises. The relative importance of these other enterprises as associated with lamb raising, however, was to a considerable extent unknown, as quantitative details of production methods were lacking.

The aims of the survey thus became—

(1) to obtain data of costs and cost movements on fat lamb producing properties;

(2) to study the economic structure and regional characteristics of the industry.

The survey was carried out during 1951 and covered all the major fat lamb producing areas of Australia. The general approach was to survey a representative sample of farms which sold fat lambs in 1949-50, and an effective sample of 200 farms for the whole of Australia was decided on. This coverage was not as wide as would have been desirable had unlimited time been available, but there was a time limit after which the data would have been too late for use in the price negotiations. Nevertheless, the sampling methods were chosen to make the sample as representative of the industry as these limits permitted, and this report, based on the 200 farms, may be taken as presenting a broad outline of fat lamb production in Australia in 1949-50.

TABLE No. 3.—PRODUCTION OF FAT LAMBS: AUSTRALIA
1929-30 to 1950-51

Year.	Slaughterings.	Home consumption.	Exports.
	'000.	'000.	'000.
1929-30	4,612	2,492	2,120
1930-31	4,582	2,379	2,203
1931-32	5,758	2,319	3,439
1932-33	6,753	2,824	3,929
1933-34	7,649	3,625	4,024
1934-35	7,851	3,468	4,383
1935-36	8,244	3,361	4,883
1936-37	8,792	3,651	5,141
1937-38	8,804	3,609	5,195
1938-39	8,483	3,524	4,959
1939-40	8,589	2,930	5,659
1940-41	10,657	3,603	7,054
1941-42	10,302	5,125	5,177
1942-43	11,942	6,634	5,308
1943-44	10,890	6,727	4,163
1944-45	10,110	6,629	3,481
1945-46	6,298	5,101	1,197
1946-47	7,938	5,136	2,802
1947-48	8,174	5,629	2,545
1948-49	8,890	6,353	2,254
1949-50	9,842	6,485	3,357
1950-51	7,240	6,003	1,237
1951-52	6,885	6,243	642

Sources: Slaughterings—Commonwealth Bureau of Census and Statistics.
Exports—1936-37 to 1947-48—Australian Meat Board.
1929-30 to 1935-36 and 1948-49 to 1951-52—Calculated from Australian Meat Board figures.

SECTION II
SURVEY AREA

The fat lamb producing area of Australia extends from the Darling Downs in Queensland to Eyre's Peninsula in South Australia, running back from the coast to the far edge of the wheat belt—in New South Wales even extending into the pastoral zone. The area also includes a large part of Tasmania and the south-west corner of Western Australia.

The survey covered most of this area, the only parts not visited being where fat lamb production was of such a minor nature that the district did not merit representation on a sample of 200 farms. Districts in this latter category were the coastal districts of New South Wales, the marginal wheat areas of South Australia, and the extreme northern and southern portions of the fat lamb producing area of Western Australia.

The areas covered by the survey are shown in Map I. (*see* frontispiece). Within these areas there are such wide differences of climate, topography, soils and vegetation that no brief description of the survey area is possible. For example, annual average rainfall ranges from 12″ to 14″ in the Mallee, up to 40″ in southern Gippsland and northern Tasmania, with areas in both New South Wales and South Australia having an average of more than 35″. Nor are differences in rainfall confined to the amount received, as the seasonal incidence varies from the winter rainfall of the Western Australian fat lamb areas to the summer rainfall of the Darling Downs in Queensland and of northern New South Wales. Similarly, soils range from the sands of the Mallee to the rich volcanic soils of the Western District of Victoria.

SECTION III

SURVEY METHOD

SAMPLING

There are probably about 20,000 fat lamb producers in Australia. However, as the available statistics make no differentiation between sheep for meat and sheep for wool, and thus do not record fat lamb producers separately, the sample could not be selected in the normal way—that is, from a full list of producers in the fat lamb industry.

The sample was therefore obtained in the following manner. First, the survey sample of 200 farms was allocated among the States on the basis of lamb production in each State. Quotas for Western Australia, Queensland and Tasmania were based on lamb slaughterings in those States as a proportion of the Australian total. For South Australia the same principle was used except that 123,000 was added to the South Australian slaughtering figure and subtracted from that of Victoria. (This was the number of lambs estimated to have been produced in South Australia but slaughtered in Victoria.) The same method could not be used to determine the quotas for New South Wales and Victoria as there is insufficient information about the number of lambs produced in one State and slaughtered in the other. Accordingly the total of lambs slaughtered in the two States was used to calculate the quota for New South Wales and Victoria combined, and this quota was allocated between the two States in proportion to the number of ewes mated to British breed rams in each State for the 1949 lambing season.

Quotas for the six States thus established were—

New South Wales	82
Victoria	75
South Australia	26
Western Australia	10
Tasmania	5
Queensland	2

To give a more representative State picture in Queensland and Tasmania, the sample was built up to a minimum of ten in each of these States, but the results were readjusted to the given weightings for purposes of analysis. The addition of extra farms in these two States brought the number of sample farms to 213. The locations of these 213 farms are shown on Map II.

Within each State the sample was allocated to local statistical areas. This allocation was based on the figures of ewes mated to British breed rams for the 1949 lambing. In New South Wales a loading of 50% of ewes mated to Corriedale and Polwarth rams was made in two particular areas, and in Victoria there was a loading of 10% of ewes mated to Merino, Corriedale and Polwarth rams over the whole State. These adjustments were made on the technical advice of officers of the respective State Departments of Agriculture.

State officers also assisted in a grouping of the statistical units into workable survey areas, each area being reasonably uniform within itself from the point of view of the type of fat lamb production carried on.

AUSTRALIA

50 0 100 200 300
Scale of Miles

MAP II
FAT LAMB INDUSTRY SURVEY
Location of Sample Farms

Darwin
Wyndham
Coen
Cairns
Townsville
Rockhampton
Derby
Broome
Port Hedland
Onslow
Carnarvon
Geraldton
Wongan Hills
Kalgoorlie
Merredin
Northam
PERTH
Bunbury
Albany
Burnie
HOBART
Pt Lincoln
Pt Augusta
Pt Pirie
Mildura
ADELAIDE
Hay
Pinnaroo
Mt Gambier
Horsham
Ballarat
Wagga
Albury
Bendigo
MELBOURNE
Sale
Goondiwindi
Dalby
BRISBANE
Warwick
Walgett
Bourke
Inverell
Broken Hill
Tamworth
Narromine
Cowra
SYDNEY
CANBERRA

NORTHERN TERRITORY
Alice Springs
WESTERN AUSTRALIA
SOUTH AUSTRALIA
QUEENSLAND
NEW SOUTH WALES
VICTORIA
TAS

INDIAN OCEAN
PACIFIC OCEAN

Bureau of Agricultural Economics

Drawn by J. O'Halloran

Within these survey areas the quotas for each statistical unit were combined and the sample for the survey area was drawn by random methods from lists of farmers within the area known to have sold at least 100 fat lambs in 1949-50.(1) An appropriate number of replacements for each area was also drawn for use if necessary.

Details of the survey areas in each State and their sample quotas are given in Appendix I.

FIELD PROCEDURE AND RESPONSE

Farmers drawn in the sample were interviewed by field teams, each consisting of two officers. Information was obtained from the farmers themselves and, where necessary, authority was sought from them to secure additional data from their accountants and their wool and live-stock selling agents.

To obtain the sample number of 213 farms a total of 490 farms were visited, and in only 38 cases was the owner unwilling to co-operate. In all, 252 replacements in the original sample were made for the following reasons:—

	Farms.
(i) Farm changed ownership since July, 1949(a) ..	18
(ii) Less than 100 lambs sold in 1949-50(a)	76
(iii) Insufficient records	42
(iv) Owner unwilling to co-operate	38
(v) Owner ill or absent	69
(vi) Other(b)	9
Total	252

(a) Excluded by definition. (b) Inaccessible through bad roads, &c.

In all, 257 questionnaires or 44 more than the required 213 were completed, an additional farm in each survey area being covered wherever possible, as a precaution against the data in any questionnaire proving inadequate on analysis. Use of these reserves proved necessary in 19 cases and these 19 have been included in the list above in class (iii).

ANALYSIS OF DATA

The financial structure of the industry, covering farm capitalization, costs and returns, and the profits or losses resulting from stock trading, was calculated by methods described in Appendix II.

The physical structure of the industry is discussed in terms of such factors as flock size, breeds of sheep, associated enterprises, &c. As it was thought that the primary cause of differences in the husbandry practices on farms would be environmental, farms were first classified as "high-rainfall", "wheat-sheep" or "irrigation" farms. The boundaries between the wheat-sheep zone and the pastoral and high rainfall zones had been

(1) Frequently, fat lamb raising is only a small sideline and the segment of the industry represented by farms selling less than 100 fat lambs was excluded from consideration in this survey, as it was held that, for determining the cost structure of fat lamb producing farms, costs on farms with such a small production would not be representative of the industry as a whole.

defined by the Bureau previously for other purposes to conform with the boundaries of statistical areas. These boundaries are shown on Map III. For the purpose of this survey the boundaries between the pastoral and wheat-sheep zones have been disregarded because the few fat lamb properties in the pastoral zone were close to the zonal boundary. Further, certain minor changes in the boundary of the high rainfall zone were made in cases where the survey showed that the statistical boundary did not accurately represent the natural boundary between the types of fat lamb enterprise.

The first stage of the analysis was to classify the sample farms by zones and by zones within States. This is shown in Table No. 4.

TABLE No. 4.—SAMPLE FARMS: ZONES AND STATES

State.	Sample farms in:		
	High rainfall zone.	Wheat-sheep zone.	Irrigation zone.
	No.	No.	No.
New South Wales	25	52	5
Victoria	38	25	12
South Australia	14	12	..
Western Australia	4	6	..
Tasmania	5	..	..
Queensland	..	2	..
Total	86	97	17

This classification has been used throughout the report in discussing the various aspects of the industry. However, on the basis of financial results, it was found that the environmental factor was of far less significance than were the enterprises with which fat lamb production was associated. Accordingly, in the section of the report dealing with financial returns, the sample farms have been grouped together according to the main enterprise associated with fat lamb production, and the analysis made in terms of these groups.

AUSTRALIA

50 0 100 200 300
Scale of Miles

SHEEP & WOOL PRODUCTION ZONES
As defined by the B.A.E.

MAP III
Wheat-Sheep Zone.....
High Rainfall Zone.....
Pastoral Zone.....

INDIAN OCEAN

PACIFIC OCEAN

Darwin
Wyndham
Broome
Derby
Port Hedland
Onslow
Carnarvon
Geraldton
Wongan Hills
Merredin
Northam
Kalgoorlie
PERTH
Bunbury
Albany

NORTHERN TERRITORY
Alice Springs

WESTERN AUSTRALIA

SOUTH AUSTRALIA

Coen
Cairns
Townsville
Rockhampton
Dalby
BRISBANE
Goondiwindi
Warwick
Walgett
Bourke
Inverell
Tamworth
Broken Hill
Pt Augusta
Pt Pirie
Narromine
Mildura
Hay
Cowra
SYDNEY
ADELAIDE
Pinnaroo
Swan Hill
Wagga
CANBERRA
Horsham
Albury
Bendigo
Mt Gambier
MELBOURNE
Sale
Pt Lincoln

TASMANIA
Burnie
HOBART

QUEENSLAND

NEW SOUTH WALES

VICTORIA

Bureau of Agricultural Economics

Drawn by J. O'Halloran

SECTION IV
STRUCTURE OF THE INDUSTRY

ASSOCIATED ENTERPRISES AND DEGREE OF SPECIALIZATION.

Fat lamb production is seldom the sole enterprise on a farm. It is undertaken most often in conjunction with other types of farm enterprise, either as the principal business of the farm or supplementary to another enterprise. The association of fat lamb production with other enterprises arises from considerations of more efficient land use, and the desire of farmers to spread their resources and thus obtain income from a wider range of products; this occurs even in the lower rainfall areas, where fewer forms of agricultural production are possible.

Of the 200 sample farms in the survey, 30 were fat lamb "specialists" in that the land use was directed exclusively towards the production of fat lambs. Some of these 30 farms did receive returns from such items as the sale of milkers' calves or from grain or hay harvested from fodder crops sown, but not needed, for sheep feed, but such returns were merely incidental to returns from fat lamb production. On all the other 170 farms, fat lamb production was associated with one or more other enterprises. The diversity of these associated enterprises and the frequency with which they occurred on the sample farms is shown in Table No. 5. This table lists all the associated enterprises, and gives the number of farms in the sample of 200 which received returns from each during 1949-50.

TABLE No. 5.—OTHER ENTERPRISES ASSOCIATED WITH FAT LAMB PRODUCTION: SAMPLE FARMS
1949–50

Associated enterprise.	Number of sample farms on which enterprise occurred.
Cereal cropping (*a*)	129
Wool-growing (*b*)	65
Beef production (*c*)	104
Dairying	30
Other (*d*)	43

(*a*) Production of hay, grain and—in a few cases—crops such as linseed and lucerne hay.

(*b*) This covers sheep other than those of the fat lamb flock. Wool from the fat lamb flock was regarded as a part of the fat lamb enterprise.

(*c*) Where no dairy products were sold, returns from dairy cattle were included with returns from beef cattle.

(*d*) "Other" include pig-raising and the production of peas, potatoes, honey and eggs.

To show the relative importance of the various enterprises as associates of fat lamb production, the 170 farms which were not specialists were classified in accordance with the main associated enterprise—that is, the one which gave the greatest return in 1949-50. From this classification, which ignores any minor associated enterprises, six groups of farms were obtained. The number of sample farms in each group is shown in Table No. 6.

TABLE No. 6.—SAMPLE FARMS CLASSIFIED BY MAIN ASSOCIATED ENTERPRISE.
1949–50

Farm group.	Number of sample farms.
Fat lamb-cereal cropping	113
Specialist producer	30
Fat lamb-wool	28
Fat lamb-beef	12
Fat lamb-dairying	9
Fat lamb-" other "	8
All farms	200

Table No. 6 classifies farms according to the main associated enterprise, and there are marked differences from the classification in Table No. 5 (page 13), where all associated enterprises, irrespective of their magnitude, were included.

The difference is least with cereal cropping, as 113 of the 129 farms on which cereal cropping occurred are classified as fat lamb-cereal cropping farms. It is greatest with beef production, as only twelve of the 104 farms on which beef production was undertaken are classified as fat lamb-beef farms.

Under these circumstances, an analysis in terms of the main associated enterprise alone must be treated with reservation, as it over-simplifies the picture and does not take all the facts into consideration. It is presented, however, as enabling the clearest description of the make-up of various aspects of the fat lamb industry as disclosed by the survey.

Fat Lamb-Cereal Cropping Farms

Fat lamb-cereal cropping farms comprised more than half the sample. The practice of combining cereal cropping with sheep raising is well established and statistics show that more than one-quarter of the sheep in Australia are run on wheat farms. Fat lamb production is a particularly suitable form of sheep raising for association with cropping. It is usual for the lambs to be carried for only about four months during the slack time in the cropping programme between sowing and harvesting. In addition, fodder crops can be grown for winter feed, while stubbles form a valuable addition to feed for the ewes in the late Summer and Autumn.

While fat lamb-cereal cropping farms were mainly concentrated in the wheat-sheep zone (85 of the 97 farms in that zone were of this type), they comprised more than half of the farms in the irrigation zone (nine out of 17), and were found as far into high rainfall areas as Naracoorte (South Australia) and Hamilton (Victoria).

In 1949-50, of 132,419 lambs sold from sample farms, 76,486 (57.8%) came from fat lamb-cereal cropping farms. This is an average of 677 lambs per farm.

The extent to which the fat lamb enterprise contributed to the income of the farm varied from farm to farm. If the degree of specialization is measured by the percentage of returns in 1949-50 which came from the fat

lamb enterprise, the range in the case of fat lamb-cereal cropping farms was from 11.8% to 91.7%, with 88 of the 113 evenly distributed between 15% and 65%. For all fat lamb-cereal cropping farms in the sample, fat lamb returns averaged 41.8% of total returns.

Specialist Farms

The second largest group of farms was that of the "specialist" producers. The type of husbandry which is aimed solely at the production of fat lambs—with, of course, production of wool from the fat lamb ewes—is normally confined to an environment where the turning off of lambs as fats is assured in practically all years, irrespective of season. This condition applies with irrigation, or in particularly favoured areas of the high rainfall zone. Seven of the 30 specialist producers were in the irrigation zone, and 14 in favoured areas of the high rainfall zone, such as Gippsland and the Ballarat district in Victoria, and in the Midlands of Tasmania. On these 21 farms, production tended to be intensive, and the area of the farm was considerably less than the average of all sample farms.

