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SOME ASPECTS OF THE

Size-of-Farm Problem in Economic Area 3B

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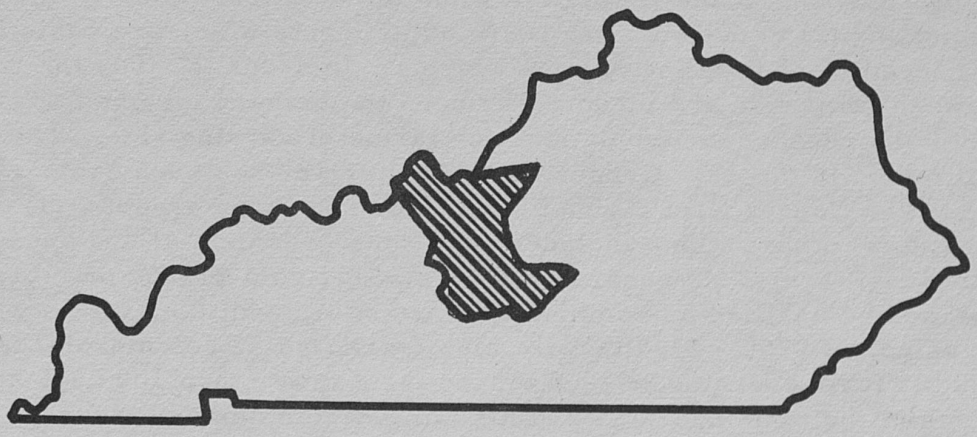

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SOME ASPECTS OF THE SIZE-OF-FARM PROBLEM IN ECONOMIC AREA IIIB 1/

By Harald Jensen and Luther Keller

Farm families on small farms in Economic Area IIIB are not getting much income for the time spent in farming. This fact, together with other evidence which follows, suggests that farm size has a lot to do with size of income from farming. Farm size is related to income in these ways: (1) The amount of income depends on the size of farm. For example, within a group of farms where neither cost advantages nor disadvantages exist for farms of various size, large farms will have, under usual price relationships, higher incomes than small farms, (2) The amount of income in relation to the amount of resources used depends on the cost advantages or disadvantages for farms of various size. For instance, if costs per unit of farm product decrease with increases in acre size (acres is only one of a number of measures of farm size), a 200-acre farm will have a net income more than twice as large as that of a 100-acre farm.

Increase in size of farm alone does not guarantee larger incomes. Some farms are operated so inefficiently that a larger volume of business might mean lower incomes or even losses. Using more land and capital to operate a larger unit can increase income for many small farms only if management level is increased along with land and capital.

This study was made (1) to determine the relationship between farm size and income and (2) to outline alternative adjustments which are basic for increasing incomes of families on small farms. In order to study the relationship between farm size and income, we need to compare incomes, costs, investments and resource combinations for farms of varying size. The classification of farms in the 1950 Census of Agriculture makes such comparisons possible. The Census first divided farms into two large groups: (1) commercial and (2) other, which includes part-time, residential and unusual, such as institutional farms. In general, all farms that sold $1,200 or more of farm products were classified as commercial farms. In addition, farms with farm product sales, of $250 - $1,199 were also classified as commercial farms, provided the farm operator worked off the farm fewer than 100 days and that the income of the farm operator and his family from nonfarm sources was less than the total value of farm products sold. The Census then divided all commercial farms into six classes on the basis of the total value of products sold. These classes are as follows:

1/ This study is based primarily on data from the United States Census of Agriculture, 1950. Economic Area IIIB includes Bullitt, Green, Hardin, Hart, Larue, Meade and Taylor counties (location shown on cover).

Class	Value of farm products sold
I	$25,000 or more
II	$10,000 to $24,999
III	$ 5,000 to $ 9,999
IV	$ 2,500 to $ 4,999
V	$ 1,200 to $ 2,499
VI	$ 250 to $ 1,199

Hence, in studying the size-of-farm problem in the Economic Area IIIB we can compare incomes, costs, investments and resource combinations for six different size of farm groups, for volume of sales is a measure of size. There are other measures. For example, acres are often used as a measure of size. Total capital investment or the total dollar value of all inputs or resources used during the year is also sometimes used. Acres, since they represent only one of the resources (land) used in farming, do not always accurately measure farm size. In most instances, however, acres, volume or value of output, total capital (land included) invested and dollar value of all inputs or resources used during the year go hand in hand (Table 1).

