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THE SMALL-FARM PROBLEM IN AUSTRALIA*

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The nature of the small-farm problem in Australia is discussed from a welfare point of view. The situation is examined industry by industry where data are available. It is suggested that while the average level of farm income in Australia compares well with non-agricultural earnings, there are some industries with very significant numbers of low income farms.

I propose tonight to talk about and around the question of whether Australia has a "farm problem" in the welfare sense.

When an American talks of *"the"* farm problem he is usually referring to the income problem—and particularly to the disparity between farm incomes and incomes in other sectors of the economy. Thus the President in his 1966 message to Congress, after lauding the progress made in the agricultural sector went on to say—"Yet incomes of most farm families continue to fall short of those earned in other occupations".

The problem has been stated in other ways—for example Cochran, referring to "commercial" farms, put it in this way: "it is too many productive resources producing a little too much, year after year". The consequences which flow from too many resources producing too much reflect themselves in low levels of farm income, surpluses, then production control programmes and surplus disposal arrangements, all of which are familiar to us in the U.S. context.

The farm income problem is certainly not confined to the United States—it is a world-wide phenomenon. There is a good deal of literature which describes and measures the disparities between farm and non-farm incomes, over a large number of countries. One can readily establish a "league table" which rates countries according to the proportion that farm incomes are of non-farm incomes. Such a table would show that in the great majority of developed countries average farm incomes fall below, and often substantially below, average non-farm incomes, despite very large monetary transfers from other sectors to the rural sector. There are many problems of measurement involved in these comparisons, but in most countries the gap is so wide that it is clear that a real problem exists.

* Presidential Address to the Eleventh Annual Conference, Australian Agricultural Economics Society, Armidale, February 1967.

Lacking any absolute measure of what constitutes an "adequate" level of farm income in the context of social equity, the comparison with non-farm incomes at least provides a measure of progress. Since welfare comparisons are a relative matter, the relationship between farm and non-farm incomes has become enshrined in the literature as the measure of welfare progress of the farm sector.

While most developed countries have the problem in common, the underlying causal factors may be different—or at least their relative importance may differ. Thus Cochran typified the American problem as too many resources producing too much. The European problem is generally one of too much of one resource—labour—relative to other resources, notably land. The "producing too much" symptom is of much less consequence on the European scene.

In the developing countries farm incomes are low, and so are incomes in the other sectors. But data published by F.A.O. show that even in these countries there is a disparity between farm and non-farm incomes. The farm sector is typified by vast under-employment for much of the year of the labour resource available. Woefully small farms, backward technology, etc., all contribute to the low income problem.

The "league table" mentioned above would show Australia, along with very few others (New Zealand is one), with farm incomes equal

TABLE 1

Farm and Non-Farm Incomes: Australia

(Average actual incomes)

Period	Primary Producers	Non-Farm Self-Employed	Male Wage & Salary Earners
	$	$	$
Average of 3 years ended			
1953-54	3,044 (a)	2,374 (a)	1,585 (a)
1956-57	2,803	2,702	1,835
Year			
1957-58	2,462	2,720	1,972
1958-59	2,538	2,782	2,036
1959-60	2,824	2,956	2,200
1960-61	2,855	2,996	2,300
1961-62	2,786	3,028	2,324
1962-63	3,147	3,121	2,387
1964-65	3,650	3,600	2,770
1964-65	3,650	3,600	2,770
1965-66	2,900	3,750	2,900
1966-67	3,500	3,900	3,050

(a) Average of two years only.

Sources: Commissioner of Taxation, *Supplements to Annual Reports.* The figures for 1964-65 and subsequent years have been estimated by B.A.E. The estimates were made after examining past relationships between actual income of farmers and the Commonwealth Statistician's figures for farm income; between actual income of non-farm self-employed persons and the Commonwealth Statistician's figures on income of non-farm businesses and professions; and between actual income of male wage and salary earners and wage and salary payments.

to or better than non-farm incomes. The non-farm incomes most commonly compared with farm incomes are those of other self-employed persons.

I don't propose to review (or repeat) all the Australian work on movements in *aggregate* farm incomes, *average* farm incomes, and their relationship with incomes in other sectors of the economy. Professor Gruen, in his Presidential address to this Society in 1962, covered this ground very well.[1] Let me, however, distil out some of the essential facts, and the more obvious conclusions. The basic figures for farm and non-farm incomes are shown in Table 1.

(a) Farm income as a percentage of national income has been relatively stable over the past few years.
(b) Farm incomes have been broadly at about the same level as non-farm self-employed incomes and above those of wage and salary earners.
(c) Farm incomes have fluctuated about an upward trend whereas non-farm incomes have trended steadily upwards.

As well, let us note two characteristics of farm incomes:

(i) annual fluctuations in aggregate and average farm income can be quite substantial; and
(ii) farm incomes show a very wide dispersion about the mean.

From all this, and Table 1, one may conclude that Australia does not have a "farm problem", at least not in the sense that there is a wide disparity between average farm and non-farm incomes. One may also make the broad judgement—and not be seriously challenged on it—that the *average* farmer's income is sufficiently high in the absolute as not to suggest a social problem.

But these conclusions are based on aggregates and averages—which, of course, tend to conceal as much as they reveal. We can too easily become complacent if we accept the aggregate and average figures at their face value. And this brings me to the heart of my address—a closer dissection of the anatomy of our farm income structure. First, a quick look at the frequency distribution of all farm incomes; then an examination of individual industries for which data are available; and finally a look at how some of the major industries have fared over time. After that we may choose to have another think about our conclusions.