The remaining nine specialists, however, represented an altogether different type of fat lamb production. Situated in the wheat-sheep zone, and tending more to the marginal wheat areas, the size of these farms was well above the average for the whole sample. Under extensive grazing methods, rather similar to those in the pastoral areas, the production of lambs as fats was dependent on the season. In a favorable season, such as 1949-50, these farms were specialist fat lamb producing farms. In unfavorable seasons, however, all lambs produced might be sold as stores, the ewe portion for breeding and the wethers for fattening in better rainfall areas. Thus, it is probable that, had the survey year been less favorable, these "marginal" specialist producers would not have been included in the sample.

Of the lambs sold from the sample farms in 1949-50, 16.2% came from specialist farms, with an average of 717 lambs per farm. This was the highest average for any of the groups.

Fat Lamb-Wool Farms

The third largest group of farms in the sample was that composed of fat lamb-wool farms. These farms, like the specialist group, were devoted almost solely to sheep raising, but in this case only portion of the flock was run for fat lamb production. The two main circumstances which brought about this enterprise combination were—

(i) Where the topography made only portion of a property suitable for pasture improvement, fat lambs were produced on the improved portion and wool-growers run on the rougher parts of the property. Farms of this type occurred on the South-west Slopes and Tablelands of New South Wales and in the Mansfield-Alexandra district of Victoria.

(ii) Where the main farm enterprise was wool-growing and breeding—with Merinos, Comebacks or Corriedales—and older ewes were joined to British breed rams for fat lamb production. This practice was most common in the Western District of Victoria and in the South-east of South Australia.

Altogether, 26 of the 28 farms in the group were situated in the high rainfall zone.

Lambs sold in 1949-50 from fat lamb-wool farms totalled 19,515, or 14.7% of all lambs sold by the sample farms. The average number per farm was 697, which was little below that of the specialists.

On fat lamb-wool farms, the degree of specialization in fat lamb production ranged from 14.3% to 86.9%, with only 10 of the 28 farms receiving more than 50% of total returns from the fat lamb enterprise. The return from fat lamb production averaged 43.9% for the whole group.

Fat Lamb-Beef Farms

Twelve of the sample farms were fat lamb-beef farms. More than half of these were situated in Victoria close to the ranges—four in Gippsland and four on the western side of the main range. The proximity of these farms to natural cattle-breeding areas is one reason for the combination of enterprises, as cattle for use as top-feeders were readily available.

Fat lambs sold from these farms comprised 5.9% of total lambs sold, averaging 651 lambs per farm.

The degree of specialization in fat lamb production tended to be high on fat lamb-beef farms. On only one farm was beef production the major enterprise; on the other eleven farms returns from the fat lamb enterprise ranged from 72.5% to 96.5% of total returns. For the group, fat lamb returns contributed 81.6% of total returns.

Fat Lamb-Dairying Farms

There were nine fat lamb-dairying farms in the sample. These farms were small, averaging less than 400 acres, and were principally dairy farms on which a fat lamb flock had been introduced. Seven of these farms were in the dairying districts in Victoria, one was in South Australia near Mount Gambier, and the remaining one in Western Australia in the dairying area south of Perth.

The number of lambs sold from these farms in 1949-50 represented only 1.8% of the total lambs sold from sample farms, and averaged only 258 lambs per farm, as against the average of 662 for the whole sample.

Returns from fat lamb production ranged from only 2.6% of total returns on one farm, where the fat lamb enterprise was confined to fattening a small mob of purchased lambs, to more than 90% on two others, where dairying was only a small sideline. For the group as a whole, returns from fat lamb production made up 50.2% of total returns.

Fat Lamb-"Other" Farms

The remaining eight sample farms, classified as fat lamb-"other", were high-rainfall farms where fat lamb production was associated with potato-growing, vegetable-growing (principally peas) or pig-raising. Farm size in the main was small, five of the eight farms being 300 acres or less. The average number of lambs sold from these farms was 596, which was little below that for the whole sample. From this group of farms came 3.6% of the total lambs sold.

The degree of specialization in fat lamb production ranged from 8.1% to 91.6%, with fat lamb returns contributing 52.7% of the total returns for the group.

MINOR ENTERPRISES

So far in this analysis no account has been taken of any enterprises except the fat lamb enterprise and the one main enterprise associated with it on each farm. Table No. 5 (page 13) shows that there were 371 instances of enterprises other than fat lamb production on sample farms. Of these, only 170—the main associated enterprises on farms other than specialist farms—have been considered.

On a number of farms, the type of husbandry covered three enterprises, all of which were important in the farm economy and contributed materially to the farm returns. It was found that, on 23 of the sample farms, returns from each of two enterprises in addition to fat lamb raising were responsible for more than 15% of the farm returns. The enterprises which contributed significantly to the income of individual farms, but which were excluded from the previous analysis, were—

	Farms.
Wool-growing	13
Dairying	5
Cereal cropping	4
Other enterprises	1

This suggests that the importance of both wool-growing and dairying is understated in an analysis in terms of only the main associated enterprise.

A different approach to the question of the associated enterprises is to consider how much each enterprise contributed to the total returns of the whole sample. This is shown in Table No. 7.

TABLE No. 7.—RETURNS FROM ASSOCIATED ENTERPRISES: SAMPLE FARMS 1949–50

Associated enterprise.	Returns as a percentage of returns from all associated enterprises.
	%
Cereal cropping	73.2
Wool-growing	18.2
Beef production	3.5
Dairying	2.6
Other	2.5
Total	100.0

While the price experience of other years would naturally give a somewhat altered result, Table No. 7 does give a fair picture of the relative importance of each enterprise. Almost three-quarters of the income received from the associated enterprises in 1949-50 came from cereal cropping. Next in importance was wool-growing, but it provided less than a quarter of the returns coming from cereal cropping. This, of course, does not include wool produced from the fat lamb flock. Beef production, dairying, and "other" enterprises, while they may have been considerable on a few farms, each contributed only minor amounts to the total returns of the sample farms.

DEGREE OF SPECIALIZATION

With the exception of specialist producers, there was a wide range in the degree of specialization in fat lamb production. Table No. 8 summarizes the position for the whole sample, and also shows the differences for farms in the three zones.

TABLE No. 8.—DEGREE OF SPECIALIZATION BY ZONES: SAMPLE FARMS 1949–50

(Returns from fat lamb production as a percentage of total returns.)

Zone.	Number of farms in each percentage group.					Total farms.	Group average.
	0–20%.	20–40%.	40–60%.	60–80%.	80–100%.		
							%
High rainfall	4	17	17	13	35	86	57.3
Wheat-sheep	17	34	21	12	13	97	42.9
Irrigation ..	1	2	3	3	8	17	68.5
All zones ..	22	53	41	28	56	200	50.3

For the whole sample, half the returns came from the fat lamb enterprise, while 99 of the 200 farms received more than 50% of their returns from fat lamb raising. It would seem, therefore, that the economy of the fat lamb industry, as defined for this survey, was as dependent on returns from associated enterprises as on returns from fat lamb production itself. On individual farms, the degree of specialization ranged from 2.6% to 100%, with a fairly even distribution along the scale.(2)

A comparison of the figures for the three zones shows a much greater tendency for farms in the high rainfall and irrigation zones, than in the wheat-sheep zone, to rely on fat lamb production. This can be seen, not only from the average figures for the zones, but also from the distribution of individual farms.

The most striking fact arising from the analysis of the sample farms by associated enterprise and degree of specialization is the complexity of the fat lamb industry. Even in the limited sample of 200 farms covered by the survey, fat lamb raising was associated with most other important forms of primary production. In addition, the relative importance of fat lamb raising and of its associated forms of primary production covered almost the entire range possible.

Although, as is made even clearer in the financial analysis of the survey results, the factor of associated farm enterprises is of major importance in the structure of the industry, this method of grouping fat lamb farms does not give a particularly clear-cut picture. For this reason, in the more detailed analysis of the physical characteristics of the industry which follows, this factor has been disregarded, and further study of the sample has been concentrated on the fat lamb enterprise, irrespective of its share in the economy of the individual farm or the enterprises associated with it.

(2) Only two farms were below 10%, and in both cases the fat lamb enterprise was confined to fattening a small number of purchased lambs.

FLOCK SIZE

The average number of ewes mated for fat lamb production on the sample farms was 734. There was considerable variation in the figures for individual farms, the number of ewes mated ranging from nil on three farms whose fat lamb enterprise was confined to fattening purchased lambs, to almost 4,000. Average figures for farms in the three zones did not differ greatly but, as Table No. 9 shows, there were considerable differences between figures for the States.

TABLE No. 9.—EWES MATED ON SAMPLE FARMS: BY STATES
1949–50

Flock size (number of ewes mated).	New South Wales.	Victoria.	South Australia.	Queensland, Tasmania and Western Australia.	Australia (total).
0– 200	6	8	3	..	17
201– 400	18	25	11	4	58
401– 600	9	18	5	3	35
601– 1,000	21	14	3	8	46
Over 1,000	28	10	4	2	44
Total number of farms	82	75	26	17	200
Total number of ewes mated	73,672	42,198	17,972	13,015	146,857
Average number of ewes mated per farm ..	898	356	690	766	734

The high proportion of farms in Victoria with small flocks and the much lower average flock size in that State are reflections of the number of low-acreage farms in the Victorian sample. There were contrasting situations in New South Wales and South Australia. In the former, small flocks tended to be concentrated in the high rainfall zone while the larger flocks were found principally in the more extensive holdings of the wheat-sheep zone. In South Australia, however, the reverse was the case—9 of the 12 wheat-sheep zone farms mating fewer than 400 ewes.

The number of lambs produced in 1949-50—that is, natural increase, less deaths, of lambs during the year—from ewes mated averaged 570 per sample farm. This was equivalent to an effective lambing rate of 77.6%. There were variations in the lambing percentages both of States and of zones. These are shown in Table No. 10.

TABLE No. 10.—EFFECTIVE LAMBING PERCENTAGES: BY STATES AND ZONES SAMPLE FARMS
1949–50.

State.	Percentage.	Zone.	Percentage.
New South Wales ..	73.1	High rainfall	84.6
Victoria	84.5		
South Australia	84.1	Wheat-sheep	71.5
Western Australia, Queensland and Tasmania ..	73.8	Irrigation	89.0

Not all lambs produced are sold in the current year. Some may be kept as ewe replacements while a few lambs are often carried over into the next season. The number of "carry over" lambs on sample farms at July 1, 1949, and at June 30, 1950, is shown in Table No. 11.

TABLE No. 11.—LAMBS CARRIED OVER: SAMPLE FARMS

1949–50

State.	Carry-over at July 1, 1949.	Carry-over at June 30, 1950.	Change.
New South Wales	16,341	13,645	— 2,696
Victoria	5,300	5,439	+ 139
South Australia	577	883	+ 306
Western Australia, Queensland and Tasmania	982	1,231	+ 249
Australia	23,200	21,198	— 2,002

While New South Wales showed a decrease over the 1949-50 season, all the other States showed increases. In no case, however, was the change in carry-over of particular significance. Approximately half the 200 sample properties had carry-over lambs.

An additional source of fat lambs is the fattening of purchased lambs. This was undertaken on almost 25% of sample farms, while 18% of lambs sold had been purchased. It is not known definitely whether all lambs purchased during the survey year were sold in that year, but it seems a reasonable assumption that the bulk of them were, any lambs brought forward from the previous year compensating for any remaining unsold at the end of the year.

Table No. 12 shows the lambs purchased for fattening in each zone in relation to the total lambs sold.

TABLE No. 12.—LAMBS PURCHASED FOR FATTENING: BY ZONES: SAMPLE FARMS

1949–50

Zone.	Lambs purchased for fattening.		Total number of lambs sold.	Lambs purchased as percentage of total sold for each zone.
	Farms.	Lambs.		
				%
High rainfall	17	6,590	52,470	12.6
Wheat-sheep	23	15,252	67,816	22.5
Irrigation	8	2,489	12,133	20.5
Total	48	24,331	132,419	18.4

The addition of lambs purchased and fattened to those bred on the farms resulted in an average of 662 lambs per sample farm being sold in 1949-50. Table No. 13 shows the average number of lambs per farm sold in each State, and also gives the distributions into groups of numbers sold from individual farms.

TABLE No. 13.—LAMBS SOLD FROM SAMPLE FARMS: BY STATES

1949–50

Number of lambs sold.	New South Wales.	Victoria.	South Australia.	Queensland, Tasmania and Western Australia.	Australia.
100– 200	8	12	8	1	29
201– 400	20	22	8	6	56
401– 600	15	13	4	3	35
601– 1,000	19	17	2	6	44
Over 1,000	20	11	4	1	36
Total	82	75	26	17	200
Total number of lambs sold	66,547	42,149	14,649	9,074	132,419
Average number of lambs sold per farm ..	812	562	563	534	662

FLOCK MAINTENANCE

An important factor in fat lamb production is the maintenance of numbers of breeding ewes. How numbers are maintained depends largely on the answers to two questions: What policy do producers follow in regard to the sale of ewes, and how are replacements introduced into the breeding flock? An analysis of the sample farms in terms of each of these is given in Tables Nos. 14 and 15.

TABLE No. 14.—EWE SELLING POLICY: SAMPLE FARMS: BY ZONES

1949–50

Zone.	Number of Farms.				
	Selling ewes in 1949–50.			Not selling ewes 1949–50.	Total farms.
	As fats.	As stores.	Total.		
High rainfall ..	49	22	71	15	86
Wheat-sheep ..	37	23	60	37	97
Irrigation ..	6	9	15	2	17
All zones ..	92	54	146	54	200

Of the 200 farms, 146 sold ewes, most of them as fats. There do not appear to be any real differences between zones as to the proportion of ewes sold as fats or stores; probably the most important factor was whether local feed conditions enabled the ewes to be fattened, but most farmers who disposed of ewes tried to sell them as fats. The only exception to this appears to be in the Victorian irrigation zone, where more farms sold ewes as stores than as fats. As a number of these farms were also buying lambs for fattening, it seems probable that they were using their feed for fattening these lambs and selling ewes for further breeding.

Table No. 15 gives an analysis of the sample farms according to the main method of ewe replacement.

TABLE No. 15.—MAIN METHOD OF EWE REPLACEMENT: SAMPLE FARMS: BY ZONES
1949–50

	Zone.			All zones.
	High rainfall.	Wheat-sheep.	Irrigation.	
Farms replacing ewes (1949–50)—				
By breeding	10	15	2	27
By purchasing:				
Weaners	6	9	2	17
1- and 2-year-old ewes ..	30	23	5	58
3- and 4-year-old ewes ..	15	14	3	32
Aged ewes	5	6	..	11
Ewes with lambs at foot ..	..	4	..	4
Total	56	56	10	122
Total farms replacing ewes (1949–50)	66	71	12	149
Farms not replacing ewes (1949–50)	20	26	5	51
Total farms	86	97	17	200

There was a diversity of individual farm policies regarding replacement of ewes, but the general pattern was similar for each zone. Three-quarters of the farms in each zone replaced ewes in 1949-50, and in each zone roughly the same proportion of farms (15% to 20% of those replacing) did so by breeding their own replacements. Those farms which replaced ewes by purchase generally favoured young ewes, particularly one- and two-year olds. In the high rainfall zone, almost half the properties replacing ewes purchased one- and two-year-old ewes as the principal method of replacement. In the wheat-sheep zone, while more properties used this method than any other, there was not the same emphatic preference for it above the others.

The frequency with which the breeding flock is replaced—either totally every few years or a portion each year—varies with the policy of individual fat lamb producers. An analysis of wastage and replacement of ewes

in the fat lamb flocks of the sample farms (*see* Table No. 16) shows the proportion of breeding ewes replaced during 1949-50 and the methods used to obtain replacements.

TABLE No. 16.—WASTAGE AND REPLACEMENT OF BREEDING EWES: SAMPLE FARMS: BY ZONES

1949–50

	Zone.			All zones.
	High rainfall.	Wheat-sheep.	Irrigation.	
	Number of ewes.	Number of ewes.	Number of ewes.	Number of ewes.
Ewes on hand 1.7.49 ..	58,293	87,397	14,143	159,833
Wastage:				
Total sales	13,835	21,882	4,527	40,244
Deaths and rations	3,800	7,129	804	11,733
Total wastage	17,635	29,011	5,331	51,977
Replacements:				
Bred	1,664	3,087	400	5,151
Purchased	16,690	24,258	5,357	46,305
Total replacements ..	18,354	27,345	5,757	51,456
Ewes on hand 30.6.50 ..	59,012	85,731	14,569	159,312
Wastage and replacement as percentages of ewes on hand in each zone at July 1, 1949.				
	%	%	%	%
Ewes on hand 1.7.49	100.0	100.0	100.0	100.0
Wastage:				
Total sales	23.7	25.0	32.0	25.2
Deaths and rations	6.5	8.2	5.7	7.3
Total wastage	30.3	33.2	37.7	32.5
Replacements:				
Bred	2.9	3.5	2.8	3.2
Purchased	28.6	27.8	37.9	29.0
Total replacements ..	31.5	31.3	40.7	32.2
Ewes on hand 30.6.50 ..	101.2	98.1	103.0	99.6

Table No. 16 shows that, for all properties, the total numbers of ewes on hand at the beginning and end of the survey year were practically identical, and even within zones there was little variation in these figures. Wastage, as represented by sales, deaths and killed for rations, therefore, was balanced by replacements, either purchased or bred on the property. The wastage and replacement represented about one-third of the total ewes. This implies that a third of the fat lamb ewes are

replaced each year to maintain a constant breeding flock, or that the whole flock is replaced every three years. This, of course, is only an average figure, and is based on one year's experience only.