Table 1. - The Number of Commercial Farms by Size Classes, Economic Area IIIB, Kentucky, 1949. (Source: U.S. Census and Estimates)

Class of Farm	Acres per farm	Gross Sales	Total capital invested	Total inputs used during the year	No. of farms	Percent farm in each class
I	515	$25,000 - over	$66,204	$34,602	22	.2
II	348	10,000 - 24,999	42,230	11,689	173	1.7
III	202	5,000 - 9,999	24,684	7,294	729	7.3
IV	135	2,500 - 4,999	14,570	4,060	2117	21.1
V	96	1,200 - 2,499	8,084	2,615	3776	37.6
VI	70	250 - 1,199	4,532	1,733	3225	32.1

According to the 1950 census, most of the commercial farms in Economic Area IIIB fell into Class V, with sales of $1,200 to $2,500 (last two columns, Table 1). But nearly as many fell into Class VI, with sales of only $250 to $1200. Class IV farms with sales of $2,500 to $5,000 ranked third in number. Thus, about 91 percent of all commercial farms in Economic Area IIIB had sales of less than $5,000, which leaves only 9 percent with sales of $5,000 and above.

With this general background, let us take a closer look at incomes and costs on these farms of varying size (Table 2).

Table 2. - Income and Costs for Commercial Farms in Economic Area IIIB, Kentucky, 1949
(Source: U. S. Census and Estimates)

Class of farm	VI	V	IV	III	II	I	Average
1. Total product	$1185	$2311	$4100	$7406	$14,969	$37,708	$2992
2. Total inputs	1733	2615	4060	7294	11,689	34,602	3200
a. Cash farm expenses 1/	267	635	1303	3143	6,109	25,172	988
b. Interest on buildings, machinery, and livestock	137	262	489	834	1,356	2,427	334
c. Interest on land	115	193	338	569	1,018	1,405	241
d. Depreciation on buildings and machinery	107	210	388	650	929	1,854	262
e. Labor costs 2/	1107	1314	1542	2098	2,277	3,745	1374
3. Income above cash farm expenses	918	1676	2797	4263	8,860	12,536	2004
4. Residual to labor	559	1010	1582	2210	5,557	6,551	1166
5. Residual to management	-548	-304	40	112	3,280	2,806	-208

1/ Includes all cash farm operating expenses except hired labor costs
2/ Includes operator, family and hired labor

INCOMES AND COSTS

The income or value of total product figures include the value of all farm products sold as well as the value of those used in the home (line 1, Table 2). 2/ These incomes ranged all the way from $1,185 on Class VI farms to $37,708 on Class I farms.

Inputs higher relative to incomes on small farms

The total input figures (line 2) included both out-of-pocket and overhead costs. Total inputs ranged from $1,733 on Class VI farms (which had incomes of $1,185) to $34,602 on Class I farms (which had incomes of $37,708). The large farms not only had much larger incomes than the small farms, but their inputs were lower in relation to incomes. The main reason for this was that the larger units could spread their fixed or overhead costs over more acres and animals. The resulting gain is the most important one which comes from having larger operating units.

Labor is the largest single input on small farms

Total inputs (Table 2) were broken down to show the amounts for cash farm expenses; interest on building machinery and livestock investments;

2/ The rental value of the home has not been included.

interest on land investments; depreciation on buildings and machinery and labor costs. Of all the inputs included here, actually only cash farm expenses and hired labor costs involved a cash outlay. But a charge for operator and family labor and interest on investment were included as inputs to show how net farm income compares with the returns which could be realized were the operator to put all his capital (land included) out at the going rate of interest and to hire out all his labor.

Cash farm expenses include cash outlays for such items as machine hire and repair, fuel and oil, seeds, fertilizer, feed, and livestock and poultry purchases. Cash farm expenses are by far the most important cost on the large farms; on Class I farms they totaled up to $25,172.