Frequency Pattern of Farm Income

I must confess that I am taking advantage of the fact that this is a Presidential address so as to skate over some of the problems of incomplete and non-comparable data. Some of what I have to say is based on hunch and intuition—I am glad that I don't have to stand up to questioning on it. I have used a number of sources to obtain data, which has raised some problems of comparability—but I have tended to ignore these, since for the most part differences thrown up are far greater than could be explained by any lack of comparability in data. My general aim has been to paint a broad picture—the fine detail of which may be filled in by future work in the B.A.E. and elsewhere.

[1] Gruen, F. H. Australian Agriculture and the Cost-Price Squeeze. *Aust. J. Agric. Econ.* 6 (1): 1-20, 1962.

In addition to problems of comparability there are problems of measurement. While there have been substantial improvements in our techniques for measuring farm income and in our data collecting processes, we are still a long way short of meeting our needs for information on this important aspect of the farm sector.

I have used the Taxation Commissioner's *Annual Report* for 1966 as the source for the frequency distribution of taxpayers by income groups. But note that the Taxation authorities are concerned with "taxpayers", not farms. There may be several taxpayers to each farm. Indeed, any well-organized farming enterprise will endeavour to see that this is the case.

It will be observed in Chart 1 that the frequency distribution of primary producers' incomes is positively skewed and is in most respects similar to the distribution of other self-employed incomes. The significant thing is that there is a large number of primary producers with low incomes—and even allowing for the various tax concessions made to primary producers, there must still be a large number with low disposable cash incomes.

The Taxation Commissioner also provides frequency distributions of income for three broad classes of primary producers, i.e. sheep-grazing, wheat-sheep, and other. While these are very useful, they don't go quite

TABLE 2

Number and Per Cent of B.A.E. Survey Farms with Net Farm Income less than \$1,000 *and less than* \$2,000

Industry	Farms with Net Farm Income less than \$1,000		Farms with Net Farm Income less than \$2,000		Survey Population
	No.	Per cent of Survey Population	No.	Per cent of Survey Population	
Sheep					
Pastoral Zone	875	11	1,127	14	7,880
Wheat-Sheep Zone	4,343	9	9,279	19	49,355
High Rainfall Zone	6,098	17	12,914	36	35,871
All Zones	11,316	12	23,320	25	93,106
Wheat	1,292	4	2,261	7	32,294
Dairy					
Manufacturing Sector	14,858	36	24,351	59	41,273
Whole Milk Sector	3,379	23	7,199	49	14,691
All Industry	20,409 (a)	33 (a)	34,015 (a)	55 (a)	61,845 (a)
Potato	2,616	32	3,603	44	8,151
Dried Vine Fruit	524	17	1,450	47	3,084
Banana	2,013	52	3,201	83	3,861
Citrus Fruit	935	28	1,677	50	3,375
Berry Fruit	493	75	604	92	658
All Industries Surveyed	39,598	19	70,131	34	206,374

(a) Includes intermediate group deriving less than 50 per cent of total milk and cream receipts from sale of whole milk on the liquid milk market.

CHART 1

Frequency Distribution of Taxpayers by Actual Income

Income year: 1963-64; assessment year: 1964-65)