The wastage in ewes was largely due to selling them as cast-for-age or other culls; for the whole sample, just over 25% of total ewes were sold. Wastage through deaths and rations were both much less important; together they amounted to only 7.3% of total ewes for the whole sample, and ranged from 8.9% of total ewes in New South Wales down to 5.4% for Victoria.

Table No. 16 also shows that approximately 90% of replacements were purchased ewes, and only about 10% were bred on the properties. The method of replacing ewes on the sample properties is given in more detail in Table No. 17, which shows the numbers of each type of ewe as a percentage of the total ewe replacements.

TABLE No. 17.—EWE REPLACEMENTS: SAMPLE FARMS
1949–50

	Number of ewes.	Percentage of ewes.
		%
Ewes bred	5,151	10.0
Ewes purchased:		
Weaners	6,009	11.7
1- and 2-year-olds	20,790	40.3
3- and 4-year-olds	10,222	19.9
Aged	8,013	15.6
With lambs at foot	1,271	2.5
Total purchased	46,305	90.0
Total replacements	51,456	100.0

The fact that 35% of the ewe replacements were three years old or more when purchased explains to some extent the large annual turnover of ewes—one-third of the breeding ewes in 1949-50. Another contributing factor is the sale of ewes before they have finished their breeding life.

The purchase of one- and two-year-old ewes was the most important form of replacement in all zones, but this was particularly so in the high rainfall zone, where this type of replacement represented 54.6% of replacements. The purchase of weaners and three- and four-year-old ewes was commoner in the irrigation zone than in the other two zones. The use of aged ewes as replacements was confined almost entirely to the wheat-sheep zone; in the wheat-sheep zone of New South Wales more aged ewes were purchased than those of any other age, and represented 27% of total replacements in that area. In the Victorian wheat-sheep zone they represented 19.1% of the total replacements, but in this case were second in importance to the one- and two-year-old group (46.7%). The greater popularity of aged ewes in these areas was possibly due to their relatively easier availability in long lines from large grazing properties.

Some properties made a practice of purchasing ewes with lambs at foot, but these represented only 2.5% of total replacements for Australia.

BREEDS OF SHEEP MATED FOR FAT LAMB PRODUCTION

EWES.

It is generally recognized that under Australian conditions crossbred ewes are the most suitable for the production of fat lambs; the number of pure British breed fat lamb mothers in Australia is very small. As Australia is primarily a wool-producing country, practically all ewes from which fat lambs are bred are based on the Merino, and the most popular ewe for fat lamb production is based on the crossing of Merino ewes with long wool rams (such as the Border Leicester and Romney Marsh).

The two most favoured types of crossbred ewes are the Border Leicester x Merino first-cross and the Romney Marsh x Merino first-cross. Of the two types, the Border Leicester x Merino cross is more popular in the warmer districts by virtue of its early maturing propensity and ability to thrive under hot conditions. The Romney Marsh x Merino ewe is claimed by many fat lamb raisers to have a better conformation than the Border Leicester x Merino crossbred; however, as it is a later maturing type it is more popular in cooler districts. The English Leicester x Merino is another crossbred of good conformation for fat lamb production, but it is not as early maturing as the Border Leicester x Merino. Corriedale and Corriedale x Merino cross ewes are suitable types for hotter areas where early mating is desired.

The Merino is not regarded as a satisfactory fat lamb mother because of its poor conformation for mutton production and slow maturing ability. An exception is the larger framed Merino, such as is used in South Australia. Merinos are, however, used quite extensively in marginal areas where they are usually mated with Border Leicester rams to produce first-cross lambs which are disposed of in early Spring. If the season is unfavorable these lambs are carried over, shorn and sold as stores, the ewe portion for use as fat lamb mothers in more favorable districts.

The extent to which different breeds of ewes were mated for fat lamb production on the 200 sample farms in the survey is shown in Tables Nos. 18 and 19.

TABLE No. 18.—MAIN BREEDS OF EWES MATED: SAMPLE FARMS (*a*)
1949–50

Breed of ewes mated.	Number of farms.
Border Leicester x Merino	67
Merino	32
Romney Marsh x Merino	27
Comeback	23
Corriedale	16
Other Crossbred	32
No breeding flock	3
Total	200

(*a*) Where more than one breed of ewe is run on a farm, the farm is classified in accordance with the breed having the greatest numbers in the flock.

Border Leicester x Merino first-cross ewes were the most popular breed used, being predominant on 67 of the 200 properties in the survey. All but eight of these 67 properties were in New South Wales and Victoria, which shows the extreme importance of this breed in these two States. Of the 32 properties running Merino ewes, 29 were in the wheat-sheep zone; they represent the type of marginal producer who can dispose of first-cross lambs as stores if the season prevents their being fattened. Romney Marsh x Merino first-cross ewes were carried on 27 properties, of which 20 were in the high rainfall zone. Most of the properties running Comebacks were in Victoria, and most of those running Corriedales in New South Wales. On the 32 farms where "Other Crossbred" ewes predominated, the ewes' wool was stronger than Merino first-cross.

Table No. 19 shows the total number of sample farms on which any ewes of each breed were mated, and the total number of each breed of ewe mated.

TABLE No. 19.—NUMBERS OF EACH BREED OF EWES MATED: SAMPLE FARMS 1949–50

Breed of ewe.	Number of farms.	Number of ewes mated.	Ewes mated as percentage of total ewes mated.
Border Leicester x Merino	83	50,129	34.1
Merino	38	28,372	19.3
Romney Marsh x Merino	33	24,518	16.7
Comeback	33	14,732	10.0
Corriedale	20	11,845	8.1
Other Crossbred	34	17,261	11.8
Total	(a)	146,857	100.0

(a) The number of farms does not add to 200 as some properties have been included more than once according to the number of breeds they carry.

Border Leicester x Merino first-cross ewes comprised more than one-third (34.1%) of the total ewes mated on the 200 sample farms. This 34% was distributed as follows:—

(i) 20% were in the irrigation and high rainfall zones; in each of these zones Border Leicester cross ewes made up about half the ewes mated.

(ii) The remaining 14% were in the wheat-sheep zone; in this zone Border Leicester cross ewes represented about one-quarter of the ewes mated.

Merinos—19.3% of the total ewes mated—were concentrated mainly in the wheat-sheep zone, particularly in that zone in New South Wales where they comprised more than one-third of the ewes mated for fat lamb production. Romney Marsh x Merino ewes—16.7% of total ewes mated—were commonest in the high rainfall zone, where they made

up more than one-quarter of the ewes mated; in Victoria they were also of importance in the wheat-sheep zone, where they were only slightly less popular than Border Leicester x Merinos. Corriedales (8.1%) were found mainly in New South Wales, and Comebacks (10%) in the wheat-sheep zones of all States.

"Other Crossbred" included practically all ewes on the sample farms with wool stronger than Merino first-cross. As these were only 11.8% of the total in this class, it would appear that the quality of their wool is an important factor in the selection of fat lamb mothers.

Rams

Dr. Belschner, Chief, Division of Animal Industry, N.S.W. Department of Agriculture, points out: "Whereas long wool breeds of rams, notably the Border Leicester, Romney Marsh and Corriedale, may be used as sires for fat lambs, according to environmental conditions, generally speaking the best fat lamb for export is produced in Australia by mating one of the Downs breeds (which group includes the Dorset Horn) with a first-cross Longwool x Merino ewe".(3)

The breed of ram used is largely dependent on the conditions under which fat lamb raising is carried on. The Border Leicester ram has been found very suitable under hot, dry conditions, and this applies particularly in areas of marginal production. The use of Romney Marsh rams as fat lamb sires is largely confined to matings with Merino ewes, when the ewe portion of the drop is retained or sold as fat lamb mothers. The use of the Corriedale ram has hitherto been largely confined to areas of pasture improvement.

In the best fat lamb raising districts, Downs type sires are considered the most satisfactory. Downs rams are not so suited to districts where seasonal conditions are uncertain, as the poor quality fleece of the progeny of Downs rams makes them less profitable as carry-over lambs. The Downs breeds most commonly used in Australia as fat lamb sires are Southdown, Dorset Horn, and, to a much less extent, Suffolk, Ryeland and Shropshire. The Southdown is recognized as producing the highest quality lambs, particularly in the high rainfall areas. In districts where the growing season is limited, or where grass seeds become a problem, the Dorset Horn ram finds favour, as the extremely early maturity of its progeny enables them to be marketed at a satisfactory weight in the minimum time. Dorset Horns also show high fecundity under hot conditions. Another early maturing breed is the Suffolk, used extensively in some parts of Victoria and South Australia. Ryeland rams give similar results to the Southdown, and are particularly suited to the cooler districts. Other Downs breeds are used to a minor extent only; they produce a good type of lamb but, except perhaps under certain local conditions, not superior to those from the other breeds mentioned.

The extent to which different breeds of rams were used for fat lamb production on the 200 sample farms in the survey is shown in Tables Nos. 20 and 21.

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(3) *Sheep Management and Diseases:* H. G. Belscher, D.V.Sc., H.D.A.; Angus & Robertson Sydney, 1950.

TABLE No. 20.—MAIN BREEDS OF RAMS USED: SAMPLE FARMS (*a*)
1949–50

Breed of ram.	Number of farms.
Border Leicester	73
Dorset Horn	59
Southdown	36
Corriedale	12
Romney Marsh	5
Other (*b*)	12
No breeding flock	3
Total	200

(*a*) Where more than one breed of ram was used on a farm, the farm is classified in accordance with the breed of ram most extensively used.
(*b*) Includes Suffolk, English Leicester, Polwarth, Merino, Ryeland, Ryeland x Romney Marsh and Border Leicester x Corriedale.

Table No. 21 shows the total number of sample farms on which any rams of each breed were used, and the total number of ewes mated with each breed of ram.

TABLE No. 21.—BREEDS OF RAMS USED: CLASSIFIED BY FARMS AND BY NUMBER OF EWES MATED TO EACH BREED: SAMPLE FARMS
1949–50

Breed of ram.	Number of farms.	Number of ewes mated.	Ewes mated as percentage of total ewes mated.
Border Leicester	86	54,564	37.1
Dorset Horn	77	44,619	30.4
Southdown	45	27,891	19.0
Corriedale	17	8,983	6.1
Romney Marsh	7	3,217	2.2
Other	28	7,583	5.2
Total	(*a*)	146,857	100.0

(*a*) The number of farms does not add to 200 as farms carrying more than one breed of rams are included more than once.

Border Leicesters were the most commonly used rams, being mated to 37.1% of the total ewes mated. In the marginal areas where Merino ewes were mated for fat lamb production, Border Leicester rams were used almost exclusively. If these marginal areas are excluded, Border Leicester and Dorset Horn rams were of equal importance; in the irrigation zone Dorset Horn rams were used more extensively than Border Leicesters. Southdown rams were next in importance, being joined to 19% of the total ewes mated; in the high rainfall zone they were the most extensively used breed of ram. These three breeds together were mated to 86% of the total ewes mated on sample farms.

LAMBS

Table No. 22 indicates the percentage of each breed of lambs produced on the 200 sample farms in the survey.

TABLE No. 22.—PERCENTAGE DISTRIBUTION OF MATINGS: BY BREEDS: SAMPLE FARMS

(Number of ewes as percentage of total ewes mated.)

1949–50

Breed of ram.	Breed of ewe.						
	Border Leicester x Merino.	Merino.	Romney Marsh x Merino.	Corriedale.	Comeback.	Other Crossbred.	Total.
	%	%	%	%	%	%	%
Border Leicester	12.0	13.8	2.9	0.9	4.4	3.1	37.1
Dorset Horn ..	12.4	1.8	8.3	2.9	2.9	2.1	30.4
Southdown ..	8.4	0.1	3.5	0.8	0.8	5.4	19.0
Corriedale ..	0.3	2.4	..	3.1	0.1	0.2	6.1
Romney Marsh	..	..	1.8	..	0.2	0.2	2.2
Others (*a*) ..	1.2	1.2	0.1	0.4	1.7	0.6	5.2
Total ..	34.3	19.3	16.6	8.1	10.1	11.6	100.0

(*a*) Includes Suffolk, Ryeland, Merino, English Leicester, Polwarth, Ryeland x Romney Marsh and Border Leicester x Corriedale.

Border Leicester rams crossed with Merino ewes, at 13.8%, represented the highest percentage of matings. Lambs of this cross were bred mainly on properties in the wheat-sheep zone, particularly in New South Wales and South Australia. Dorset Horn and Border Leicester rams were extensively mated to Border Leicester x Merino ewes; these matings represent 12.4% and 12% of total matings, respectively. Two other popular combinations were Southdown rams with Border Leicester x Merino ewes and Dorset Horn rams with Romney Marsh x Merino ewes, each comprising more than 8% of the total matings.

In all, matings of Downs type rams to ewes of all breeds other than Merino, that is, to crossbred type ewes, constituted about 50% of total matings. These matings should have produced fat lambs of good quality. Matings of long wool rams—in this class Corriedales have been included—to crossbred type ewes accounted for about 30% of total joinings. Lambs produced from these matings would be good fat lamb types, but perhaps inferior from the point of view of export quality, to those sired by Downs type rams. The remaining 20% of matings were to Merino ewes, and in general the type of fat lamb resulting would not be rated as highly as the other two classes. However, the average prices received for lambs of different types were very similar—

	s.	*d.*
Downs type ram x Crossbred ewe	44	10
Long wool ram x Crossbred ewe	46	6
Downs type ram x Merino ewe	44	4
Long wool ram x Merino ewe	46	11

The prices shown are largely a reflection of the relationship between skin (wool) values and meat values in 1949-50. A different pattern of lamb prices could result from a changed relationship between skin (wool) and meat prices. However, it was apparent during the survey that the type of lambs produced on the sample farms was largely determined by environmental conditions on the individual farms; for instance, in certain districts the use of merino ewes with long wool rams is advisable. The type of lamb produced also appeared to depend to a large extent on the availability of ewes of different types and the farmer's personal choice of rams.

FEEDING

The increase in fat lamb production which occurred during the 1930's coincided with a rapid development of pasture improvement. Because of this increase in improved pastures, which was confined to the areas more favoured by rainfall, the fact that many fat lambs still come from natural pastures is often overlooked.

Pasture, natural or improved, constituted by far the greater part of feed for fat lamb flocks, although other types of grazing—stubble, fallow, growing cash crops and fodder crops—were used to supplement pasture, and some supplementary hand feeding was also undertaken. In analysing feeding methods used on sample farms, the sample farms were first classified into three main groups according to whether their pastures were—

(i) improved pasture(4) as the only pasture;

(ii) a combination of improved pasture with natural pasture;

(iii) natural pasture, as the only pasture.

Table No. 23 shows how these groups broadly follow a zonal pattern.

TABLE No. 23.—TYPE OF PASTURE USED ON SAMPLE FARMS: BY ZONES

1949-50

Zone.	Type of pasture.			All farms.
	Improved only.	Improved and natural.	Natural only.	
	No. of farms.	No. of farms.	No. of farms.	No. of farms.
High rainfall	43	34	9	86
Wheat-sheep	8	19	70	97
Irrigation	3	12	2	17
All zones	54	65	81	200

(4) Improved pasture covers sown or fertilized pastures and here includes lucerne and irrigated pastures.

Of the first group of 54 farms where the main type of feed was improved pasture only, 43 were in the high rainfall zone where climatic conditions are most favorable for pasture improvement.

The second group of farms, where flocks grazed on both improved and natural pasture, included the majority of farms in the irrigation zone, almost half the farms in the high rainfall zone, and only about one-fifth of the farms in the wheat-sheep zone.

In the third group, with only natural pasture, 70 of the 81 farms were in the wheat-sheep zone, where climatic conditions tend to limit the establishment of improved pasture.

A better idea of the relative importance of natural and improved pasture for fat lamb production is given in Table No. 24. In this table, the lambs sold from the 200 sample farms are analysed in terms of the number of months when the fat lamb flock was run on improved pasture.

TABLE No. 24.—USE OF IMPROVED PASTURE: SAMPLE FARMS

1949–50

Number of months on improved pasture.	Number of farms.	Number of lambs sold.	Percentage of total lambs sold.
Nil	81	46,197	34.9
1– 3 months	14	6,464	4.9
4– 7 months	38	30,439	23.0
8–11 months	13	15,719	11.8
12 months	54	33,600	25.4
All farms	200	132,419	100.0

On 105 farms, more than half the sample, flocks were run on improved pasture for more than four months of the year; from these farms, where improved pasture plays a major part in fat lamb production, came 60% of the total lambs marketed. Nevertheless, on 81 of the 200 farms, the flocks were run without any improved pasture at all, and from them came 35% of the total lambs marketed.