Interest on building, machinery, livestock and land investments shows what the farm operator could make if he could reinvest the money tied up in these resources and earn 5 percent on what he has tied up in land and buildings and 7 percent on what he has tied up in livestock and machinery. These interest values or "costs" show that they are relatively unimportant "cost" items for any of the size of farm groups. For any of the size of farm groups the largest single input is either for cash farm expenses or for labor; cash farm expenses is the largest input item on the large farms while labor is the largest item on the small farms. Notice that the increase in labor inputs from Class VI to Class I farms was not nearly so large as the increase in total inputs. Labor inputs increased less than 4 times while total inputs increased about 20 times.

Depreciation on buildings was charged at 5 percent of the estimated 1949 value, while machinery depreciation was charged at 10 percent. Depreciation costs thus represent the estimated dollar value of buildings and machinery used up each year in the production process.

Only large farms show returns to management

Before interest, depreciation and labor inputs were subtracted, all size groups had some income, which ranged from $918 on Class VI farms to $12,536 on Class I farms (Table 2). These income figures indicated that all size groups were able to pay "cash farm expenses" and have something left over for interest, depreciation and labor charges.

Likewise, before labor inputs were subtracted (but after all other input items have been subtracted) all size groups had some income. As indicated by "residual to labor" these amounts ranged from $559 on Class VI farms to $6,551 on Class I farms (Table 2). The amounts listed represent what is left as payment to labor and management.

But after labor and all other input items except management were subtracted, only Class IV, III, II and I farms showed a profit or a positive return

to management. Class VI farms had a negative management return of $548; they were short this much after paying cash farm expenses plus reasonable charges for labor and capital investment. Class V farms (farms with gross sales of $1,200 - $2,499 or an average product valued at $2,311) had a negative return of $304. These positive and negative returns are important in our analysis. To really see their importance requires a graphic picture (Fig. 1). Here the ratio of the value of the total product to the value of the total input is plotted against the value of the total inputs for the six classes of farms. A ratio of 1.0 on the vertical axis represents the break-even point or where the value of the total product is exactly equal to the value of the total input. Thus the horizontal line drawn at 1.0 has special significance. All farms below this line show a loss while the farms above the line show a profit.

In Table 2, Class VI and V farms (farms with gross sales of less than $2,500) show negative returns. These are also the ones below the horizontal line at 1.0 (Fig. 1), and they represent 70 percent of all commercial farms in Economic Area IIIB. The fact that these farms show losses does not mean they are going into debt or that the families on them are starving. But it does mean that they failed to make cash farm expenses together with the conservative wage ($947 per mature worker) and investment costs which were charged against their labor and capital. 3/ If the farm families on these small farms (Classes VI and V) were entirely motivated by profit they would either increase the size of their farming operations or transfer their labor and capital into employment other than farming. 4/ Economically, the losses on these farms mean that the labor and capital employed here did not earn as much as it could either in industry or on larger farms. The positive returns or the "plus 1.0" ratios on the larger farms (farms with gross sales of $2,500 or above) mean that these farms not only earned enough to pay for all inputs but had something left over.

Economies are associated with increased size

By connecting the values for the various classes of farms (Fig. 1) with a broken line, one can more readily visualize the economies of size available to farms in Economic Area IIIB. As shown, the economies of size (average efficiency) increase from Class VI (with gross sales of $250 - $1,200) to Class II farms (with gross sales of $10,000 - $24,999); Class I farms are actually not quite as efficient as Class II farms. However, there are logical reasons for believing that the value of the total product/value of total input ratios (Fig. 1) underestimates the average efficiency of the large, specialized farms in relation to the smaller, more diversified farms. For this reason we

3/ The $947 was the annual average wage for hired farm labor in Kentucky, 1949.

4/ Of course, money income and the goods and services it will buy is only one of the goals which make up the complex of family satisfactions.