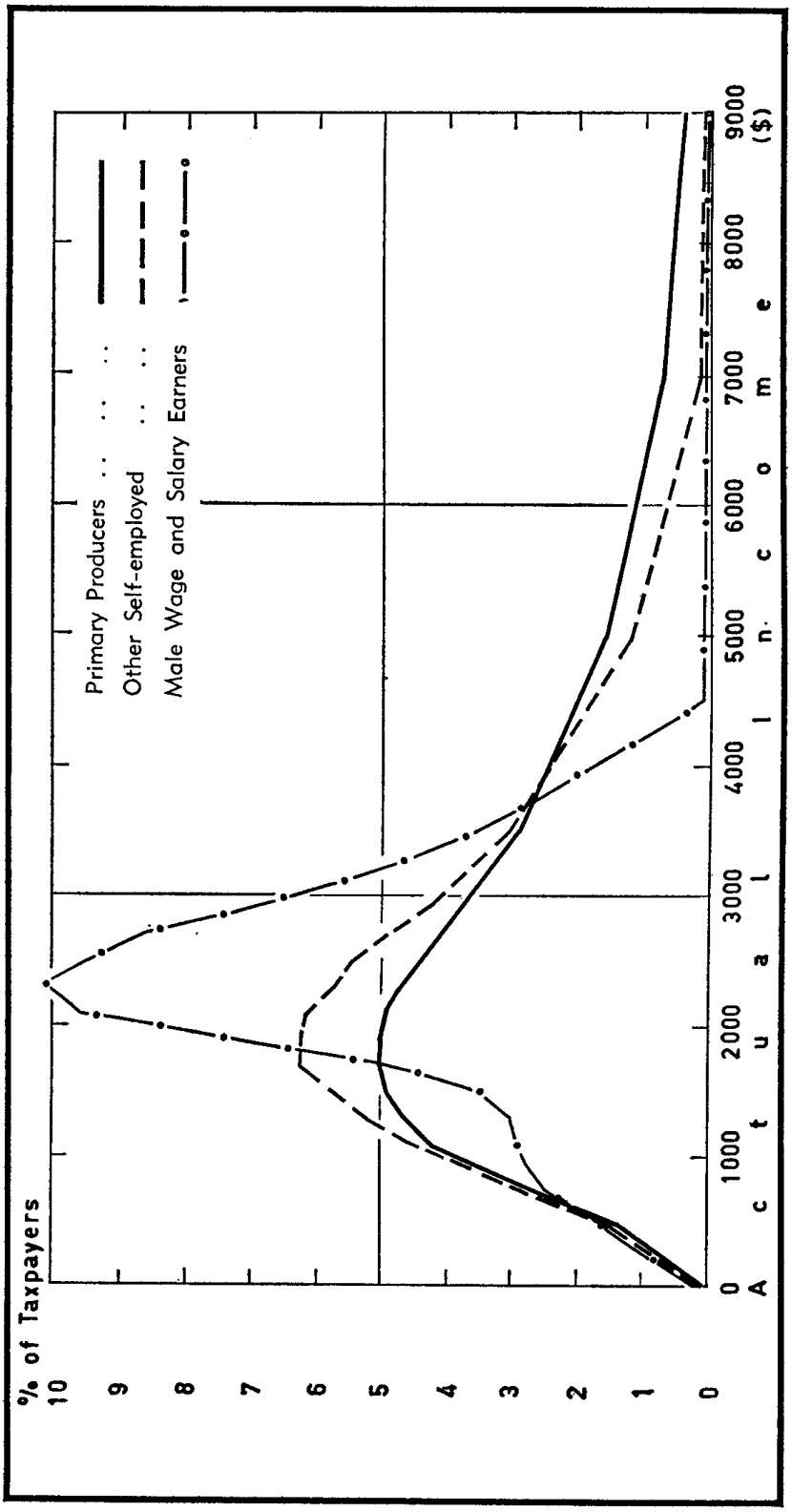
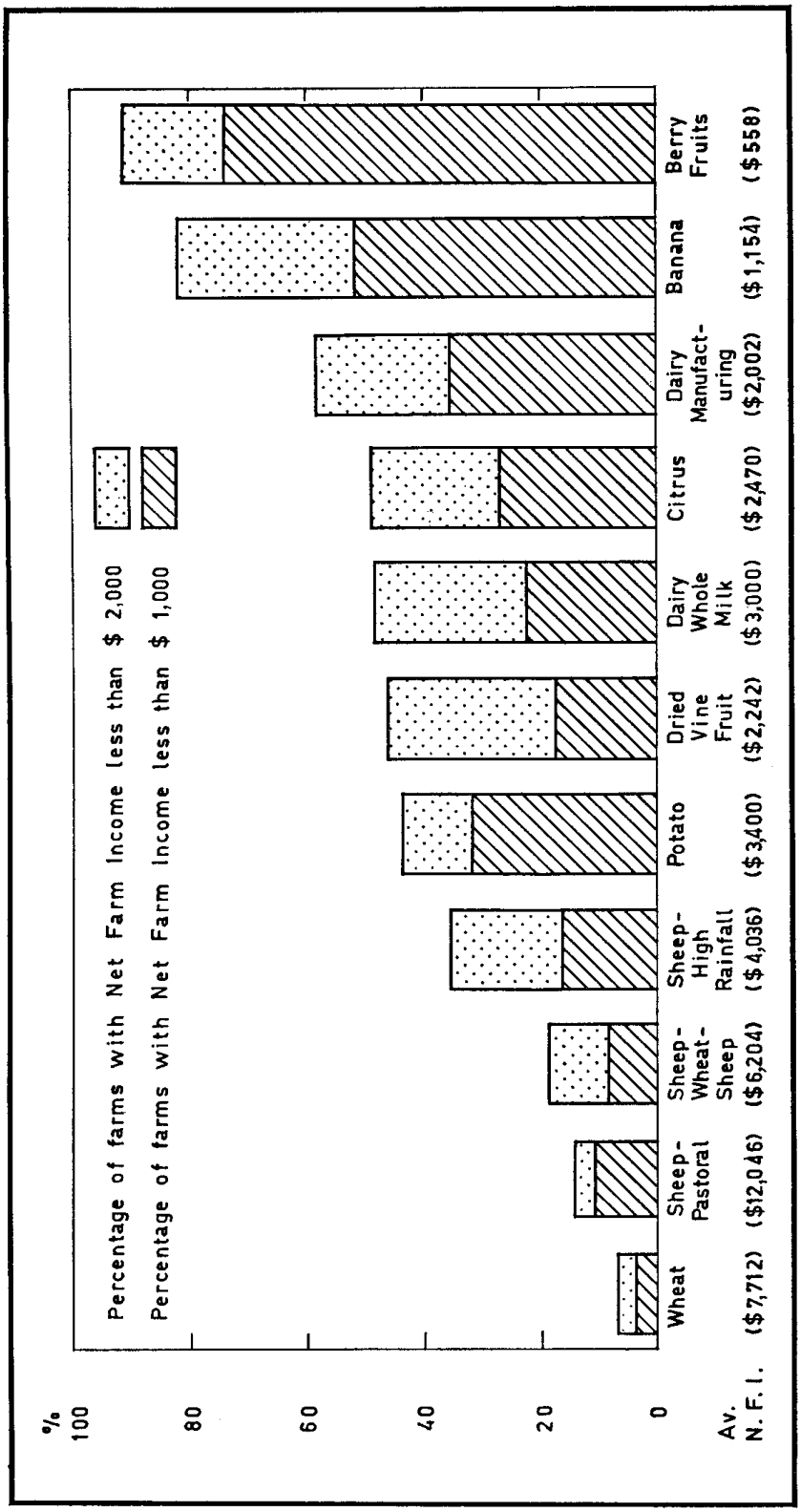


CHART 2

Percentage of "Low" Income Farms in Rural Industries



as far in their industry break-up as most of us would like. Therefore I have used data available from a series of B.A.E. surveys to make inter-industry comparisons of farm income. This raised a number of problems —those previously mentioned of comparability and measurement— which I have been able to minimize for the most part by relatively small adjustments. Then there are some industries omitted—two major ones: beef cattle and sugar; and a number of others: poultry, pome fruits, cotton, tobacco and vegetable growing.