Improved pastures were of great importance in Victoria and South Australia, particularly in the high rainfall areas, and also in the Victorian irrigation zone. In New South Wales, improved pastures were less important. In Queensland, all grazing was on natural pasture, sometimes supplemented by growing crops. In Tasmania and Western Australia, on the other hand, flocks were mainly grazed on improved pastures.

Table No. 25 shows the way in which the main type of pasture was supplemented. The main causes of difference were regional differences in climate and soils.

TABLE No. 25.—ANALYSIS BY FEEDING METHODS: SAMPLE FARMS
1949–50

Type of pasture and supplementary grazing.	Number of farms.			Number of lambs sold.	Percentage of lambs sold.
	No hand feeding.	Hand feeding.	Total.		
Improved pasture only:					%
Nil	18	7	25	16,182	12.2
Fodder crops ..	5	9	14	9,741	7.4
Stubble and fodder crops	1	8	9	5,699	4.3
Stubble	1	5	6	1,978	1.5
Total	25	29	54	33,600	25.4
Natural pasture and improved pasture:					
Nil	25	4	29	28,116	21.2
Fodder crops ..	7	4	11	5,878	4.5
Stubble and fodder crops	8	6	14	11,826	8.9
Stubble	9	2	11	6,802	5.1
Total	49	16	65	52,622	39.7
Natural pasture only:					
Nil	17	1	18	13,942	10.5
Fodder crops ..	7	..	7	4,785	3.6
Stubble and fodder crops	17	5	22	11,574	8.8
Stubble	30	4	34	15,896	12.0
Total	71	10	81	46,197	34.9
TOTAL	145	55	200	132,419	100.0

Of the 54 farms in the first group which had improved pasture as the only pasture, there were 18 which carried their flocks on improved pasture without supplement of any sort for the full year. The remaining 36, however, supplemented improved pasture in various ways. It seems that the provision of extra feed in the form of hand-fed supplement is largely associated with improved pastures, depending largely on the need to provide against seasonal shortages in certain areas. In Western Australia, most farms hand-feed during the latter part of the long dry Summer until winter growth is available; in South Australia, especially in the wheat-sheep zone, conserved fodder must be available for flocks during that dry autumn period after stubbles cease providing feed, and often right up to and during lambing; also in Tasmania, most of the farms hand-feed their flocks as a normal policy of winter feeding. Apart from these areas, hand-feeding was generally less widespread as a supplement to improved pastures than the provision of fodder crops; this was particularly so in both New South Wales and Victoria. An interesting feature of supplementary grazing is that only five of the 200 sample farms turned sheep on to growing cash crops for a period of grazing.

On farms in the third group, where natural pasture was the only pasture, 17 of the 81 farms relied on natural pasture alone, unsupplemented in any way. All but eight of the remaining 64 farms which supplemented their natural pasture used stubble-grazing, either alone or with growing crops. Only ten of the whole 81 farms hand-fed their flocks.

The importance of stubble grazing as a supplementary feeding method where natural pasture was the only pasture, is in contrast to the more common use of fodder crops and hand-feeding where improved pasture was the only pasture. This contrast was to be expected, as most of the "natural pasture" farms were in the wheat-sheep zone, while most of the "improved pasture" farms were in the high-rainfall zone. Fodder crops are still of some importance, especially in the wheat-sheep zone of New South Wales and in Queensland, but hand-feeding is not widely practised.

DROUGHT RESERVES

In addition to supplementing their main types of pasture, many of the farms kept reserves of fodder for use in times of drought. Of the 200 sample farms, 150 had such stocks, although these were often very small, and in some cases the quality was admittedly not good. Table No. 26 shows how these stocks were distributed at the beginning of the survey period.

TABLE No. 26.—FODDER HELD ON JULY 1, 1949: SAMPLE FARMS: BY ZONES

Zone.	Fodder reserves on hand, July 1, 1949.				No fodder reserves.	All farms.
	Grain.	Hay, including ensilage.	Both hay and grain.	Total with reserves.		
	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.
High rainfall ..	..	40	22	62	29	86
Wheat-sheep ..	9	30	40	79	18	97
Irrigation	..	6	3	9	8	17
All zones ..	9	76	65	150	50	200

All sample farms in Western Australia and Tasmania, and most of those in South Australia (including all those in the wheat-sheep zone), had conserved fodder on hand, as did 60 of the 77 farms in the wheat-sheep zones of New South Wales and Victoria. In the high rainfall zone, most of the New South Wales farms had fodder stocks, but fewer than half in Victoria had such stocks. On the other hand, in the irrigation zone, most of the Victorian farms had conserved fodder, but none in New South Wales. Apparently fodder conservation depends on the necessity or otherwise for seasonal hand-feeding and the risk of bad seasons.

MARKETING(5)

TIME OF SALE

Most of the fat lambs produced in Australia are marketed between August and February. In this period of peak production there is a marked concentration of lambs marketed in the four-

(5) An article on this subject was published in the *Quarterly Review of Agricultural Economics*, Vol. IV., No. 4: "Marketing of Fat Lambs", by E. K. Simmons. With minor amendments the article has been included as this section of the report.

month period September to December. This concentration of lamb marketing in part of the year is a reflection of the normal seasonal availability of pasturage, and the consequent necessity to time fat lamb production to take full advantage of the normal pasture-growing season. Generally, fat lambs can be produced outside this period only on properties situated in a district where pasture growth is more continuous through the year, or where special measures are taken to provide feed at times when pasture growth is poor.

An analysis of the sample farms was made with the object of ascertaining the time of sale of lambs. In most cases detailed records of the time of sale were unavailable, but it was generally possible to record the total number sold in the season and the peak month of sales. The month in which the main bulk of lambs was sold from each farm was weighted by the total number of lambs sold from the farm. This was the only method available from the survey data of showing the relative importance of the different months of sale. On this basis a comparison was made between the time of sale of lambs from sample farms in 1949-50 and the monthly lamb slaughtering figures as supplied by the Commonwealth Statistician for the same season.

TABLE No. 27.—LAMBS SOLD FROM SAMPLE FARMS COMPARED WITH AUSTRALIAN SLAUGHTERINGS

1949–50

Time of sale or slaughter.	Sample farms.			Lamb slaughterings (Australia).	
	Number of farms.	Number of lambs sold.	Lambs sold as % of total.	Number of lambs slaughtered.	Lambs slaughtered as % of total.
1. Peak period (Aug.–Feb.) ..	175	103,818	78.4	7,324,496	74.2
2. Off – peak (March–July)	25	28,601	21.6	2,545,560	25.8
Total ..	200	132,419	100.0	9,870,056	100.0

Table No. 27 shows that the peak period as indicated by sales from the sample farms closely approximates the peak period of lamb slaughterings. The actual number of lambs sold from the sample farms during the peak period may have been less than that shown, due mainly to the method of estimation used, which neglected the fact that some of the farms which disposed of the bulk of their lambs in the peak period also sold some lambs off peak. Also, not necessarily all lambs sold in the peak period were slaughtered, whereas it is reasonable to assume that most of the lambs produced off-peak as fats would be slaughtered. Taking into account these factors, there is very close agreement between the figures shown.

The peak period for districts varied in accordance with local conditions. The outstanding example of this is evident in the contrast between the high rainfall and wheat-sheep zones. The wheat-sheep zone, largely

representing a hotter and drier climate, produced a much earlier lamb than did the high rainfall zone. Thus the peak period in the wheat-sheep zone occurred in September and October (46% of the lambs sold from that zone were sold in those two months) while in the high rainfall zone the peak of production occurred in November and December (47% of the lambs sold from that zone were sold then). This difference between the two zones is largely a matter of climate; further, in the wheat-sheep zone it is necessary to get the lambs away before grass seed becomes troublesome and pastures dry off. On the other hand, the season in the high rainfall zone is generally much later, and usually longer than in the wheat-sheep zone; also the altitude of parts of the high rainfall zone results in long, severe Winters, necessitating a spring lambing. The difference between these two zones is apparent throughout the sample, lambs from the wheat-sheep zone always being sold a month or two ahead of those from the high rainfall zone. This inter-zonal difference is also reflected in New South Wales being earlier than Victoria, because most of the lambs from New South Wales came from the wheat-sheep zone, while most Victorian lambs came from the high rainfall zone.

In the irrigation areas, most of the lambs were comparatively early lambs. Often the aim on irrigation farms is to produce early lambs and then, after having marketed them, to buy lambs to fatten during the Summer. Apart from this, however, it may be necessary to produce early lambs where the water available is sufficient only to maintain annual pastures or to grow crops. Actual practice may vary considerably from farm to farm.

Generally speaking, the earliest lambs came from those parts of the wheat-sheep zone with the mildest Winter. As the season progressed lambs came first from the wheat-sheep zone generally, and then, in the latter part of the season, from the high rainfall zone. The latest lambs came from Tablelands or Southern districts where autumn or winter lambing is not the general practice.

Age of Lambs Sold.

The sample was further analysed to ascertain the age at which lambs were marketed. In general throughout Australia, farms in the wheat-sheep zone tended to sell younger lambs than did those in the high rainfall zone. This is demonstrated in Table No. 28, which shows the contrast in sales at different ages in the three zones.

TABLE No. 28.—AGE OF LAMBS SOLD: SAMPLE FARMS
1949–50

Zone.	4 months and less.	4 to 5 months.	5 to 6 months.	6 to 12 months.	Total.
	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.
High rainfall	15	37	20	14	86
Wheat-sheep	25	49	15	8	97
Irrigation	1	11	1	4	17
All zones ..	41	97	36	26	200

It has been noted already that the wheat-sheep zone made most contribution to the sale of early lambs. Table No. 28 shows that lambs from that zone were also sold at an earlier age than the average. Both these facts appear to be the result of the earlier season followed by drying-off and seeding of pastures. By contrast, in the high rainfall zone lambs may be carried to a greater age and marketed later with less worry from grass-seeds.

The difference between the zones, as regards both age of lambs and time of sale, was most marked in Victoria, and is shown in Table No. 29. This shows that most of the earlier and younger lambs came from the wheat-sheep zone and that most of the later and older lambs came from the high rainfall zone, where better rainfall and more pasture improvement permit lambs to be carried longer and marketed at a heavier weight.

TABLE No. 29.—TIME OF SALE AND AGE OF LAMBS: VICTORIA: SAMPLE FARMS.

1949–50.

Zone.	Time when sold.	Age of lambs when sold.		
		4 months and less.	4 to 5 months.	Over 5 months.
		No. of farms.	No. of farms.	No. of farms.
High rainfall ..	July to November ..	4	3	5
	December to June ..	2	14	10
Wheat-sheep ..	July to November ..	10	11	3
	December to June ..	..	..	..

The pattern of earlier and younger lambs from the wheat belt and later and older lambs from the better rainfall areas also applies in both South Australia and Western Australia. However, in New South Wales there is no correlation between time of sale and age of lambs. Apparently in that State other factors are involved. Lambs from the New South Wales wheat-sheep zone tend to be rather older than lambs from the Victorian wheat-sheep zone. This particular difference may be a reflection of the wide use in New South Wales of the Border Leicester ram as against the greater popularity in Victoria of the Dorset Horn, which is regarded as producing an early-maturing lamb.

The relationship between the time of marketing fat lambs and the age when they are marketed, as shown in the preceding analysis, has a pattern depending mainly on the climate of the particular district. Other factors influencing the time of marketing and age when marketed are—

(i) Breeds of rams and ewes—maturity of the lambs varies considerably with the different breeds.

(ii) The current state of the market—both meat and skin prices influence the producer here.

(iii) The aims of the producer in marketing lambs at off-peak periods—lambs may be specially produced for this purpose.

The conclusion from the results presented is that the bulk of the lambs sold are marketed within the broad limits of three and half and six months old. At what age within these limits they will be sold appears to a large extent to be determined by environmental conditions rather than by market requirements.

Of the 200 sample farms, 25 sold most or all of their lambs in the off-peak period. When sold, these lambs were generally older than lambs sold at the normal period. They were produced either in districts where feed is available at times when pasture is normally scanty in other districts, or by using supplementary feed, such as fodder crops.

The relation between the peak and off-peak producing farms, and the age at which their lambs were sold, is shown in Table No. 30.

TABLE No. 30.—COMPARISON OF AGES OF LAMBS SOLD AT DIFFERENT TIMES: SAMPLE FARMS
1949–50

Time of production.	Age of lambs when sold.			Total.
	6 months and less.	6 to 8 months.	8 months and over.	
	No. of farms.	No. of farms.	No. of farms.	No. of farms.
Peak (August–February) ..	166	7	2	175
Off-peak (March–July) ..	8	5	12	25

Table No. 30 shows that most of the farms producing off-peak lambs sold older lambs than those farms producing lambs during the peak of the season. Of the 25 farms producing off-peak lambs, 21 used improved pastures—generally clover and rye grass. Others relied on special local feed conditions. Altogether 14 farms of the total 25 off-peak producers supplemented their pastures, generally with both fodder crops and hay or grain. Thus, for off-peak production, the provision of improved pasture appears to be more important than fodder crops or supplementary feeding.

Another feature common to most of the off-peak producers was the purchase of lambs for fattening. Of the 25 off-peak producers, 17 did this, and these lambs represented 57% of the total lambs sold by the off-peak producers. Lambs purchased for fattening often represent a "second crop" of lambs from the same property. This is particularly true in the irrigation areas, where many producers fattened purchased lambs after having sold their own drop. In the wheat-sheep zone fattening of purchased lambs may also represent a "second crop"; in this case the later lambs are fattened on stubble or lucerne.

PLACE OF SALE.

In an analysis of the sample farms by their selling method, farms were classified in accordance with the methods adopted for the sale of the majority of lambs from the farm. The methods were—

(i) At a metropolitan market.
(ii) At a country market.
(iii) In the paddock.
(iv) To a meat works, by weight and grade.

By far the most important selling method was by auction at the State metropolitan markets. Of the 200 sample farms, 124 sold their lambs at the metropolitan markets, and these represented 57% of the total lambs sold from the 200 sample farms. A further 32 farms sold their lambs at auction, but at country markets. Of these 32 farms, 14 were situated in the wheat-sheep zone of New South Wales, and most of the remainder in Victoria. This method of sale was made possible by the existence of such country markets as Forbes, Dubbo, Cowra and Wagga in New South Wales, and Bendigo, Shepparton, Geelong, Echuca and Ballarat in Victoria.

Thirty-seven of the sample farms sold their lambs mainly in the paddock. Twelve of these farms were in South Australia, where as many lambs were sold in the paddock as at the metropolitan market. In Victoria, 14 farms sold their lambs in the paddock, and these paddock sales were of comparble importance to sales in country markets. In New South Wales, only ten farms sold their lambs in the paddock, and this method of sale was much less important than country market sales.

Sales of lambs direct to meat works on a weight and grade basis were of importance in the year covered by the survey only in Western Australia, where six of the ten sample farms for the State sold their lambs by that method.

Because 156 of the 200 sample farms favoured selling the bulk of their lambs (77% of total lambs sold) at auction sales, it is evident that producers preferred the competition which these auctions provided and were—at least in 1949-50, the year covered by the survey—prepared to take the risk of losing lambs, or of lambs deteriorating in quality, which often occurs when lambs are sent long distances to market. Lambs may also lose condition and quality after reaching the saleyards if they stand in the sun without adequte shelter, feed or water.

Even though paddock sales generally ensure that lambs are sold in their best condition, and that they will suffer less handling before slaughter than lambs sold in the saleyards, paddock sales were not widely popular.

Apparently most producers considered that under present marketing conditions, weight and grade selling does not give as satisfactory returns as other methods.

Method of Transport

In analyzing the sample farms by the method of transport of lambs to market, the 37 farms which sold lambs in the paddock were not included, as in that case the transport of the lambs from farm to place of slaughter was not the responsibility of the producer.

Table No. 31 shows the method of transport and destination of lambs from the remaining 163 sample farms.

TABLE No. 31.—METHOD OF TRANSPORT AND DESTINATION OF LAMBS SOLD: ANALYSIS OF 163 SAMPLE FARMS
1949–50

Destination of lambs.	Method of transport.(a)			Total.
	Rail.	Motor.	Droving.	
	No. of farms.	No. of farms.	No. of farms.	No. of farms.
Metropolitan	98	26	..	124
Country	5	24	3	32
Meat works	4	3	..	7
Total	107	53	3	163

(a) Farms selling lambs in the paddock excluded.