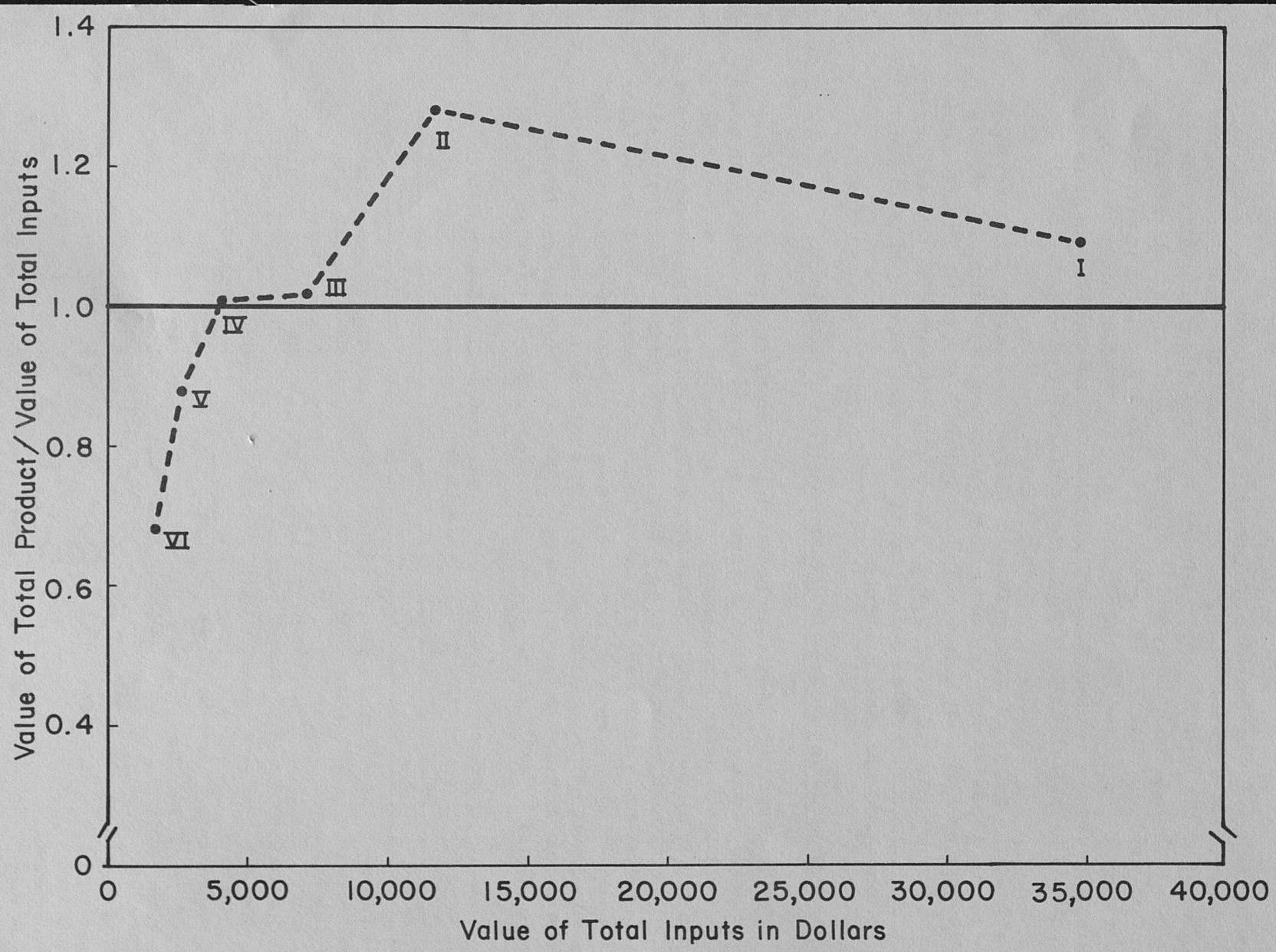

Fig. 1. - The ratio of the value of total product to the value of total inputs in relation to value of total inputs by classes of farms in Economic Area IIIB, Kentucky, 1949. (Source: U.S. Census Data and Estimates)

show the relation between value added/value of fixed inputs ratios and the total value of fixed inputs used (Fig. 2). Fixed inputs or costs are the annual inputs in the form of depreciation on buildings and machinery, interest on land, buildings, machinery and livestock investments and charges for operator and family labor. These costs go on even if nothing is produced. Value added is computed as the value of the total product minus cash operating expenses. Thus the value added/value of fixed inputs ratio shows the net returns to the relatively fixed factors in farming.