TABLE 3

Eligibility Criteria and Periods Covered in B.A.E. Industry Surveys

Industry and period covered by survey	Main eligibility criteria for survey
Sheep: 1960-61 to 1962-63	1. Property to be running a minimum of 200 sheep. 2. Property to provide full-time occupation for at least one person. 3. Property not to be concerned principally with stud operations or with dealing. 4. Property not to be part of a multiple holding.
Wheat: 1959-60 to 1961-62	1. Farmers to have delivered wheat to Pool 24 (1960-61). 2. Area of wheat in 1960-61 to have exceeded 100 acres. 3. No irrigation to have been used for wheat-growing.
Dairy: 1961-62 to 1963-64	1. Farmers to possess a minimum of 20 dairy cows (excluding heifers and calves) at 31 March, 1963. 2. Farmers not to be engaged in the direct supply of milk for local town markets. 3. Farms not to be operated as stud properties.
Manufacturing Sector	The sample of farmers from the manufacturing sector included only producers selling milk and cream solely for manufacturing purposes.
Whole Milk Sector	Farmers were classified as whole milk producers if receipts from the sale of whole milk on the liquid milk market represented 50 per cent or more of total receipts from milk and cream.
Potato: 1961-62 to 1963-64	1. Area sown to potatoes in each survey year to be at least one acre. 2. The potato enterprise to provide the major source of employment for the farm operator. 3. Potato production not to be predominantly for seed purposes.
Dried Vine Fruit: 1960-61 to 1962-63	1. Growers to have a minimum of 10 acres under bearing dried vine fruit varieties. 2. At least 50 per cent of grape production to be used for drying purposes.
Banana: 1959-60 to 1961-62	Growers in Queensland and New South Wales to have a minimum of 3 acres of banana plants in 1961-62. In Western Australia the minimum area was 2 acres.
Citrus Fruit: 1960-61 to 1962-63	Growers to have the following minimum area planted to citrus fruit: Victoria, 2 acres; South Australia, 3 acres; New South Wales, 4 acres (coastal areas) and 5 acres (M.I.A.).
Berry Fruit: 1958-59 to 1960-61	Growers in Victoria to have at least half an acre planted to berry fruit. For Tasmanian growers the eligibility criteria was a minimum production of 2,000 lb. of berry fruit in 1959-60.

Based on this survey data, I have put before you a chart (Chart 2) with a supporting table (Table 2) about which a few points should be made. First on the question of coverage. Most cereal cropping farms will be included in either the wheat sample, or the wheat-sheep zone of the sheep industry figures. Similarly pig production is covered to a large degree by the dairy industry survey. Finally a high proportion of beef production occurs on farms included in the industries surveyed, so that it is the beef properties of the northern half of the continent and the relatively few beef specialists in the south which are omitted. Then there is the question of what constitutes an industry. The actual criteria used are set out in Table 3. Broadly, an industry is defined as a group of producers who obtain the major part of their gross income from a certain product.

The surveys cover a range of years in the first half of the 1960's. I am conscious of the small imprecision which this brings to the comparisons between industries developed later—an imprecision which would not be greatly reduced by any attempt to bring all the figures to a comparable point by index procedures or otherwise. So I have chosen to present the figures as they stand—the story emerges clearly enough for my purposes.

I have taken as a definition of a "low income" farm, a farm with an income of less than $2,000. Why $2,000? It is pretty much an arbitrary figure—a judgement if you like. But in making the judgement I had in mind such considerations as the level of the basic wage, average earnings of industrial workers, and also the commitments a farmer has to provide for out of this $2,000 or less.

This brings me to the question of definition of farm income. Farm income, in the sense that I am using it, means cash receipts less cash costs and depreciation. The cash costs include an amount for the value of family labour—other than the farm operator's labour. Cash costs do *not*, however, include interest payments. Thus the farmer has to meet, from the $2,000 or less, his family's living expenses, his interest payments, and his fixed capital repayments, e.g. hire purchase. He must also pay any income taxes, which should be nil or very small.

One may quarrel with my choice of $2,000—hopefully I would expect that some would believe it too low, while others would reckon it to be too high. To me it seems a reasonable figure as an indicator of whether or not we have a "farm income" problem. For those who regard the figure of $2,000 as being excessively high, I have also given in Table 2 and Chart 2 the number of farms, by industries, with less than $1,000 farm income by my above definition. Surely no one will argue that $1,000 is too high a figure.

The income figure of $2,000 or less in this analysis is not related to the capital involved on the farm; it takes no account of the farmer's need to accumulate capital for new or increased investment. Depreciation of the existing asset—replacement of capital—is already deducted as a cost in arriving at the farm income figure. So I suspect that a high proportion of the farmers with an income of less than $2,000 are "living on" depreciation. This suggests some disinvestment on farms at this end of the income scale—which is a very large "problem" in itself—but one that I intend to do no more than note in passing. The problems of capital accumulation—the inability to accumulate capital—and of dis-

investment where it occurs, are of course closely related to the welfare question. In the vast majority of cases there is a direct causal relationship between income status and capital status.

A number of studies have examined the question of the relative income requirements of rural people as against urban people. These studies take into account farm produced food, rental value of housing, tax incidence, opportunity for capital gain, etc. to derive a *relationship* which equates farm and non-farm incomes. For example Gale Johnson[2] in 1958 estimated that labour earnings in agriculture would represent equal returns for comparable non-farm labour if per capita incomes in agriculture were 65 to 70 per cent of non-farm income. Then in 1963 Dale Hathaway[3] suggested that the figure should be about 88 per cent. It is interesting to observe the rapid closing of the gap—the diminution in value of non-cash income—in such a short period. If this rate has been maintained then in 1967 the figure ought to be near to 100 per cent. As a broad generalization I would guess that in Australia the comparable figure, taken over the whole environment, is close to 100 per cent. This is not based on any close researching of the problem—it is, as I have said, a reasoned guess. It is probable that in the outback areas—e.g. the Western Division of N.S.W. and inland Queensland—the figure is higher than 100 per cent. In the more closely settled areas it may be a little, but very little, less. The "low income" farms certainly derive a higher proportion of their subsistence needs from farm produced goods, and probably a higher absolute amount per farm family, than "higher" income farms.