Of the 124 farms which sold their lambs in the metropolitan market, the 55 in New South Wales all sent their lambs by rail, the distances ranging from about 100 miles to 480 miles. In the other States, 43 producers used rail transport, and the remaining 26 sent their lambs by motor transport. One advantage of sending lambs to market by motor transport is that they are lifted directly from the farm and delivered straight to the saleyards, avoiding some of the extra handling often associated with rail transport, and perhaps saving time in transit. Many farmers claimed that the better condition of the lambs on arrival at market enabled a better price to be obtained and repaid any extra expense involved in motor transport.

WOOL CUTS

The average wool cuts per head of sheep shorn on 178 of the sample farms are shown in Table No. 32. Three other farms did not shear any sheep in 1949-50, while for the remaining 19, insufficient information was available on either shearing numbers or the weight of wool obtained.

TABLE No. 32.—AVERAGE WOOL CUT PER HEAD OF SHEEP SHORN: SAMPLE FARMS: BY ZONES (a)
1949–50

Zone.	Wool cut per head.				All farms.	Average cut per head.
	Under 7 lb.	7 lb. and under 9 lb.	9 lb. and under 11 lb.	11 lb. and over.		
	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.	lb.
High rainfall ..	7	33	27	6	73	8.9
Wheat-sheep ..	5	27	32	28	92	9.8
Irrigation	1	4	5	3	13	9.5
All zones ..	13	64	64	37	178	9.5

(a) This table refers to wool shorn from sheep of the fat lamb flock only.

Between irrigation and wheat-sheep zones the difference in wool cut was only 0.3 lb. per head; the average cut was, however, appreciably lower in the high rain-fall zone, being 8.9 lb. or almost 1 lb. lower than in the wheat-sheep zone.

The average prices received for wool sold from the fat lamb flock were—

	Pence per lb.
High rainfall zone	56.7
Wheat-sheep zone	49.5
Irrigation zone	52.0

Thus, the average returns per head from wool were very similar for all three zones and were—

	Per head. s.	d.
High rainfall zone	42	6
Wheat-sheep zone	40	6
Irrigation zone	41	0

As it was thought that cuts per head of sheep shorn might be related to the breed of sheep carried, this was analysed, as shown in Table No. 33.

TABLE No. 33.—WOOL CUTS PER HEAD OF SHEEP SHORN COMPARED WITH MAIN BREED OF SHEEP CARRIED: SAMPLE FARMS

1949–50

Main breed of sheep carried.	Wool cuts per head.				Total.
	Under 7 lb.	7 lb. and under 9 lb.	9 lb. and under 11 lb.	11 lb. and over.	
	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.
Merino	..	8	11	11	30
Comeback	3	7	5	6	21
Corriedale	..	6	6	2	14
Border Leicester x Merino	7	21	20	11	59
Romney Marsh x Merino	2	7	12	1	22
Other Crossbreds ..	1	15	10	6	32
Total farms ..	13	64	64	37	178

The table shows little difference between the different breeds, with the exception that where Merinos were run for fat lamb production, cuts per head tended to be higher. This was possibly due to the use of large-framed, strong-wooled type Merinos, particularly in South Australia.

TRENDS IN PRODUCTION.

One very important aspect of any assessment of the fat lamb industry is the outlook for future production. During the survey, information on two points dealing with future production was collected. These points were—

(i) The intentions of farmers as to their future production.

(ii) The potential output of fat lambs from sample farms under conditions of optimum production.

Questions on both points were restricted to the production of lambs rather than numbers of fat lambs for sale, as the actual turn-off of lambs in any year is to a large degree dependent on seasonal factors. In a good season the number of lambs sold could be increased by the fattening of purchased lambs, while in a bad season not all lambs bred can be fattened.

Farmers were asked for an estimate of the number of lambs they expected to produce annually in the next few years. The answers to this question have been summarized in Table No. 34.

TABLE No. 34.—FUTURE FAT LAMB PRODUCTION: SAMPLE FARMS: FARMERS' ESTIMATES

Future intentions.	Number of farms.	Number of lambs.	
		1949–50.	Future production.
Increase 100% and over	11	3,295	6,900
Increase 50% and under 100% ..	17	9,807	15,800
Increase under 50%	41	32,150	39,000
Static	99	51,178	51,200
Decrease under 50%	5	4,382	3,200
Decrease 50% and under 100% ..	11	8,670	4,300
Decrease 100%	13	6,052	..
Total	197 (a)	115,534	120,400

(a) On the three farms excluded from this tabulation, the fat lamb enterprise was confined to fattening purchased lambs.

Although 69 farmers intended to increase fat lamb production, the expected increase from these farms averaged only about 200 lambs per farm. On the other hand, with the 29 farmers who intended to reduce their fat lamb numbers, their expected decrease averaged about 400 lambs per farm. If these intentions were to be carried out, the net result would be an increase of some 5,000 lambs, or about 4%.

The farmers' main considerations in arriving at a future farm policy seem to have been—

(i) The high prices of wool (farmers were interviewed between March and June, 1951, after most had just sold wool at the record prices of the 1950-51 wool selling season).
(ii) The ease of running sheep (either for wool or for meat) compared with wheat growing.
(iii) The difficulty of obtaining suitable labour.
(iv) Shortages of materials, particularly farming plant, spare parts and fence materials.

As a result of these factors, the tendency was for a movement from wheat growing to sheep raising—most of the increases in fat lamb production were to be at the expense of wheat acreages—and for the emphasis in sheep raising to be on wool, almost all of the expected decreases in lamb production being a result of concentration on wool growing.

The assessment of the potential production of fat lambs from sample farms was based primarily on estimates made by the farmers themselves, but in all cases figures quoted by farmers were checked to ensure that the estimates were realistic. For the whole sample, the assessment probably represents a conservative estimate of what could be achieved, given the necessary labour, materials, finance and price incentives for the changes involved.

From a figure of just over 115,000 lambs produced on the sample farms in 1949-50 it is estimated that optimum production would be around 166,000, an increase of 44%. About half of this increase would come from New South Wales, one-quarter from Victoria, and the balance from the other States. The figures suggested that in both New South Wales and South Australia fat lamb production could be increased on the sample farms by about 50%.

On individual farms the percentage increase possible, to reach capacity production, varied over a wide range, as follows:—

	% of farms.
No increase	17
Increase 1% to 50%	46
„ 51% to 100%	26
„ over 100%	11

Of the 21 sample farms which, it is estimated, could at least double production, 13 were in New South Wales, while more than half of the farms now producing at full capacity were in Victoria.

This increase in output of lambs would involve either the intensification of the fat lamb enterprise or a reduction in output from other farm enterprises. Subdivided according to the expressed intentions of the farmers in the sample, the increase of 50,000 lambs from the sample farms could be obtained as follows:—

	No. of lambs.
By intensification	30,000
By reduction of—	
Cereal cropping	7,500
Wool growing	7,500
Beef production	3,500
Dairying	1,500
Total increase	50,000

Corresponding reductions(6) in these enterprises would be—

Cereal cropping	12,000 acres
Wool growing	17,500 wool cutters
Beef production	920 cattle
Dairying	400 dairy cows

At the same time, an increase of 50,000 lambs would be accompanied by an appreciable increase in wool production. The additional ewes necessary for the increased lamb production—at least 60,000—would provide about three times as much wool as that lost by the reduction of 17,500 wool cutters, though there would probably be a change in the quality of the wool.

(6) The following conversion factors were used in these calculations:—
1 crossbred ewe = 1.75 dry sheep.
1 dairy cow = 5 crossbred ewes.
1 fattening beast = 5 crossbred ewes.
1 acre of old cropping land will carry 1 crossbred ewe.
Lambing percentage is estimated at 75.

It is, however, on the point of additional ewes for fat lamb production that the extent of the possible increase could well depend. An increase of 44% of the number of ewes mated for fat lamb production could only be secured at the expense of those mated for flock replacements, and this could result in a declining sheep population. Put in another way, an increase of 44% on the number of lambs slaughtered in 1949-50 would mean an annual kill of almost 14,500,000 lambs. As the annual wastage from deaths and slaughterings of adult sheep over the last twenty years has averaged 18,000,000, the number of lambs required annually to maintain a stable sheep population, with lamb slaughterings at 14,500,000, would be about 32,500,000. This is a figure which has been reached only twice in the last twenty years and is 5,000,000 above the average over that period.

In the production aims set by the Australian Agricultural Council, lamb slaughterings are not expected to rise much above 11,000,000 by 1957-58; this estimate allows for an increase in sheep numbers of just under 2,000,000 per year.

REGIONAL CHARACTERISTICS OF THE INDUSTRY(7)

From the previous sections it will have been apparent that, in each of the aspects of fat lamb production discussed, there were considerable variations from farm to farm. This was only to be expected as fat lambs are produced under a wide range of conditions in different parts of Australia. The types of fat lamb produced in any district, as well as the methods of production, are largely determined by the natural environment.

There is a fairly well defined geographical distribution of the different enterprises which are carried on in conjunction with fat lamb raising. Cereal cropping, wool growing, dairying and beef production are all better suited to the environments of some areas than of others.

Also, particular breeds of ewes find favour in different areas. Merinos are particularly favoured for fat lamb production in areas where seasons are not certain and there is the possibility that lambs will have to be carried over or sold as stores. Border Leicester x Merino and Romney Marsh x Merino ewes are generally considered most suited to hot and cool climates respectively. In some areas the prevalence of grass seed makes it imperative that lambs mature early; in such areas the breed of ram used for fat lamb production is therefore restricted to those which produce lambs of this type. On the other hand, in areas where the season of pasture growth is longer, the type of lamb wanted may be one which can be held longer and sold at a heavier weight.

Feeding methods, also, are dependent on environmental factors. There are limits to the areas in which improved pastures based on subterranean clover can be established. Also, a number of areas are subject to seasonal

(7) For a more detailed description see *Quarterly Review of Agricultural Economics*, Vol. V., No. 1: "Fat Lamb Industry: Production Regions in South-eastern Australia", by H. G. McConnell and E. K. Simmons.

droughts. For example, in Western Australia, and to a lesser extent in South Australia, the winter incidence of rainfall makes supplementary feeding in late Summer and Autumn almost a necessity.

The time when fat lambs are marketed is also largely governed by climate. This is clearly illustrated by the peak sales of lambs in late Spring and early Summer, just after the flush of feed occurs in most districts. However, in areas where winter conditions are usually severe, lambing cannot take place until the Spring, resulting in a much later marketing of lambs.

Thus, although it was to be expected that practices would vary from district to district with changes in environmental conditions, it might also have been expected that, in any one district, the farms with similar soils, topography and climate would adopt similar practices. Results from the survey, however, suggest that this is not the case.

It would appear that factors other than environmental are important in determining farm practices. The most important of these other factors leading to differences in the practices on farms in the same area seems to be the personal preference of individual farmers. But even these personal preferences are restricted by considerations which apply more or less generally. The availability of labour is a case in point; practices involving the use of much casual labour would have been difficult to carry out during the last few years. In the same way, it was not always possible for farmers to run the particular breeds and types of sheep they would have preferred; for instance, a number of farmers in the sample said that they were unable to obtain the type of ewe replacements they wanted, and had to make do with what was available.

It is also probable that farm size had some effect on differences in farm practices. For example, where cereal cropping is part of the farm enterprise, there is a minimum area of crop which enables economic use to be made of the money tied up in a farming plant, irrespective of the size of the property.

For these and, no doubt, other reasons, any broad picture of regional characteristics of the industry obtained from the survey is blurred by marked differences in methods of production between individual farms within areas of similar environment. Apart from the general use of improved pastures in the high rainfall areas and of natural pastures in the wheat-sheep and pastoral areas, and the concentration on merino ewes in the marginal areas, there were no strict regional patterns. Even cereal cropping was not confined to the wheat belt proper; on high rainfall farms it was as common an adjunct to fat lamb raising as any other type of production. Map IV. illustrates broad fat lamb regions of South-eastern Australia, delineated on the basis of breed of fat lamb mother and type of pastures on which they are grazed. Although there is reasonable similarity in these aspects within the regions, there are equally marked differences when other factors, such as type of associated enterprise, are considered. It is apparent, therefore, that any attempt to define areas of more homogeneous fat lamb production would require a sample much larger than the 200 farms of this survey.

MAP IV
FAT LAMB PRODUCTION REGIONS IN SOUTH-EASTERN AUSTRALIA
(Excluding Irrigation Farms)

SCALE 50 0 100 200 MILES

REGIONS

Intensive

Marginal

Intermediate

Marginal

Intermediate

Intensive

Gunnedah

Trangie

Wellington

SYDNEY

Narrandera

CANBERRA

ADELAIDE

Eyre's Pen.

Bendigo

Nhill

Naracoorte

MELBOURNE

○ ····· Merino ewes on natural pasture

◉ ····· Comeback or Corriedale ewes on natural pasture

✛ ····· Crossbred ewes on " "

♦ ····· Comeback or Corriedale ewes on improved pasture

◇ ····· Crossbred ewes on " "

B.A.E. — J.O'H

SECTION V
FINANCIAL ANALYSIS

In this section, emphasis is placed on the influence of the various enterprise combinations on the financial results of fat lamb producing properties. This approach has been adopted because it became clear, during the analysis of the sample, that the enterprise with which fat lamb raising was associated had a greater influence on financial results than any other factor. Any differences between States or zones tended to result from the pattern of combination of enterprises in the individual States and zones.

Methods used in arriving at the capitalization of farms and in treating items of "Costs" and "Returns" are given in Appendix II.

In the presentation of the results of this financial analysis it has been found necessary to include a great many distribution tables. For convenience, these have been placed together in Appendix III. rather than through this section; however, these distribution tables form an important part of the financial analysis since, in most cases, group averages could give a wrong impression if the distribution of individual farm figures were not taken into account.

The outstanding feature of the analysis is the extreme range of values for every measure calculated; this applies even to measures which minimize the effect of different farm sizes.

It should be borne in mind that the results presented in this section relate to the financial year 1949-50, and inevitably reflect the influence of prices and costs in that year.

COMPUTED CAPITALIZATION.

In obtaining the computed capitalization of sample farms, the land values taken were conservative and were related to 1949-50 bank security valuations; plant was taken in at depreciated book value; valuations for stock were obtained from survey data. Total capitalization, calculated in this way, was appreciably lower than the market value prevailing at the time.

AVERAGE CAPITALIZATION

Table No. 35 shows the average computed capitalization for the sample farms.

TABLE No. 35.—AVERAGE CAPITALIZATION: SAMPLE FARMS
1949–50

Type of farm.	Average capitalization per farm.	Average area.	Average capitalization per acre.
	£	acres.	£
Specialist producer	14,502	1,412	10.3
Main associated enterprise:			
Cereal cropping	19,849	2,200	9.0
Wool-growing	26,611	1,737	15.3
Beef production	19,507	1,042	18.7
Dairying	9,417	393	24.0
Other	17,669	982	18.0
All farms	19,416	1,817	10.7

For the whole sample, the average capitalization was more than £19,000 per farm, giving an average capitalization per acre of nearly £11. The fat lamb-wool farms were the most highly capitalized; most of these farms were in the high rainfall areas on well improved land, and were rather larger than other farms in similar areas. Fat lamb-dairying farms had the lowest capital value because they were by far the smallest, although highest in terms of capitalization per acre; all but one, which was irrigated, were situated in the more intensive high rainfall areas. Capitalization per acre was also fairly high in the case of beef production and "other" enterprises, and these also were mainly situated in the more intensive farming regions. These four groups of farms with fairly high capitalization per acre are in contrast to the fat lamb-cereal cropping farms. This enterprise represents a more extensive type of farming typical of the drier country. For specialist farms, average capitalization was fairly low, both per farm and per acre. This resulted from the influence of the small size of most specialist farms in the high rainfall zone, and the low value per acre of the larger specialist farms in the wheat-sheep zone.

The distribution of the total capitalization of sample farms is shown in Appendix III., Table No. 1. There was a wide range of values for the whole sample, the largest farm being capitalized at about 20 times the value of the smallest. Almost half of the farms, however, fell into the £5,000-£15,000 range. It was in groups of farms where husbandry can be either intensive or extensive—fat lambs alone or in conjunction with cropping or wool-growing—that the biggest variations in capitalization occurred.

Structure of Capitalization

Table No. 36 shows the capital structure of the sample farms, with the various items expressed as percentages of the average total capitalization for each group of farms.

TABLE No. 36.—CAPITAL STRUCTURE: SAMPLE FARMS
1949–50

Item.	Specialist producer.	Main associated enterprise.					All farms.
		Cereal cropping.	Wool-growing.	Beef production.	Dairying.	Other.	
	%	%	%	%	%	%	%
Land	70.5	72.5	71.1	72.0	75.7	67.0	71.8
Improvements(*a*)	7.5	6.1	4.8	2.7	2.7	12.4	5.9
Plant	4.0	7.1	3.6	3.0	6.4	7.5	5.8
Fat lamb flock ..	16.2	10.5	6.4	9.8	7.5	6.2	10.1
Other sheep ..	0.2	1.7	9.2	1.4	0.3	2.6	3.0
Cattle ..	1.3	1.7	4.5	10.7	6.8	3.8	2.9
Horses ..	0.3	0.3	0.4	0.4	0.5	0.4	0.4
Pigs	0.0	0.1	0.0	0.0	0.2	0.2	0.1
Total ..	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(*a*) Excluding value of residence.