Figure 2 shows economies of size (increasing average efficiency) for farms from Class VI to II as does Fig. 1, but in average efficiency the big farms show up relatively better in Figure 2 than in Figure 1. The economies of size illustrated here (Figs. 1 and 2) have important implications in long-run planning particularly as such planning relates to the size of farm which can be expected to be most profitable.

Labor on small farms returns less than a conservative wage

In the short run, of vital importance in farming is whether out-of-pocket costs can be met. When a farmer cannot pay out-of-pocket cash costs he must sooner or later quit farming. To see whether returns were large enough to pay all out-of-pocket costs and a conservative wage to operator and family labor, total costs were broken down to show returns after paying all out-of-pocket costs and to show residual returns to operator and family labor (Table 3). All size groups of farms were able to pay out-of-pocket costs and have something left over. But what was left over was insufficient to pay the overhead cost and the conservative wages charged to operator and family labor on Class VI and V farms (farms with gross sales of less than $2,500).

Table 3. - Income and Costs for Commercial Farms in Economic Area IIIB, Kentucky, 1949
(Source: U.S. Census and Estimates)

Class of farms	VI	V	IV	III	II	I	Average
1. Total product	$1185	$2311	$4100	$7406	$14,969	$37,708	$2992
2. Total inputs	1733	2615	4060	7294	11,689	34,602	3200
a. Out-of-pocket costs 1/	286	718	1479	3558	6,915	27,210	1112
b. Overhead costs other than operator and family labor	359	665	1215	2053	3,303	5,686	837
c. Operator and family labor	1088	1231	1367	1683	1,371	1,707	1250
3. Returns after paying out-of-pocket costs	899	1593	2621	3848	8,054	10,498	1880
4. Residual returns to operator and family labor	540	928	1406	1795	4,751	4,812	1043

1/ Includes cash farm expenses plus hired labor costs.