But in choosing the figure of $2,000 as the cutoff point for "low income" farms I have made no discount to allow for farm food, fuel, rent, etc. In my view, and I have no formal evidence to support it, the additional costs of education for farm families may go a long way to offsetting any supposed income advantages by way of non-cash perquisites. Furthermore, it is fairly clear that in any policy decisions in which levels of farm incomes are relevant or at issue, the cash income requirements of a farm family will be assumed to be on a par with those of urban families. Some evidence of political thinking on this is evident in the owner/operator allowances in those industries for which cost indices are maintained, e.g. $2,500 in wheat, and similar amounts for dairying and dried vine fruits.

One final word about my choice of $2,000 as an indicator of low incomes. I am not suggesting that this figure should be in any way the income criterion for settlement of farms on a living area basis. This sum would be quite inadequate in the settlement context.

So having taken $2,000 as a cutoff point to measure the proportion of "low income" farms in a number of industries, I have set up Chart 2 which presents the results of this and the $1,000 analysis. I have, perhaps unwisely, attempted to cram as much other information on to the chart as possible. The figures below each column indicate the average (arithmetic mean) farm income for the industry concerned. The

[2] Johnson, D. G. Labor Mobility and Agricultural Adjustments, in *Agricultural Adjustments in a Growing Economy*, Iowa State Univ. Press, Ames, 1958, pp. 163-72.

[3] Hathaway, D. Improving and Extending Farm-Non-farm Income Comparisons. *J. Farm Econ.* 45: 368, 1963.

accompanying Table 2 shows the approximate populations in the various industry groups, and the estimated numbers in each group with incomes of less than $2,000 and less than $1,000.

Let me deal with the aggregate figures first. One of the better known statistics among agricultural economists is that of the number of farms in Australia—250,000. It is equally well known that this statistic has remained almost constant over a large number of years. (Perhaps that is why it is well known.) The industries included in the chart account for some 206,000 farms—of these about 70,000 or 34 per cent fall into the "low income" group as defined. To extend this estimate to cover the whole population of farms two steps are required.

First an adjustment must be made for possible double counting arising from overlapping between industries. The most obvious area in which such overlapping might occur is the wheat industry and the wheat-sheep zone of the sheep industry. Other possibilities for double counting are relatively few—potato growing would normally be associated with some other enterprise, of which high rainfall woolgrowing is probably the most important in the industries listed. There is no certain way to make this adjustment so it becomes a matter of judgement. At the very most the figure could be 10,000 farms and it is almost certainly a good deal less than that. But let me be conservative and take the figure of 10,000.

Second, account must be taken of the industries not covered in the chart—beef, sugar, poultry, cotton, tobacco, pome fruits, berry fruits, vegetables, etc. In absolute numbers the horticultural industries would be the most important and from a good deal of fragmented evidence available to us, the income structure of these industries is no better than those horticultural industries we have surveyed. The poultry industry also has a high proportion of relatively low income earning units. The beef industry should have few producers in the low income class, while sugar has had a chequered income experience in recent years about which I will say more later. Taking all the evidence, my very conservative estimate is that about 40 per cent of the 50,000 farms not accounted for in the chart would fall into the "low income" class as defined. That is a figure of about 20,000 farms.

With the limitations of the estimates well in mind, the arithmetic can be finalized. I came to a figure of 60,000 "low income" farms from the industries listed on the chart. Add to this the estimated further 20,000 "low income" farms from the remaining industries, and a total of 80,000 results. This is very nearly one-third of all farms.

As a check these figures square pretty well with the Taxation Commissioner's data on the incomes of primary producer taxpayers. For the year 1963-64 the Commissioner reports that there were about 68,000 taxpayers with incomes between $400 and $1,600. This was an exceptional income year—quite the highest average farm income since the wool boom year of 1950-51. In the more normal year of 1962-63 there were 107,000 taxpayers in this category. It will be noted that the Commissioner's range begins at $400. In any year there are a number of taxpayers, and farms, whose incomes are less than this, including quite a number which operate at a loss.

Thus my estimate of 80,000 farms—or about a third of all farms—would appear to be conservative. It is a figure which gives very good

cause to ponder any thought that there is no "farm income" problem in Australia.

For those who believe that my cutoff point of $2,000 is too high, I have made similar estimates based on $1,000. These show that among the "survey" farms there are almost 20 per cent with incomes of less than $1,000. After making adjustments for double counting, and the industries not covered, I have estimated that some 45,000 farm regularly have incomes of less than $1,000. These are still very significant numbers. If you prefer it, the situation could be described as one in which we have 45,000 farms certainly in the very low income class, indeed bordering on poverty, while a further 40,000 with incomes between $1,000 and $2,000 could be described as low income and potential very low income farms.

Industry Income Comparisons

Now to look at the individual industry picture of Chart 2. It contains few surprises in the ranking of industries. The wheat industry emerges as that with the smallest proportion of "low income" farms and a relatively small absolute number of such farms. The sheep industry in its three zones follows next with a surprisingly high proportion of high rainfall zone properties (36 per cent) falling in the "low income" class. The position of the dairy industry well to the right of the chart with almost 60 per cent of farms in the "low income" category simply quantifies, and will confirm in most people's minds the general impression of the economic position of this industry. The generally low income levels in the horticultural sector are apparent.