For the whole sample, land and improvements comprised 77.7% of the total capitalization. This proportion did not vary greatly as between the

different groups, although the relative value of land as against improvements varied to some extent, particularly in the case of "other" enterprises, where the value of improvements was relatively high.

The other items of capital showed variations with the different associated enterprises. Thus, the value of plant was greatest for fat lamb-cereal cropping and fat lamb-"other" farms and was also fairly high for the fat lamb-dairying farms. The fat lamb flock was a greater proportion of total capital for the specialist producer, as were "other sheep" on fat lamb-wool farms. Cattle represented a large investment on fat lamb-beef and fat lamb-dairying farms. The value of cattle was also fairly high in the case of fat lamb-wool farms, and this may represent a third enterprise on some of them. Capitalization in other live-stock was generally insignificant.

RETURNS

Average Returns

Table No. 37 shows the average returns on the different groups of sample farms.

TABLE No. 37.—AVERAGE RETURNS: SAMPLE FARMS
1949–50

Farm group.	Returns from fat lamb enterprise.	Other returns.	Total.	Total returns per acre.
	£	£	£	£
Fat lamb-cereal cropping ..	3,310	4,432	7,742	3.5
Fat lamb-wool	2,989	3,771	6,760	3.9
Fat lamb-"other"	2,335	2,084	4,419	4.5
Specialist producer	4,145	59	4,204	3.0
Fat lamb-beef	3,327	695	4,019	3.9
Fat lamb-dairying	1,187	1,151	2,338	6.0
All farms	3,257	3,218	6,475	3.6

Fat lamb-cereal cropping farms had the highest average returns. On fat lamb-wool farms the average returns, although £1,000 less, were still much higher than for the other groups. The lowest average returns were for the fat lamb-dairying farms. In terms of returns per acre, however, the greatest returns per acre were from farms with more intensive land use. The low return per acre for the specialist producer was mainly due to the extensive type of production in the marginal areas in New South Wales. Differences in the proportion of returns which came from the fat lamb enterprise, for each group of farms, were discussed in Section IV.

For the whole sample, and for most of the different enterprise groups, there was a considerable range of gross returns; this is shown in Appendix III, Table No. 2. Just on one-half of the farms had returns between £1,000 and £5,000. Since the average was almost £6,500, it was considerably influenced by the extremely high returns from some farms. There were 38 farms with gross returns greater than £10,000 and 32 of these were farms where fat lamb raising was associated with cereal cropping.

Returns from the Fat Lamb Enterprise

As Table No. 38 shows, the returns from wool and from fat lambs were of the same order in all cases.

TABLE No. 38.—PERCENTAGE RETURNS FROM THE FAT LAMB ENTERPRISE: SAMPLE FARMS
1949–50

Type of farm.	Returns from fat lamb enterprise.	
	Wool.	Fat lambs.
	%	%
Specialist producer	58.3	41.7
Main associated enterprise :		
Cereal cropping	57.7	42.3
Wool-growing	51.6	48.4
Beef production	54.6	45.4
Dairying	58.1	41.9
"Other"	53.6	46.4
All farms	56.6	43.4

Some of the variation in the different proportions of returns derived from fat lambs and wool may have been due to shearing lambs as well as ewes on some farms. This would result in a lower price per lamb and an increase in the amount of wool sold, thus increasing wool returns at the expense of returns from fat lambs. Another factor would possibly be the number of specialist producers who produced lambs from merino ewes. Of all groups, the fat lamb-wool farms had the lowest proportion of returns derived from wool. This was probably due to older ewes from a wool flock being used for fat lamb production on these farms, resulting in lower wool returns. For fat lamb-wool farms, the wool cut per head of fat lamb ewes was almost 1 lb. lower than that for any other group.

Average figures of wool cut per head and price per lb., and price received per lamb, for each group of farms are shown in Table No. 39.

TABLE No. 39.—RETURNS FROM THE FAT LAMB ENTERPRISE: SAMPLE FARMS
1949–50

Type of farm.	Wool cut per head.	Wool price per lb.	Price per lamb.
	lb.	pence.	shillings.
Specialist producer	9.5	58	48
Main associated enterprise :			
Cereal cropping	9.6	50	44
Wool-growing	8.5	55	47
Beef production	9.6	53	48
Dairying	9.3	57	43
"Other"	9.4	58	49
All farms	9.5	52	46

Wool Cut Per Head.—In the preceding section, an analysis of cut per head showed a zonal difference and some minor differences in cuts of different breeds of ewes. The similarity of the cuts per head for all but one of the groups of farms in the present analysis is, therefore, somewhat surprising. Only on fat lamb-wool farms was the cut per head different.

Wool Prices.—Differences in price per lb. of wool for the different farm groups are reflections, principally, of the time when the bulk of the wool from each group was sold. During the 1949-50 wool selling season, prices were considerably below the season's average in September, October and

November. Each of the three groups of farms which obtained the lowest average wool prices—fat lamb-cereal cropping, fat lamb-beef and fat lamb-wool farms—sold more than half their wool in this period of lower prices.

Price per Lamb.—The average gross price received for all fat lambs sold from the sample properties in 1949-50 was £2 6s. per head. Differences in price for the different groups of farms were not great, with fat lamb-cereal cropping and fat lamb-dairying farms slightly below the average and all other groups above it.

Returns per £1,000 Capitalization

Because of the variation in the scale of enterprise on the sample farms, figures of returns per property do not give a satisfactory basis of comparison between groups of farms. Nor are the figures of returns per acre a suitable measure, due to the difference in the types of country on sample farms. A measure which minimizes the effects of different scales of enterprise is obtained if farm returns are related to the computed capital value of the farm, as is shown in Table No. 40.

TABLE No. 40.—AVERAGE RETURNS PER £1,000 CAPITAL: SAMPLE FARMS 1949–50

Farm group.	Average returns per £1,000 capitalization.
	£
Fat lamb-cereal cropping	390
Specialist producer	290
Fat lamb-wool	254
Fat lamb-" other "	250
Fat lamb-dairying	248
Fat lamb-beef	206
All farms	333

The fat lamb-cereal cropping group of farms had the highest average returns in relation to computed capital and fat lamb-beef farms the lowest.

The distribution of returns per £1,000 capitalization (Appendix III., Table No. 3) shows clearly the advantage held when fat lamb raising and cereal cropping were associated: 36 of the 38 farms on which returns exceeded £500 per £1,000 investment were of this type. As a result of the high values for these fat lamb-cereal cropping farms, the range for the whole sample was great. How great the range was is indicated better by the fact that gross returns ranged from 10% of the computed capital to almost 100%.

COSTS

In the following discussion of costs, all costs are included except: (1) interest paid, and (2) an allowance for the operator's labour and management. These items are later considered in a discussion of farm income. Not all rent paid has been shown as a cost, since all properties were valued on a freehold basis, and rent has only been charged in such cases as rented roads, or where some land has been rented for only part of the survey year.

AVERAGE COSTS

The average costs per farm for the sample farms, subdivided according to their main associated enterprise, are shown in Table No. 41.

TABLE No. 41.—AVERAGE COSTS PER SAMPLE FARM
1949–50

Farm group.	Average costs per farm.
	£
Fat lamb-cereal cropping	3,547
Fat lamb-wool	3,068
Fat lamb-" other "	2,809
Fat lamb-beef	2,202
Specialist producer	1,740
Fat lamb-dairying	1,201
All farms	2,993

Fat lamb-cereal cropping farms had the highest average costs and fat lamb-dairying farms the lowest. Differences between the costs of the groups represent differences in types of husbandry and in scale of enterprise. For example, crop sowing and harvesting costs inflated farm costs of the fat lamb-cereal cropping and fat lamb-" other " groups; similarly the larger farm size of fat lamb-wool farms increased costs for that group.

The distribution of costs on the sample farms is shown in Appendix III., Table No. 4. For the whole sample there was a very considerable range, from less than £1,000 to more than £23,000 in one extreme case. Costs on half of the farms, however, were between £1,000 and £3,000, while 173 of the 200 sample farms had costs below £5,000. Of the other 27 farms with costs above this figure, 23 were fat lamb-cereal cropping farms, and all four farms with costs over £10,000 were from this group. A comparison between the two sections of producers concerned only with sheep—the specialist fat lamb farms, and the fat lamb-wool farms—shows that the majority of specialist farms had costs under £3,000, while the majority of fat lamb-wool farms had costs greater than this.

COSTS PER £1,000 CAPITALIZATION

To minimize the effects of farm size, and thus enable a more valid comparison of costs for the different groups of farms, the costs per £1,000 capitalization were calculated. The average costs per £1,000 capital are shown in Table No. 42 and the distribution of the values for all farms in Appendix III., Table No. 5.

TABLE No. 42.—AVERAGE COSTS PER £1,000 CAPITAL: SAMPLE FARMS
1949–50

Farm group.	Average costs per £1,000 capital invested.
	£
Fat lamb-cereal cropping	179
Fat lamb-" other "	159
Fat lamb-dairying	128
Specialist producer	120
Fat lamb-wool	115
Fat lamb-beef	113
All farms	154

Average costs per £1,000 investment for the different groups were in line with the amount of labour and materials required for the associated enterprises. High costs of cereal cropping and, to a lesser extent, of other crops, resulted in fat lamb-cereal cropping farms, followed by fat lamb-"other" farms, having the highest costs per £1,000. Costs for the remaining groups were fairly closely grouped, with fat lamb-dairying costs slightly above the other stock raising enterprise farms as a result of extra fodder costs.

COST STRUCTURE

Table No. 43 shows the average cost structures of the groups of sample farms, with the various cost items expressed as percentages of total farm costs.

TABLE No. 43.—COST STRUCTURES: SAMPLE FARMS
1949–50

Item.	Specialist producer.	Main associated enterprise.					All farms.
		Cereal cropping.	Woolgrowing.	Beef production.	Dairying.	Other.	
	%	%	%	%	%	%	%
Labour (*a*) ..	11.1	16.0	19.3	21.8	19.2	31.3	16.9
Shearing and crutching	5.7	2.9	5.6	3.2	2.2	2.5	3.5
Fuel	4.7	8.0	5.5	4.5	5.6	7.6	7.1
Fertilizer.. ..	3.1	4.9	6.6	8.9	9.2	5.2	5.3
Seed	1.4	1.9	1.4	0.8	1.0	3.0	1.8
Fodder	0.7	0.7	1.4	0.7	5.8	3.1	1.0
Bags and packs ..	2.0	5.5	2.2	1.3	0.9	3.9	4.4
Maintenance:							
Machinery ..	4.4	8.2	5.4	6.3	5.3	8.3	7.3
Structures ..	5.3	5.1	7.7	5.3	7.7	6.0	5.6
Freight and cartage	7.1	9.4	6.0	5.1	3.3	3.4	8.2
Selling charges ..	9.0	4.4	8.9	8.5	5.7	4.7	5.7
Rent	0.1	..	0.2	..	..	..	..
Rates and taxes ..	4.2	2.7	2.6	3.8	4.3	2.6	2.9
Insurance ..	1.1	1.9	1.4	1.4	1.1	1.9	1.7
Depreciation ..	15.3	16.1	11.5	12.3	12.1	11.0	14.9
Miscellaneous(*b*) ..	5.1	3.4	6.1	6.3	4.8	3.0	4.1
Maintenance: Fat lamb flock ..	19.7	8.9	8.2	9.8	11.8	2.5	9.6
Total ..	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(*a*) Does not include allowance for farmer's own labour.
(*b*) Includes bank, legal and accountancy expenses, stationery, telephone, stamps, agistment, and farm supplies such as drenches, dips, &c.

Basically, the cost structures of the different groups of farms were similar; variations from the common pattern were a matter of degree, depending on the enterprise associated with fat lamb production. The greatest variations occurred in the following cost items:—

Labour.—The influence of seasonal labour costs for such operations as potato digging and pea and bean picking on fat lamb-"other" farms resulted in labour costs being a much higher percentage for that group of farms. On the other hand, the low percentage of costs represented by labour on specialist fat lamb farms was a reflection of the number of "one man" farms in this group.

Shearing and Crutching.—These were of greatest weight where the whole farm enterprise was confined to sheep.

Fuel, Seed, Bags and Packs and Maintenance (Machinery).—All of these items showed the influence of cropping in the farm enterprise. Together they made up about 23% of farm costs for both fat lamb-cereal cropping and fat lamb-"other" farms, as against about 13% for the other four groups.

Fertilizer.—Fertilizer costs were a reflection of the large proportion of super. used in pasture improvement. These costs were a smaller share of the total on the farms undertaking cropping than on those carrying stock mainly on improved pasture.

Fodder.—The influence of dairying and pig-raising on fodder costs is apparent.

Freight and Cartage.—Differences between the groups in freight and cartage costs resulted from the comparatively high costs of wheat and stock freights.

Selling Charges.—Selling charges were heavier on farms concerned principally with livestock, which were normally sold on commission at rates of from 3% to 5%.

Fat Lamb Flock Maintenance.—The high percentage of farm costs represented by this item on specialist farms was to be expected. The extremely low percentage for this item in the costs of fat lamb-"other" farms resulted from a low ewe mortality rate (3.5% for the group against 7.5% for all sample farms) and a high average price for ewes sold. While low mortality and high prices for cull ewes may be typical of this group of farms, results based on a sample of only eight could easily be biased by accidents of sampling. There does not seem to be any logical reason for such a great variation from the other groups and from the whole sample.

NET FARM INCOME

Net farm income is the amount obtained by deducting farm costs from total returns. It is thus the amount available to meet all charges on the capital invested in the property and to recompense the farmer for his labour and management. The average net farm incomes for the different groups of farms, classified by the enterprises associated with fat lamb production, are shown in Table No. 44.

TABLE No. 44.—AVERAGE NET FARM INCOME: SAMPLE FARMS 1949–50

Farm group.	Average returns.	Average costs.	Average net farm income.
	£	£	£
Fat lamb-cereal cropping	7,742	3,547	4,195
Fat lamb-wool	6,760	3,068	3,692
Specialist producer	4,204	1,740	2,464
Fat lamb-beef	4,019	2,202	1,817
Fat lamb-"other"	4,419	2,809	1,610
Fat lamb-dairying	2,338	1,201	1,137
All farms	6,475	2,993	3,482

Fat lamb-cereal cropping farms, followed by fat lamb-wool farms, had the highest net farm income, principally because of their high gross returns. On the other hand, the comparatively high net income received by specialist producers resulted largely from lower farm costs. For the remaining groups of farms, farm costs averaged more than half of the gross returns and net farm incomes were on a lower level.

The range of values for each group of farms, which is shown in Appendix III., Table No. 6, is so great that averages for the groups cannot be taken as adequately representing the group as a whole. Net farm incomes ranged from a deficit of £664 to an income of £15,893. Five farms showed a deficit on the year's operations; four of these were fat lamb-cereal cropping farms, while the other farm sustaining a loss had dairying as the associated enterprise.

The majority of the sample farms (135 of the 200) produced net incomes between £1 and £4,000. No fat lamb-dairying, fat lamb-beef or fat lamb-"other" farms had net farm incomes above £4,000, the highest individual figure for these groups being £3,700 for a fat lamb-beef farm, with all other farms of these three groups having net incomes below £3,000. Of the 60 farms with incomes above £4,000, five were specialists, eight were fat lamb-wool farms and the other 47 were fat lamb-cereal cropping farms. This means that 16% of specialists, 28% of fat lamb-wool farms and 41% of fat lamb-cereal cropping farms produced net farm incomes above £4,000 while no farms of the other groups were in this category.

Net Farm Income per £1,000 Capitalization

It could be expected that size of enterprise was the chief factor in the variation of net farm incomes. Relating net farm income to the computed capital of farms, however, reduced the relative variation only slightly. The average figures of net farm income per £1,000 of computed capital are thus little more typical of the farm groups than was the net farm income itself. Net farm incomes per £1,000 computed capital are shown in Table No. 45 as group averages and in Appendix III. Table No. 7 as distributions.

TABLE No. 45.—AVERAGE NET FARM INCOME PER £1,000 CAPITAL: SAMPLE FARMS
1949–50

Farm group.	Average returns per £1,000 capital.	Average costs per £1,000 capital.	Average net farm income per £1,000 capital.
	£	£	£
Fat lamb-cereal cropping	390	179	211
Specialist producer	290	120	170
Fat lamb-wool	254	115	139
Fat lamb-dairying	248	128	120
Fat lamb-beef	206	113	93
Fat lamb-"other"	250	159	91
All farms	333	154	179

In relation to the capital investment, fat lamb-cereal cropping farms still had the highest net farm income; and most high individual values again came from this group of farms.