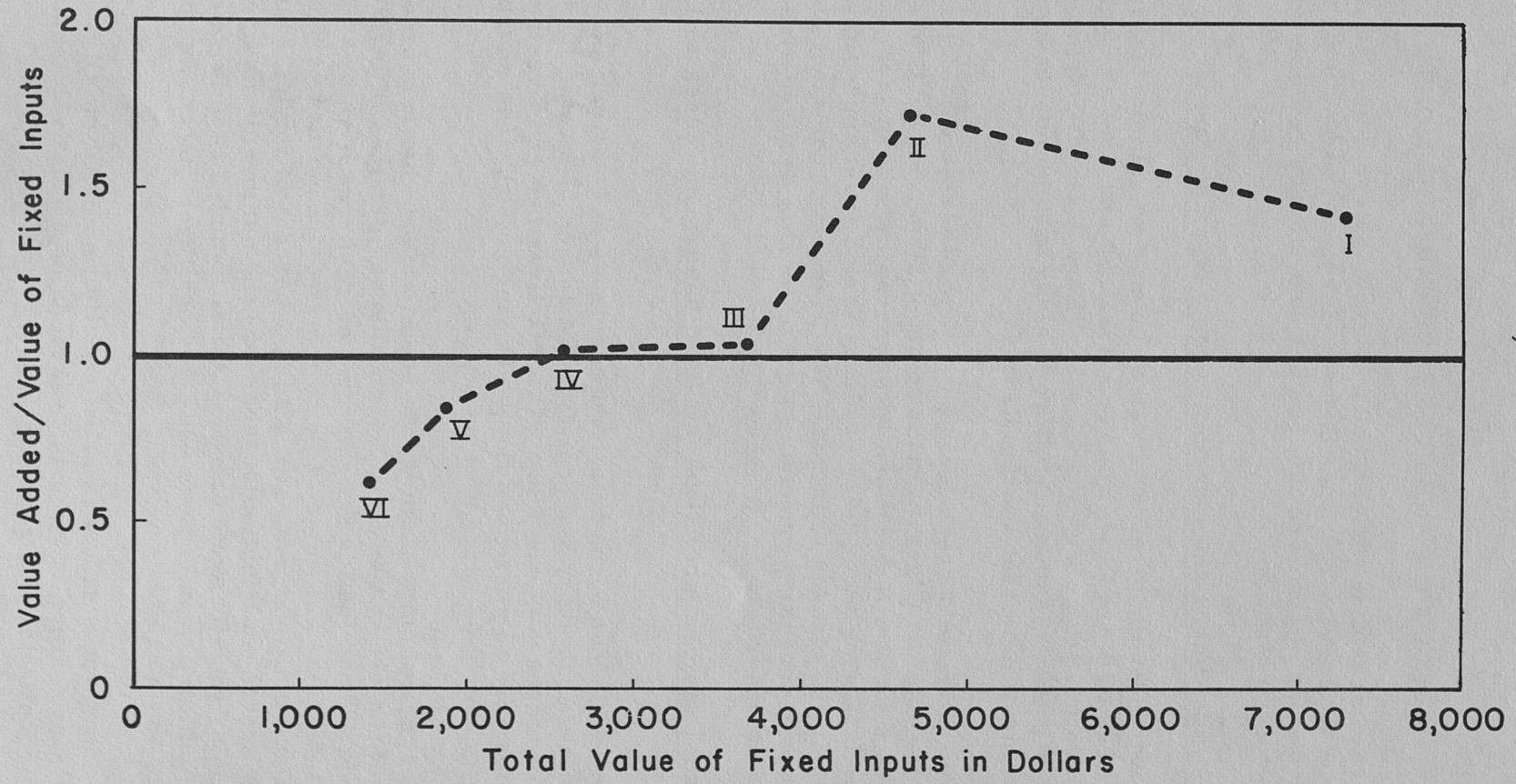

Fig. 2. - The ratio of the value added to the value of fixed inputs in relation to the total value of fixed inputs by classes of farms in Economic Area IIIB, Kentucky, 1949. (Source: U.S. Census and Estimates)

PRODUCTION AND RESOURCE COMBINATIONS

Before we examine the reasons why incomes are much lower in relation to inputs on small farms than on large farms let us see what the different size groups of farms produce and what resource combinations are used to get this production.

Field crops most important source of income on small farms

The two most important sources of income on commercial farms in Economic Area IIIB are field crops and livestock and livestock products other than dairy and poultry, except on Classes VI and V farms (farms with gross sales of $250 - $2,499) where field crops along with home-consumed products are the two most important sources (Fig. 3).

Income from field crops for size groups of farms varied from about 42 percent of the total on Class V farms to about 20 percent on Class II farms, the percentage tending to decrease with increasing size of farm. The relative importance of income from dairy products varied from approximately 5 to 11 percent among the classes of farms. The percentage contributions of poultry sales and home-consumed products to gross income declined steadily with increase in size of farm.

Income from livestock other than dairy and poultry increases with increase in farm size

On the other hand, the relative importance of livestock and livestock products (other than dairy and poultry) as a source of income increased as size of farm increased. On Class VI farms livestock and livestock products accounted for only 15 percent of the gross income, whereas on Class I farms they made up nearly 64 percent of the income.

To get the complete picture, we need to know what resources were required to get the production for different classes or sizes of farms (Fig. 4). The percentage contribution of each input or resource item was based on the estimated annual use value of these inputs or resources. Thus, the annual contribution of land was estimated at 5 percent of the total land investment. The annual contribution of labor was the number of mature workers times the going wage in agriculture. Capital included cash farm expenses, interest on buildings, machinery and livestock investments, and depreciation on buildings and machinery.

Percentagewise, land was about equally important on all farms, irrespective of size. For all size groups it made up a relatively small portion (8 percent) of the total annual inputs.