It will be observed that there is a clear relationship between the average level of farm income in an industry and the proportion of farmers in that industry with incomes of less than $2,000. The only significant departure from this generalization is the pastoral zone of the sheep industry, which had an average farm income of some $12,000, yet still had a higher proportion of "low income" farms than the wheat industry, and was not much ahead of the wheat-sheep zone of the sheep industry. The explanation probably lies in the fact that in any one year the pastoral zone is experiencing dry conditions in one or more of its constituent parts. There would not be many years in which the pastoral zone as a whole was experiencing good seasonal conditions; 1963-64 was one of those rare years.

At this point it is worth noting the wide year to year fluctuations in income in the sheep industry—which of course is a consequence of price and seasonal fluctuations. The sheep industry is more vulnerable than any of the other major industries in this respect. The effect of taking the year 1963-64 for the sheep industry rather alters the absolute figures, although it does not alter the ranking of the three sheep industry zones relative to one another, and with the exception of exchanging the position of the wheat industry with the pastoral zone, has not altered the general pattern of the chart. However, 1963-64 was a remarkably good year for the wheat industry too, so no doubt the proportion of "low income" farms in that industry was also reduced as compared to the survey period.

The 1963-64 figures for "low income" farms and average net income per farm for the various zones of the sheep industry were:

	Per cent	*Av. Net Income*
Pastoral Zone	6·4	$22,000
Wheat-Sheep Zone	8·0	$9,178
High Rainfall Zone	18·5	$7,380

Thus, as compared to the average of the previous three years, the proportion of "low income" farms was about halved in each zone. The principal factor responsible was a 13·5 per cent increase in the average price of wool, while the good season also gave higher production. The price of wool in that year was the highest for more than 10 years, and has been more than 10 cents lower in subsequent years. Hence the average situation as set out in Chart 2 is probably more typical of the experience of the sheep industry in the 1960's with the exception of 1963-64. The drought effect on production in 1965-66 will no doubt have increased the proportion of "low income" farms in the industry. The number of "low income" farms in the sheep industry can vary quite markedly from year to year, but even in the best year for many years there were still some 12,000 such farms.

In terms of numbers, the dairy industry provides quite the largest number of low income farms—some 34,000. If ever there was any doubt as to why the dairy industry looms so large in discussion of farm problems in Australia, this number dispels it.

The high proportion, and large absolute numbers, of "low income" farms in the dairy industry single it out for more careful scrutiny. First let me put before you some general observations on the income characteristics of the industry:

(a) The number of low income farms in the industry was approximately the same in each of the three years of the recent survey.
(b) The same farms occur in the low income group each year.
(c) The income structure of the industry has not improved since the previous survey of the dairy industry in the early 1950's—if anything it has become worse in real terms.
(d) There is nothing in the production, price or income data of the three years since the 1964 survey to suggest that the dairy farm income situation has improved.
(e) Despite some exodus of farms from the manufacturing sector of the industry, the absolute number of "low income" farms remains constant.
(f) The income situation in the manufacturing sector of the industry should be distinguished from the whole-milk sector. In the former 59 per cent of farms have incomes of less than $2,000, while in the wholemilk sector the figure is 49 per cent.

Industry Income Trends over Time

One of the points listed above—that of the income position of the dairy industry over time—requires some explanation and discussion (as does the same topic for the other individual industries). The two surveys from which the data have been drawn used different techniques for measuring farm income, particularly in relation to the treatment of family labour. The earlier survey did not treat family labour—whether paid or unpaid—as a farm cost. A figure of farm income was arrived at which had to meet the labour rewards of the farm operator, the

working members of the farm family, interest on capital, etc. The farm income so defined is higher than the figure used in the chart for the dairy industry (and all other industries) by the value of family labour. In the dairy industry this is, of course, quite a significant item. However, it has been possible to put the 1964 survey data on the same basis as the 1953 survey data. Further, the income levels of the earlier survey have been adjusted according to change in the value of money to put them on a comparable basis with the later survey period. One important adjustment proved impracticable—the earlier survey had a minimum requirement of 15 cows, the more recent survey a minimum of 20 cows. Thus there were some smaller farms in the earlier survey which were not eligible for inclusion in the later survey.

After making the adjustments outlined above it was found that in the years 1950-53 there were 42 per cent of farms with a farm income of less than the equivalent of $2,000, while in the years 1960-63 there were 48 per cent of such farms. Thus after 10 years there was a slightly higher proportion of farms in the industry in the low income group. However, the possible errors in sampling and in the adjustments made do not permit any more positive statement than that the farm income position of the dairy industry has not improved over the period of the two surveys, and has probably worsened.

This is perhaps the real point. The phenomenon of "low income" farms in this industry is not a new one—it is not the result of any recent random price, cost or production upheaval. Certainly the general situation of the industry now is better than it was in the 1930's—but over more recent years it has barely maintained its income levels in real terms.