The next highest average was that of the group of specialist producers. A number of these farms were so small that they could not provide large net farm incomes, although their earning capacity was quite high in relation to their capitalization. Thus, when net farm income was related to capital investment the group of specialist farms showed a better average result than fat lamb-wool farms.

The average results of the remaining three groups—fat lamb-dairying, fat lamb-beef and fat lamb-"other" farms—were again the three lowest, although in this case there was not nearly so wide a distinction between them and the first three groups as appeared in Table No. 44. The average for fat lamb-dairying farms, in fact, was little below that of fat lamb-wool farms.

LABOUR AND MANAGEMENT INCOME.

Net farm income, as the term is used in the preceding paragraphs, covers the amount available to recompense the farmer for his labour and management and to meet all charges on capital. To derive a further measure of comparison, the return to labour and management can be separated out by deducting interest on the total capitalization of each farm, calculated at a standard rate. Here, the rate of interest has been arbitrarily taken as 4½% throughout. By deducting this 4½% interest on the capital investment from the net farm income, the amount accruing to the farmer is obtained, and it is this figure which is referred to as the "labour and management income".

Average labour and management incomes for the different groups of farms are shown in Table No. 46.

TABLE No. 46.—AVERAGE LABOUR AND MANAGEMENT INCOME: SAMPLE FARMS
1949–50

Farm group.	Average net farm income.	Interest on average total capital (at 4½%).	Average labour and management income.
	£	£	£
Fat lamb-cereal cropping	4,195	894	3,301
Fat lamb-wool	3,692	1,197	2,495
Specialist producer	2,464	652	1,812
Fat lamb-beef	1,817	878	939
Fat lamb-"other"	1,610	795	815
Fat lamb-dairying	1,137	424	713
All farms	3,482	874	2,608

Fat lamb-cereal cropping farms had the highest average labour and management income. Because of the higher capitalization of the fat lamb-wool farms, this group did not show as great an advantage over the specialist producers as they did in average net farm income. For the remaining groups of farms the difference in average labour and management incomes was small.

The distribution of labour and management incomes is shown in Appendix III, Table No. 8. The distribution table shows the extreme range for the first three groups of farms. In all, 17 farms showed a deficit

and 140 provided a labour and management income of less than £4,000. A labour and management income greater than £4,000 was given by the remaining 43 farms; of these, 36 were fat lamb-cereal cropping farms.

Of the 200 sample farms, 42 returned a labour and management income of less than £600.

RETURN TO CAPITAL.

An alternative to labour and management income as a measure of financial performance may be obtained by regarding all farms as if they were operated by paid managers and calculating the return which accrues to the capital invested in the farm. This has been done by making an arbitrary allowance of £600 for the operator's labour and management. If this is deducted from the net farm income, the balance is the return to capital and this, when related to the capital investment, gives the *rate of return* to capital. This measure provides a valid comparison of the profitability of the farms, individually or in groups. Average rates of return to capital for the groups of farms are shown in Table No. 47.

Figures in the table do not represent the rate of return on the market value of the capital investment. Since capitalization of land has been based on long-term security values, and plant has been included at depreciated values, total capitalization is considerably below what would have been the market value in 1949-50. The rate of return to capital shown is therefore considerably higher than if it had been related to the market value at that time.

TABLE No. 47.—AVERAGE RATE OF RETURN TO CAPITAL: SAMPLE FARMS 1949–50

Farm group.	Average rate of return to capital.
	%
Fat lamb-cereal cropping	18.1
Specialist producer	12.9
Fat lamb-wool	11.6
Fat lamb-beef	6.2
Fat lamb-" other "	5.7
Fat lamb-dairying	5.7
All farms	14.8

Rated by profitability, the groups of sample farms fall into three classes. By far the most profitable in 1949-50 was the group of farms on which fat lambs and cereal cropping were associated. Next were the two groups of farms where the enterprise was confined to sheep alone—the fat lamb specialists and the fat lamb-wool farms. On a much lower level of profitability were the remaining three groups, where fat lambs were run in conjunction with cattle—either beef or dairying—or with other farm enterprises. These divisions are so marked that, even allowing for the variations of individual farm figures within the groups (*see* Appendix III, Table No. 9), the differences between the three classes are statistically significant.

The very large range of values in each group of farms and for the whole sample is an indication of the complexity of the industry. Of the 200

sample farms, 47 gave a rate of return to capital of more than 22½%, 111 between 22½% and 4½%, while the remaining 42 farms failed to give a return of 4½%.

Criteria of a satisfactory financial performance, in line with the then current labour and interest rates, could be taken as a labour and management income of £600, or alternatively, a return to capital of 4½%. By these criteria 42 farms failed to give satisfactory financial results, since the 42 farms which gave a labour and management income of less than £600 were, of course, the same farms which failed to return 4½% on the capital investment. These 42 farms were distributed among the different farm groups as follows:—

Specialist producer	12
Fat lamb-cereal cropping	13
Fat lamb-wool	6
Fat lamb-dairying	4
Fat lamb-beef	5
Fat lamb-"other"	2

For all but the fat lamb-cereal cropping group of farms, and for the sample as a whole, the proportion of "failures" represented more than 20% of farms; this seems a very high figure for a year when seasonal conditions were good and prices received for most farm products are generally recognized as having been satisfactory.

EFFECT OF FARM SIZE ON FINANCIAL RESULTS.

Table No. 48 gives the farms which "succeeded" and those which "failed", classified according to farm size.

TABLE No. 48.—DISTRIBUTION OF FARM SIZE: SAMPLE FARMS (AREA)
1949–50

Acres.	Farms "failing".	Farms "succeeding".
	No. of farms.	No. of farms.
101– 200	3	2
201– 300	2	6
301– 400	5	6
401– 500	6	7
501– 600	6	4
601– 700	4	7
701– 800	..	11
801– 900	1	4
901–1,000	1	9
1,001–1,500	3	27
1,501–2,000	3	17
2,001–2,500	1	14
2,501–3,000	..	15
3,001–3,500	2	6
3,501–4,000	2	4
4,001–4,500	..	2
4,501–5,000	1	8
5,001–5,500	2	4
5,501–8,000	..	5
Total	42	158

Almost as many farms under 700 acres failed as succeeded; above 700 acres the proportion of farms failing was much lower. It can, therefore, be assumed that below 700 acres, farm size was a contributing factor to failure. An examination of the farms in this size group was made, with the purpose of discovering what other factors were important in the success or failure of small farms.

There were 58 sample farms below 700 acres in area, and a comparison was made between the 26 of those which failed and the 32 which succeeded. In these two groups of farms the proportions in each zone (high rainfall, wheat-sheep, and irrigation) were similar.

The groups were then compared according to four main features, and the results are summarized in Table No. 49.

TABLE No. 49.—COMPARISON OF SAMPLE FARMS UNDER 700 ACRES
1949–50

	Farms "failing".		Farms "succeeding".	
	Average.	Standard deviation.	Average.	Standard deviation.
Area (acres)	442	151	422	156
Capitalization (£)	9,987	4,225	8,997	3,458
Farm costs (£)	1,376	645	1,283	629
Returns (£)	1,932	645	3,151	1,203

Area: There was no significant difference between the average area of the farms of each of the two groups. Thus, once within this size group, farm size does not appear to have been a factor affecting success or failure.

Total Capitalization: Although the farms failing showed a slightly higher average capitalization than the others, there was no significant difference between the averages when examined statistically. Thus, capitalization does not appear to have been a factor affecting to any extent the different financial performance of the two groups of farms. There was an even smaller difference between the capitalization of the groups on a per acre basis. In the capital structure of the two groups, the amounts making up value of land and of stock and plant were similar.

Farm Costs: The farms failing showed slightly higher costs than the others, but the difference between the two groups was not statistically significant. In relation to the total capital invested, the farms failing showed lower costs than the others.

Returns: The farms which were successful financially had returns more than 60% greater than those which failed. This was the only measure in which the two groups differed significantly. The difference between "success" and "failure" thus appears to have depended on the manner in which a farm of given size, capitalization and cost commitments is made capable of providing higher returns.

There was little difference between the flock sizes of the two groups, and since capitalization was similar there is no reason to suspect that there was any fundamental difference in the productive capacity of the land. A partial explanation may be found from the enterprises on the two groups of small farms, which are shown in Table No. 50.

TABLE No. 50.—SAMPLE FARMS UNDER 700 ACRES: BY ASSOCIATED ENTERPRISE 1949–50

Type of farm.	Farms "failing".	Farms "succeeding".
Specialist producer	9	7
Main associated enterprise :		
Cereal cropping	7	10
Wool-growing	3	3
Dairying	4	5
Beef production	3	1
Other	..	6
Total	26	32

A further point is that, if specialists are excluded, the farms which succeeded placed less reliance on fat lamb production as a source of returns (only 10 of the 25 received more than 50% of their return from the fat lamb enterprise), than the failures (11 of the 17 received more than 50% of their returns from the fat lamb enterprise).

These points do not, by any means, give a complete explanation of the difference between the results of the two sets of farms. In any case, the choice of enterprises, or the balance between enterprises on a farm, are results of a far more embracing factor, farm management. Although financial results in any one year may be affected by seasonal conditions, pests and diseases, or even by the chance catching of a good market for the farm produce, in the long run results will depend primarily on the personal efficiency of the farmer as a manager.

APPENDIX I

SURVEY AREAS

NEW SOUTH WALES (TOTAL 82 FARMS)

Shires.	Survey area No.	Ewes mated to British breed rams for 1949 lambing.	50% of ewes mated to Corriedale and Polwarth rams in shires marked *.	Fat lamb ewes.	Number of sample farms.
Abercrombie, Turon*, Oberon, Canobolas*, Crookwell ..	1	199,693	12,130	211,823	4
Mulwaree, Gunning, Tumut*, Goodradigbee, Yarrowlumla, Tumbarumba*, Snowy River	2(*a*)	224,258	35,898	260,156	4
Barraba, Boolooroo, Bingara, Yallaroi, Mandowa, Cockburn	3	148,540	..	148,540	2
Namoi	4	316,464	..	316,464	5
Liverpool Plains, Peel, Nundle, Tamarang, Murrurundi ..	5	395,513	..	395,513	7
Walgett, Wingadee	6	298,828	..	298,828	5
Coonabarabran, Gilgandra, Marthaguy	7	201,780	..	201,780	3
Coolah, Gulgong, Merriwa, Wellington*, Amaroo*, Cudgegong, Rylstone	8	278,326	43,633	321,959	5
Timbrebongie, Talbragar ..	9	251,670	..	251,670	4
Goobang, Jemalong, Boree ..	10	289,169	..	289,169	5
Lyndhurst, Waugoola ..	11	217,320	..	217,320	4
Burrangong, Boorowa, Jindalee, Demondrille, Gundagai ..	12	219,575	..	219,575	4
Bland, Narraburra, Coolamon, Illabo, Weddin	13	348,726	..	348,726	6
Mitchell, Lochhart, Kyeamba*, Culcairn*, Holbrook*, Hume*, Coreen	14	339,217	116,575	455,792	8
Bogan, Lachlan, Yanko, Urana	15	300,462	..	300,462	5
Carrathool, Wade, Leeton ..	16	134,108	..	134,108	2
Jerilderie, Conargo, Berrigan, Wakool, Murray, Windouran	17	551,054	..	551,054	9
Total				4,922,939	82

(*a*) Includes Australian Capital Territory.

VICTORIA (TOTAL 75 FARMS)

County.	Survey area No.	Ewes mated to British breed rams for 1949 lambing.	10% of ewes mated to wool type rams.	Fat lamb ewes.	Number of sample farms.
Millewa, Weeah, Karkarooc ..	1	377,239	10,822	388,061	6
Tatchera	2	249,867	2,292	252,159	4
Gunbower, Rodney	3	443,824	11,221	455,045	7
Moira	4	542,938	10,336	553,274	8
Lowan, Borung, Kara Kara ..	5	416,090	76,994	493,084	7
Gladstone, Bendigo	6	325,174	20,470	345,644	5
Dundas, Follet, Normanby ..	7	207,345	51,376	258,721	4
Ripon, Hampden, Grenville ..	8	217,044	79,724	296,768	5
Villiers, Heytesbury, Polwarth	9	158,976	30,574	189,550	3
Talbot, Dalhousie	10	266,465	22,929	289,394	4
Grant, Bourke	11	352,959	22,279	375,238	6
Delatite, Anglesey	12	371,413	24,322	395,735	6
Evelyn, Mornington, Buln Buln	13	288,032	7,072	295,104	5
Tanjil, Wonnangatta, Dargo, Tambo, Croajingolong ..	14	124,367	17,292	141,659	2
Bogong, Benambra	15	218,607	12,068	230,675	3
Total				4,960,111	75

SOUTH AUSTRALIA (TOTAL 26 FARMS)

County.	Survey area No.	Ewes mated to British breed rams for 1949 lambing.	Number of sample farms.
Buckingham, Cardwell, Grey, MacDonnell, Robe	1	342,364	7
Albert, Alfred, Buccleuch, Chandos, Hamley, Young	2	114,836	2
Russell, Hindmarsh, Adelaide, Sturt	3	265,296	6
Eyre, Light, Gawler, Ferguson, Daly, Stanley, Burra, Victoria, Kimberley, Frome, Dalhousie, Herbert	4	497,552	10
Flinders, Musgrave, Jervois	5	35,098	1
Total		1,255,146	26

WESTERN AUSTRALIA (TOTAL 10 FARMS)

Road Board District.	Survey area No.	Ewes mated to British breed rams for 1949 lambing.	Number of sample farms.
Carnamah, Cunderdin, Dowerin, Dalwallinu, Geraldton, Koorda, Goomalling, Greenough, Moora, Kellerberrin, Kununoppin-Trayning, Merredin, Mount Marshall, Nungarin, Perenjori, Tammin, Victoria Plains, Wongan-Ballidu, Wyalkatchem, Bruce Rock, Corrigin, Gnowangerup, Narembeen, Quairading	1	361,726	5
Dandaragan, Gingin, Irwin, Mingenew, Three Springs, Albany, Armadale-Kelmscott, Balingup, Upper Blackwood, Bridgetown, Chittering, Collie, Cranbrook, Dardanup, Drakesbrook, Harvey, Manjimup, Murray, Nannup, Plantaganet, Serpentine, Jarrahdale, Preston, Swan, West Arthur, Beverley, Brookton, Cuballing, Kojonup, Marradong, Narrogin, Northam, Pingelly, Tambellup, Toodyay, Wandering, Williams, York	2	329,663	5
Total		691,389	10

TASMANIA (TOTAL 10 FARMS)

Municipality.	Survey area No.	Ewes mated to British breed rams for 1949 lambing.	Number of sample farms.
Burnie, Devonport, Kentish, Latrobe, Penguin, Ulverstone, Wynyard	1	62,004	2
Deloraine, Beaconsfield, Fingal, Georgetown, Lilydale, Portland, Ringarooma, Scottsdale, Ross, Evandale, Langford, Westbury, St. Leonards, Campbelltown, Oatlands, Glamorgan	2	181,505	5
Glenorchy, Bothwell, Hamilton, Brighton, Clarence, Richmond, Green Ponds, Sorell, Bruny, Spring Bay, Huon, Kingborough, New Norfolk, Port Cygnet, Tasman	3	93,423	3
Total		336,932	10

QUEENSLAND(a) (TOTAL 10 FARMS)

Shire.	Survey area No.	Sheep at March 31, 1950.		Total weight.	Number of sample farms.
		Crossbred.	50% of Comebacks.		
Wambo, Tara, Johndaryan ..	1	36,909	6,870	43,779	5
Clifton, Inglewood, Milmerran, Pittsworth	2	43,808	5,101	48,909	5
Total				92,688	10

(a) In Queensland, breeds other than Merino are so small a proportion of the sheep population that the only statistics collected of them are their total numbers. There are, therefore, no figures available of the number of ewes mated to British breed rams. The survey area in Queensland was confined to seven shires of the Darling Downs Division, which carry more than 60% of the crossbred and comeback sheep in Queensland; it was on the numbers of crossbred sheep, plus 50% of comebacks, that the sample was allocated among these seven shires.

APPENDIX II

METHODS OF ANALYSIS

In calculating costs, returns and income for the sample properties the following procedure was adopted.

CAPITAL VALUES

Capital values were taken as at July 1, 1949.

Value of Land: All properties in the survey, except those in Tasmania, were valued by senior officers of the Commonwealth Bank from information contained in the questionnaires. This value included fencing, water supply and all structures except the residence. All valuations were on the basis of freehold, and were in line with the Bank's "Standard Values" which represent a conservative valuation for security purposes. For Tasmania, valuations on a comparable basis were made by officers of the State Department of Agriculture. The value of land only was calculated by deducting the value of improvements—as shown for income tax purposes—from the improved value of the property as obtained from these sources.

Plant: The value of plant as shown for income tax purposes was taken.