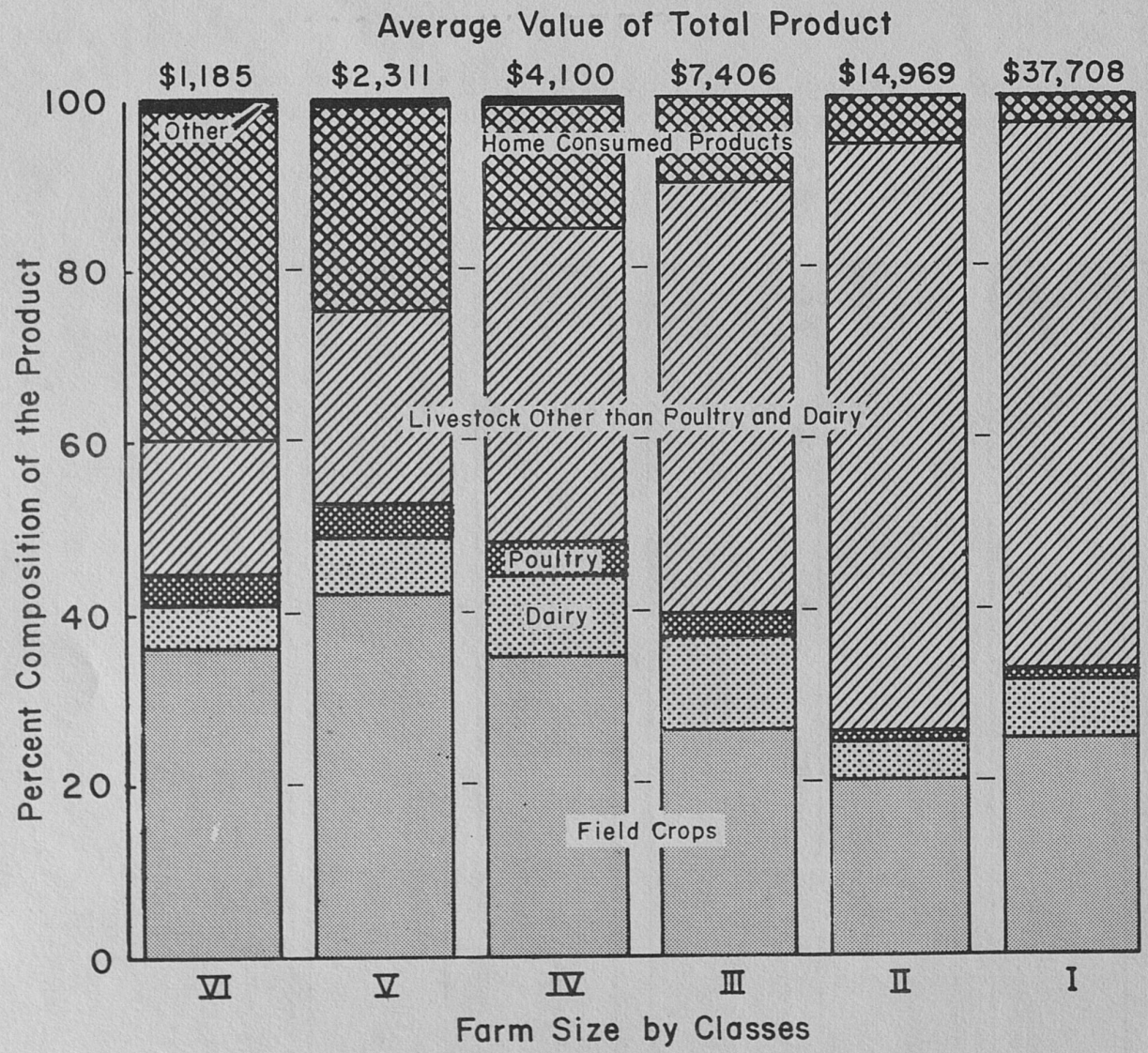

Fig. 3. - The percentage composition of the product for classes of farms in Economic Area IIIB, Kentucky, 1949. (Source: U.S. Census, 1949.)