These remarks, of course, apply to the manufacturing sector of the dairy industry over the whole of Australia. It is not my intention to deal with inter-state and inter-regional differences in farm income levels except by inference, e.g. the sugar industry clearly relates to a specific region as does the dried vine fruits industry. Nevertheless, a study of income movements by States between the 1953 and 1964 dairy industry surveys reveals a situation worthy of some comment. In New South Wales the average farm income of the manufacturing sector fell by almost 50 per cent between the 1953 and 1964 surveys, i.e. from about $2,300 to about $1,200. (The 1953 income is expressed in 1964 money values.) Let me say at once that this is not a reflection of different seasonal conditions since both survey periods were relatively favourable seasonally. In Victoria farm incomes were about the same, $2,500 in both cases. In South Australia and Western Australia there was a small fall and in Tasmania a small rise. In Queensland, where seasonal conditions in the latter survey were markedly better, there was an increase in average farm income of some $650. Clearly, New South Wales had experienced identical price movements and near identical cost movements to the other States. The most apparent difference was the movement in production per farm. From approximately the same number of cows the increase in production per farm in terms of commercial butter in New South Wales was 10·7 per cent. In South Australia, which had the next largest fall in average real incomes, it was 22 per cent. In Victoria, with approximately equal incomes, the production increase was 38 per cent, while the two States whose average

income increased had production increases per farm of over 40 per cent. The relationship between maintenance of real levels of income per farm and production per farm is clear. The evidence available to me does not permit me to identify with any certainty the underlying reasons why New South Wales farms failed to increase their average production (and whether had they done so their net incomes would have been higher).

While dealing with this matter of longer term movements in industries, there are two other industries—sheep and wheat—for which longer series of income data are available.

The earlier survey of the wheat industry covered the years of the mid-fifties, and since the analyses of this and the more recent survey were identical, no adjustment other than that for changes in the value of money need be made. The data show that the wheat industry improved its income situation quite markedly between the two survey periods. The proportion of low income farms in the early survey was 15 per cent, which reduced to 7 per cent in the later survey. All measures of central tendency also moved to the right. The mean of incomes increased from $7,000 to $7,700, the median from $5,500 to $6,200, and the mode from $4,200 to $5,200. All these figures are in constant money terms. The production, price and cost data available suggest that the income situation of the wheat industry in more recent years—with the exception of the drought year 1965-66—has shown further improvement. At the present time it is not among our "problem" industries in the income sense. The maintenance of this situation in the wheat industry will depend very heavily on our ability to market the very large crops which have lifted incomes in the industry.

The sheep industry presents a more complex picture. For this industry we have almost continuous income data for the period from 1952-53 onward. I pointed out earlier that income variability, due principally to price variability over this period, but occasionally to production variability, is very marked. The price experience of the dairy and wheat industries is relatively stable when compared to the price experience of wool.

Since wool price movements are such an important element in the income situation of the sheep industry, the variability of income is closely related to the dependence on wool as a source of returns. In order of zones this puts the pastoral zone in the most vulnerable position, then the high rainfall zone, and finally the wheat-sheep zone. In order of climatic variability the zones are ranked pastoral, wheat-sheep and high rainfall.

Thus the pastoral zone is most vulnerable on both counts, and this is reflected in its income experience. In 1952-53, 4·5 per cent of properties had incomes of less than $2,000; in 1963-64, 6·4 per cent of properties were so placed. Both of these were years of good seasonal conditions, although wool prices were about 15 per cent lower in the later year. In between times there were wild swings in fortune—in 1957-58, a low price and a drought year, 42 per cent of pastoral zone properties were in the low income group. An examination of long-term sheep industry survey data shows that, apart from a small number of small farms (in terms of sheep numbers) on the fringes of the pastoral zone, there is no hard core of low income farms in this zone.

The high rainfall zone of the sheep industry has tended to slip back

as compared to the early mid-fifties. Wool prices have of course fallen, and the almost continuous upward movement in costs has hit this zone more sharply than the pastoral zone because of its higher ratio of cash costs to returns. The picture has been clouded by our inability to separate development costs from annual operating costs. This zone has increased its area of improved pasture by many millions of acres in the past 15 years. Much of the cost of this development has been charged against annual income. With this qualification, the proportion of low income farms in the high rainfall zone of the sheep industry was 20 per cent in 1952-53 and 36 per cent in 1960-62, but fell to 18·5 per cent in 1963-64 (a very good year). Lower wool prices, drought, and further cost increases since 1963-64 have almost certainly returned the figure to 36 per cent or more. The high rainfall zone has already had a tremendous expansion in production and has considerable potential for further expansion. But all of the increase in productivity seems to have been eaten up in the cost price squeeze. If the "squeeze" continues, this zone will account for an increasing number of low income farms unless farmers are able to increase productivity at a faster rate.

The wheat-sheep zone has had a happier experience than the high rainfall zone, reflecting the "wheat" side of its operations rather than the "sheep" side. However, since the farms included in the sheep industry survey are selected on the basis of a "sheep" criterion, there are a number with no wheat, and others with relatively little. I am talking about a geographical zone—not a type of farm. This perhaps explains the relatively worse situation of the wheat-sheep zone as compared to the wheat industry where wheat—100 acres of it—was the principal criterion for selection. In 1952-53, 11 per cent of the wheat-sheep zone fell in the low income group; in the years 1960-63 the figure was 18·8 per cent and in 1963-64 it was 8 per cent.

One important point on the sampling for the sheep industry should be noted. The sample has been stratified on the basis of the number of sheep rather than on the numbers of farms in a flock size group. Since the proportion of sheep in the lower flock size groups to total sheep is less than the proportion of farms with small flocks to total farms, the sample contains a disproportionately low number of small farms. The significance of this is, of course, that the number of "low income" farms in the sheep industry is understated in the preceding analysis.

While still dealing with income trends over time it may be appropriate to say something on the sugar industry, whose export price experience in the 1960's has been spectacular to say the least. "Free market" prices have been as high as £100 stg. per ton (in 1963) and in recent weeks have been less than £13 stg. per ton. The effect of this sort of price movement on sugar growers' incomes in a situation where increasing quantities of sugar are being sold on the free market has been quite dramatic. One can estimate the gross value of sugar ex farm with a good deal of precision. It has also been possible—but with less precision—to estimate sugar farm costs, and thus to make reasonably reliable estimates of average income per farm.