Live-stock: The average price of live-stock (other than fat lambs) purchased or sold by the sample farms in each State was taken as the value of stock for all properties in that State. The sheep values obtained in this way were checked with monthly figures of store sheep prices collected by the Bureau of Agricultural Economics and were found to agree closely. For horses and pigs, values found for New South Wales and Victoria were used for the other States, where numbers purchased and sold by sample farms were too small to give reliable values. Values were as follows:—

State.	Fat lamb flock.		Other sheep.	Cattle.	Horses.	Pigs.
	Ewes.	Rams.				
	£	£	£	£	£	£
New South Wales ..	2.3	7	2.7	15	16	5.5
Victoria	2.3	9	2.4	16	16	5.5
South Australia ..	2.0	9	3.6	12	16	5.5
Western Australia ..	2.3	9	2.3	18	16	5.5
Tasmania	2.1	8	2.1	17	16	5.5
Queensland	2.7	8	3.6	11	16	5.5

PROFITS OR LOSSES FROM STOCK TRADING

For the purpose of determining profits or losses from stock trading, stock were regarded in two categories: (*a*) the fat lamb flock; (*b*) all other stock.

(*a*) The fat lamb flock was itself considered in two parts: lambs, the sale of which constituted a return, and ewes and rams, the maintenance of which constituted a cost.

Returns from the sale of lambs comprised:

(i) Gross returns from the sale during 1949-50 of all lambs, either on hand at July 1, 1949, or produced during 1949-50.

(ii) Gross profit on lambs purchased for fattening and sold during 1949-50.

(iii) Value of lambs retained as ewe replacements for the fat lamb flock (calculated at average price of lambs sold by the sample farm concerned during 1949-50).

The flock maintenance cost was taken as the loss on the fat lamb flock account. This loss (a few properties showed a profit but the aggregation of any group of properties showed a loss) was calculated on a stock trading account basis. Stock on hand on July 1, 1949, were valued as for capitalization. Ewe lambs retained were regarded as a purchase from the fat lamb account, at the average price of lambs sold, and stock on hand on June 30, 1950, were valued at their average cost.

(*b*) A separate account was kept for each of the other types of stock and profits and/or losses combined to give either a profit or loss on stock trading for the property. No group of properties showed an average loss on stock accounts so that this item does not appear as a cost.

Normal procedure was followed in calculating profits or losses for each stock account, with stock on hand at July 1, 1949, taken in at capitalization value and natural increase included at standard values.

RETURNS

Returns from properties were treated in two ways: (*a*) the return from the fat lamb enterprise; and (*b*) total return.

(*a*) *Return from the fat lamb enterprise* consisted of—

(i) Returns from the sale of lambs.

(ii) Gross returns from the sale of wool from the fat lamb flock (ewes and rams from which fat lambs are produced and lambs under 12 months old).

(iii) Profit on flock maintenance (if any).

(iv) Sale of skins from the fat lamb flock.

(*b*) *Total return* consisted of all returns, including that from the fat lamb enterprise. The only returns which require explanation are those from the sale of wheat and barley through the Wheat Board and Barley Board. In both cases the full value of the 1949-50 crop was not received by farmers in 1949-50, and later payments from earlier crops were received in the year under review. So that returns would be consistent with the produce of the farm in the survey year, payments from previous crops were neglected and farmers credited with the ultimate gross value of wheat or barley delivered to the Boards in 1949-50. These values were estimated to be:

	Per bushel.
	s. *d.*
Bagged wheat	13 6
Bulk wheat	13 0
Barley	10 3½

Freights deducted from payments by the Wheat and Barley Boards were included in costs.

Where a property showed a profit on stock trading (other than in the fat lamb flock) this was included in the total return.

Costs

(*a*) *Labour.*—Labour costs were divided into—

(i) Farmer's labour.

(ii) Other labour.

(i) *Farmer's Labour.*—Each property was treated as if run by an unpaid owner-operator. Where in fact the operator was a manager or managing partner and received wages, these were deducted from total wages paid to bring such properties into line with the remainder.

In the case of two or more partners running a property, one was regarded as the owner-operator and the other or others as unpaid labour.

No allowance for farmer's labour has been made in farm costs. Where, in the analysis of income, an allowance for the operator's labour and management was necessary, this was fixed at £600 for all properties.

(ii) *Other Labour.*—Other labour consists of—

Unpaid labour: Calculated at the current award rates for station hands whose work is not confined to "at or about the homestead", unpaid labour for the year 1949-50 was at the average rate of £388 per annum (unfound).

Paid labour: Actual wages paid.

Stores and rations: Actual amount claimed for income tax when employees were paid at found rates.

Contracts: Contracts which consisted mainly of a labour nature Actual amount paid.

(*b*) *Rent.*—As properties were capitalized on a freehold basis rent was excluded, except in a few cases where land was rented for a period of the year only.)

(*c*) *Depreciation.*—Depreciation was allowed at the amount actually claimed as a deduction for income tax purposes.

(*d*) *Interest.*—Interest was allowed at 4½% on the total capital investment in the property. As a result, interest on borrowed money was neglected.

All other cost items are the amounts actually paid by the operator or deducted from such returns as wool, wheat and stock sold.

APPENDIX III

TABLE No. 1.—DISTRIBUTION OF CAPITAL VALUES: SAMPLE FARMS 1949–50

Farm capitalization.	Specialist producer.	Main associated enterprise.					All farms.
		Cereal cropping.	Wool growing.	Beef production.	Dairying.	Other.	
	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.
Under £5,000	4	2	..	..	..	1	7
£5,000 and under £10,000	7	28	7	..	5	3	50
£10,000 ,, ,, £15,000	9	28	1	3	4	2	47
£15,000 ,, ,, £20,000	4	17	1	3	..	..	25
£20,000 ,, ,, £25,000	2	14	2	4	..	..	22
£25,000 ,, ,, £30,000	3	7	4	..	..	..	14
£30,000 ,, ,, £35,000	..	5	7	2	..	..	14
£35,000 ,, ,, £40,000	..	1	1	..	..	1	3
£40,000 ,, ,, £45,000	..	3	3	..	..	..	6
£45,000 ,, ,, £50,000	..	2	1	..	..	..	3
£50,000 ,, ,, £55,000	1	..	..	..	..	1	2
£55,000 ,, ,, £60,000	..	3	..	..	..	..	3
Over £60,000	..	3	1	..	..	..	4
Total	30	113	28	12	9	8	200

TABLE No. 2.—DISTRIBUTION OF GROSS RETURNS: SAMPLE FARMS 1949–50

Gross returns.	Specialist producer.	Main associated enterprise.					All farms.
		Cereal cropping.	Wool growing	Beef production.	Dairying.	Other.	
	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.
Under £1,000	1	..	..	..	..	..	1
£1,000 and under £2,000	8	8	1	2	2	2	23
£2,000 ,, ,, £3,000	2	7	4	2	6	1	22
£3,000 ,, ,, £4,000	8	17	3	1	1	1	31
£4,000 ,, ,, £5,000	4	13	1	3	..	2	23
£5,000 ,, ,, £6,000	2	4	3	3	..	1	13
£6,000 ,, ,, £7,000	..	16	2	1	..	..	19
£7,000 ,, ,, £8,000	2	5	5	..	..	..	12
£8,000 ,, ,, £9,000	..	6	2	..	..	..	8
£9,000 ,, ,, £10,000	1	6	3	..	..	..	10
£10,000 ,, ,, £11,000	1	8	..	..	..	..	9
£11,000 ,, ,, £12,000	..	5	2	..	..	..	7
£12,000 ,, ,, £13,000	..	4	1	..	..	1	6
£13,000 ,, ,, £14,000	..	2	..	..	..	..	2
£14,000 ,, ,, £15,000	..	..	..	..	..	..	..
£15,000 ,, ,, £16,000	..	1	1	..	..	..	2
£16,000 ,, ,, £17,000	..	3	..	..	..	..	3
£17,000 ,, ,, £18,000	1	2	..	..	..	..	3
£18,000 ,, ,, £19,000	..	..	..	..	..	..	..
£19,000 ,, ,, £20,000	..	1	..	..	..	..	1
Over £20,000	..	5	..	..	..	..	5
Total	30	113	28	12	9	8	200

TABLE No. 3.—DISTRIBUTION OF RETURNS PER £1,000 CAPITAL: SAMPLE FARMS 1949–50

Return per £1,000 capitalization.	Specialist producer.	Main associated enterprise.					All farms.
		Cereal cropping.	Wool growing.	Beef production.	Dairying.	Other.	
	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.
£101– £200 ..	7	6	8	6	3	1	31
£201– £300 ..	11	23	8	5	2	2	51
£301– £400 ..	10	28	6	1	3	3	51
£401– £500 ..	1	20	5	..	1	2	29
£501– £600 ..	..	13	1	..	..	..	14
£601– £700 ..	1	12	..	..	..	..	13
£701– £800 ..	..	7	..	..	..	..	7
£801– £900 ..	..	2	..	..	..	..	2
£901–£1,000 ..	..	2	..	..	..	..	2
Total ..	30	113	28	12	9	8	200

TABLE No. 4.—DISTRIBUTION OF TOTAL COSTS: SAMPLE FARMS 1949–50

Total farm costs.	Specialist producer.	Main associated enterprise.					All farms.
		Cereal cropping.	Wool growing.	Beef production.	Dairying.	Other.	
	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.
Under £1,000	9	7	2	1	2	2	23
£1,000 and under £2,000	9	28	7	6	6	2	58
£2,000 ,, ,, £3,000	7	25	3	4	1	2	42
£3,000 ,, ,, £4,000	3	20	8	..	..	..	31
£4,000 ,, ,, £5,000	1	10	6	1	..	1	19
£5,000 ,, ,, £6,000	1	11	1	..	..	..	13
£6,000 ,, ,, £7,000	..	4	..	..	..	..	4
£7,000 ,, ,, £8,000	..	..	..	..	..	..	..
£8,000 ,, ,, £9,000	..	1	1	..	..	..	2
£9,000 ,, ,, £10,000	..	3	..	..	..	1	4
£10,000 ,, ,, £11,000	..	1	..	..	..	..	1
£11,000 ,, ,, £12,000	..	..	..	..	..	..	..
£12,000 ,, ,, £13,000	..	..	..	..	..	..	..
£13,000 ,, ,, £14,000	..	1	..	..	..	..	1
£14,000 ,, ,, £15,000	..	1	..	..	..	..	1
Over £15,000	..	1	..	..	..	..	1
Total	30	113	28	12	9	8	200

TABLE No. 5.—DISTRIBUTION OF COSTS PER £1,000 CAPITAL: SAMPLE FARMS 1949–50

Costs per £1,000 capitalization.	Specialist producer.	Main associated enterprise.					All farms.
		Cereal cropping.	Wool growing.	Beef production.	Dairying.	Other.	
	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.
£50 and under ..	2	..	1	..	..	..	3
£51 – £100 ..	6	8	7	5	2	..	28
£101 – £150 ..	14	35	13	6	3	4	75
£151 – £200 ..	8	21	5	1	4	3	42
£201 – £250 ..	..	28	1	..	..	..	29
£251 – £300 ..	..	8	1	..	..	..	9
£301 – £350 ..	..	9	..	..	..	1	10
£351 – £400 ..	..	2	..	..	..	..	2
£401 – £450 ..	..	2	..	..	..	..	2
Total ..	30	113	28	12	9	8	200

TABLE No. 6.—DISTRIBUTION OF NET FARM INCOMES: SAMPLE FARMS 1949–50

Net farm income.	Specialist producer.	Main associated enterprise.					All farms.
		Cereal cropping.	Wool growing.	Beef production.	Dairying.	Other.	
	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.
—£1,000– £0 ..	..	4	..	..	1	..	5
£1– £1,000 ..	11	6	3	3	3	1	27
£1,001– £2,000 ..	3	21	5	3	4	5	41
£2,001– £3,000 ..	7	19	5	5	1	2	39
£3,001– £4,000 ..	4	16	7	1	..	..	28
£4,001– £5,000 ..	2	13	2	..	..	..	17
£5,001– £6,000 ..	1	5	2	..	..	..	8
£6,001– £7,000 ..	1	8	1	..	..	..	10
£7,001– £8,000 ..	..	6	..	..	..	..	6
£8,001– £9,000 ..	..	6	1	..	..	..	7
£9,001–£10,000 ..	..	1	1	..	..	..	2
£10,001–£11,000 ..	..	3	..	..	..	..	3
£11,001–£12,000 ..	..	2	1	..	..	..	3
£12,001–£13,000 ..	1	1	..	..	..	..	2
£13,001–£14,000 ..	..	..	..	..	..	..	..
£14,001–£15,000 ..	..	1	..	..	..	..	1
£15,001–£16,000 ..	..	1	..	..	..	..	1
Total ..	30	113	28	12	9	8	200

TABLE No. 7.—DISTRIBUTION OF NET FARM INCOME PER £1,000 CAPITAL: SAMPLE FARMS
1949–50

Net farm income per £1,000 capitalization.	Specialist producer.	Main associated enterprise.					All farms.
		Cereal cropping.	Wool growing.	Beef production.	Dairying.	Other.	
	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.
—£100 to —£50 ..	..	1	..	..	..	..	1
—£49 „ £0 ..	..	3	..	..	1	..	4
£1 „ £50 ..	2	6	4	3	..	1	16
£51 „ £100 ..	6	8	6	4	2	1	27
£101 „ £150 ..	6	13	7	2	1	3	32
£151 „ £200 ..	7	16	4	3	3	..	33
£201 „ £250 ..	6	23	1	..	2	3	35
£251 „ £300 ..	1	9	2	..	..	..	12
£301 „ £350 ..	1	9	2	..	..	..	12
£351 „ £400 ..	..	9	2	..	..	..	11
£401 „ £450 ..	..	3	..	..	..	..	3
£451 „ £500 ..	1	5	..	..	..	..	6
£501 „ £550 ..	..	3	..	..	..	..	3
£551 „ £600 ..	..	1	..	..	..	..	1
£601 „ £650 ..	..	4	..	..	..	..	4
Total ..	30	113	28	12	9	8	200

TABLE No. 8.—DISTRIBUTION OF LABOUR AND MANAGEMENT INCOMES: SAMPLE FARMS
1949–50

Labour and management income.	Specialist producer.	Main associated enterprise.					All farms.
		Cereal cropping.	Wool growing.	Beef production.	Dairying.	Other.	
	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.
—£2,000 to —£1,000	..	2	..	..	1	..	3
—£999 „ £0	2	7	3	1	..	1	14
£1 „ £1,000	12	15	5	6	4	5	47
£1,001 „ £2,000	6	21	6	4	4	1	42
£2,001 „ £3,000	5	19	6	1	..	1	32
£3,001 „ £4,000	3	13	3	..	..	..	19
£4,001 „ £5,000	..	8	1	..	..	..	9
£5,001 „ £6,000	1	10	1	..	..	..	12
£6,001 „ £7,000	..	4	1	..	..	..	5
£7,001 „ £8,000	..	7	1	..	..	..	8
£8,001 „ £9,000	..	3	..	..	..	..	3
£9,001 „ £10,000	..	..	1	..	..	..	1
£10,001 „ £11,000	..	2	..	..	..	..	2
£11,001 „ £12,000	1	..	..	..	..	..	1
£12,001 „ £13,000	..	..	..	..	..	..	..
£13,001 „ £14,000	..	1	..	..	..	..	1
£14,001 „ £15,000	..	1	..	..	..	..	1
Total ..	30	113	28	12	9	8	200

FAT LAMB INDUSTRY SURVEY

TABLE No. 9.—DISTRIBUTION OF RATES OF RETURN TO CAPITAL: SAMPLE FARMS

1949–50

Rate of return.	Specialist producer.	Main associated enterprise.					All farms.
		Cereal cropping.	Wool growing.	Beef production.	Dairying.	Other.	
	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.	No. of farms.
−17.9% to −13.5%	..	1	..	..	..	..	1
−13.4% ,, −9.0%	..	1	..	..	..	..	1
−8.9% ,, −4.5%	..	4	..	..	1	..	5
−4.4% ,, 0%	3	2	2	1	..	..	8
0.1% ,, 4.5%	9	5	4	4	3	2	27
4.6% ,, 9.0%	1	15	5	4	..	4	29
9.1% ,, 13.5%	6	15	9	3	3	1	37
13.6% ,, 18.0%	4	13	1	..	2	..	20
18.1% ,, 22.5%	5	18	1	..	..	1	25
22.6% ,, 27.0%	1	7	3	..	..	..	11
27.1% ,, 31.5%	..	9	2	..	..	..	11
31.6% ,, 36.0%	..	8	1	..	..	..	9
36.1% ,, 40.5%	..	4	..	..	..	..	4
40.6% ,, 45.0%	1	1	..	..	..	..	2
45.1% ,, 49.5%	..	4	..	..	..	..	4
49.6% ,, 54.0%	..	3	..	..	..	..	3
54.1% ,, 59.5%	..	3	..	..	..	..	3
Total ..	30	113	28	12	9	8	200

By Authority: L. F. JOHNSTON, C'wealth Government Printer, Canberra.