These estimates show that average sugar growers' farm incomes were fairly constant around $5,000 from 1960 to 1963, then with the high "free market" price they jumped to about $9,000, but then fell sharply

to around $1,500 in 1966. (The use of calendar years is deliberate since the income is related to the crop of that year.)

These data do not permit the construction of frequency distribution tables of farm income. However, from available data on farm size and farm production it seems that the great majority of sugar producers would be clustered around the mean with little if any skew in either direction. It should be noted that between 1963 and 1966 the number of sugar producers increased by about 1,300.

The horticultural industries as a group have a high proportion of "low income" farms. The absolute numbers of such farms are, however, relatively small. The importance of these industries lies in their regional concentration. I have no historical data for these industries, but prima facie evidence suggests that their position has not changed much in the last 10 or 15 years. A feature of those horticultural industries surveyed has been the wide disparity in income experience from one production area to another. For example the Upper Murray Valley region in the citrus industry had no sample farms with less than $1,000 farm income and an average farm income of $6,500. The coastal regions of N.S.W. on the other hand had 33 per cent of sample farms with a farm income of less than $1,000, and an average farm income of $1,900. In the dried vine fruits industry the Robinvale and Mid-Murray areas may be similarly contrasted. The banana industry and berry fruit industry have a uniform incidence of low income.

Concluding Comments

Taking an overall view, let me summarize where I have got to:

(a) Average farm incomes are in line with non-farm incomes.

(b) The average is strongly influenced by high incomes in the wheat, sheep and beef industries.

(c) In the early sixties 40,000 to 45,000 farms had incomes of less than $1,000, and about 80,000 farms had incomes of less than $2,000.

(d) The dairy industry is the major source of these low income farms: 20,000 with farm incomes of less than $1,000 and 34,000 farms with incomes of less than $2,000.

(e) The wheat industry (and probably the beef industry) is the only major industry whose income position has improved in the last 10 years.

So much for the "facts". Even allowing for the sweeping nature of some of my assumptions, they are sufficient to demonstrate that Australia does not have any automatic exemption from a "farm income" problem—indeed in some industries the problem is already upon us. In addition we have a large incipient low income group who on a series of not implausible assumptions may well become a very real problem.

Let me conclude by having a guess at some of the underlying causal factors. In the broad sweep of industries, spread right over the continent, it is difficult to do more than make broad generalizations. It is clear that some industries have their own particular problems, whether it be of size, location or shrinking markets. I do not have time to deal with each industry and region separately.

A number of broad underlying causal factors emerge which seem to be common to all industries. However, the causal factors are not necessarily discrete as there may be some inter-relationship between them. The first and by far the most important is the physical constraint of the size of the enterprise measured in terms of output. Within the small-farm group which has the majority of low income earners there may be a couple of sub-groups. Some farms by reason of their land base in terms of quantity and/or quality are unlikely ever to be viable economic units. Another group appears to have the capacity to step up production and more importantly, of course, to raise productivity and thus become higher income earning units.

It is probable that not all industries have equal potential for productivity increases. Indeed, within industries it is also probable that not all regions stand equal in this respect. I need only cite the case of the dairy industry mentioned earlier in my address as some prima facie evidence of this. While it is dangerous to speculate on which industries have the greatest potential for productivity increases, let me make a few guesses. Within the present structural organization of industries I would guess that the sheep industry in the high rainfall and wheat-sheep zones, the wheat industry and the dairy industry in certain regions rank high among those with potential for productivity increases. It may be argued, of course, that those industries with the lowest productivity at present have the potential for greatest increase simply because they are so low in productivity at the moment. But for the industries of low present productivity it may be necessary to make major adjustments in their structural organization and on this I will say a little more later.

The second common cause of low income appears to be lack of managerial ability, i.e. the personal ability to organize or improve upon a given quantum of resources to achieve a desired result. This type of inefficiency may often be associated with quite large production units or units with quite large production potential.

The third factor (which may well be related to the first) is inefficiency introduced by inability to accumulate or acquire capital to develop farm potential and to adopt proven new techniques of production where these require new investment.

My whole intention in this paper has been to describe a situation and not to prescribe remedies. However, I cannot resist the temptation to make a few prescriptive remarks. Some of the broad measures often put forward for improving the farm situation may have a "once for all" effect, e.g. devaluation. Others such as international commodity arrangements may have only a marginal effect on the incomes of low income farmers. Still others such as input subsidization and output subsidization may have short-run palliative effects but depend largely on the political will to go on making direct transfer payments from other sectors to the rural sector. In our society, which is becoming increasingly urbanized and in which the internal and external dependence of the other sectors on agriculture is diminishing, there can be no guarantee that the political will to make increasing transfer payments will always be there. Furthermore the long run effects of such subsidization may well make the final position of the industries concerned worse than their first position. The nature of direct subsidization is such that the benefits flow principally to the large and presumably high income producers.

But while ever costs continue to increase at a faster rate than the prices received by farmers, all of these general measures can do no more than slow down the rate at which farms may fall into the low income category. Continuing increases in productivity will, of course, further retard the process and offer the possibility of lifting farms out of the low income group.

I find myself driven to the conclusion that we in Australia must look much more closely than we have in the past at the structural adjustments which may be required in the agricultural sector to ameliorate the low income problem. For long we have regarded ourselves as fortunate in this respect and have looked with sympathy at the problems of others. I believe we will have to consider very carefully whether the structural adjustments required should be left to the economic forces working on rural industries or whether the adjustments will require more positive steps to reduce the number of low income farms. In saying this I am fully conscious of the difficulties involved—particularly that of the immobility of small farm proprietors. I am conscious also that relative movements in prices, costs and productivity make any situation very fluid.