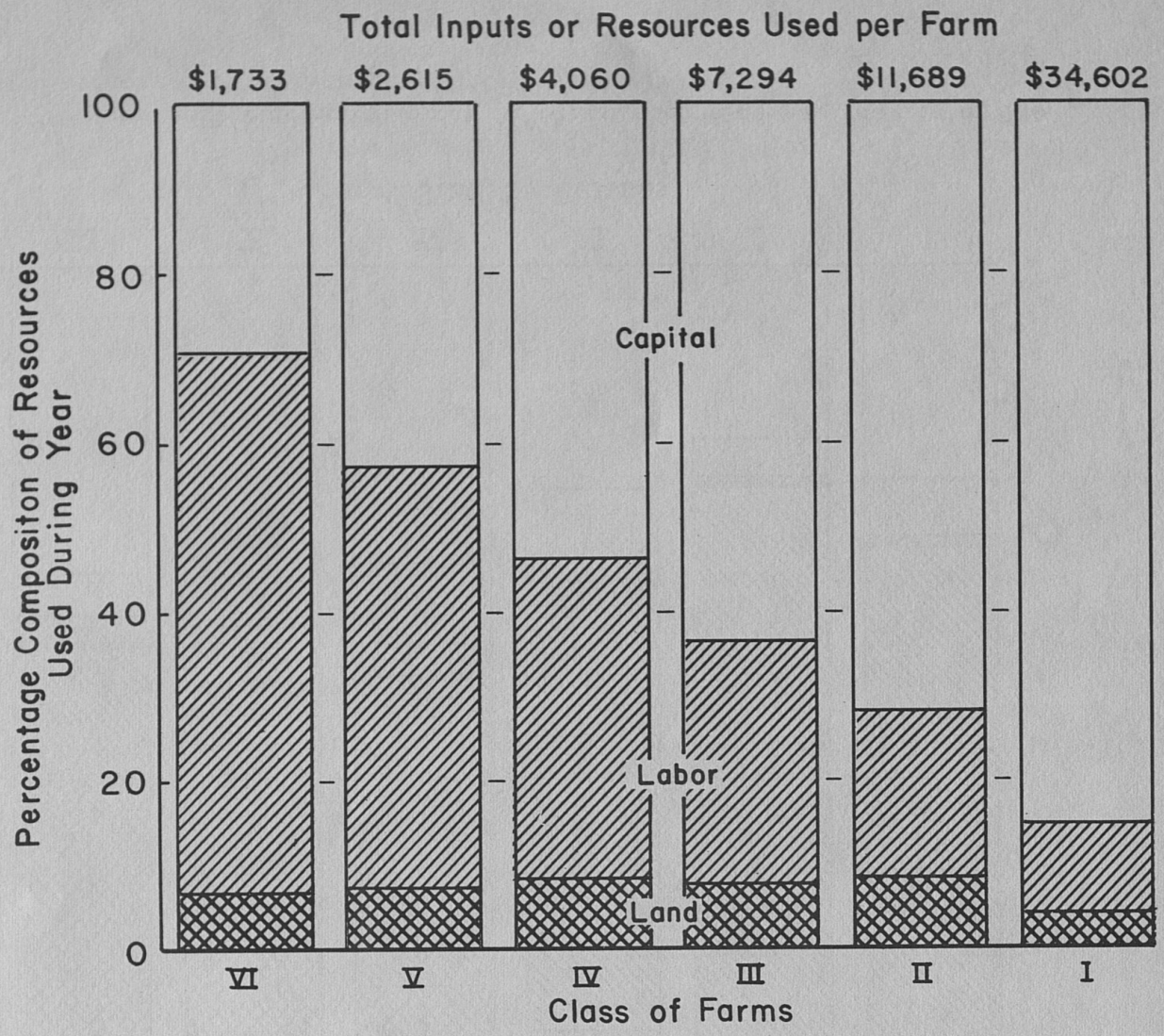

Fig. 4. - The percentage composition of inputs or resources used per year by classes of farms in Economic Area IIIB, Kentucky, 1949. (Source: U.S. Census and Estimates.)

Labor inputs rank highest on small farms while capital inputs rank highest on large farms

Labor inputs were relatively more important on the smaller farms than on the larger farms. In fact, on Class VI farms labor inputs were more inportant than all other inputs combined. In contrast, on the larger farms Classes IV, III, II and I capital was by far the most important input item.

The decreasing importance of labor and the increasing importance of capital as farms increase in size is clearly illustrated in Fig. 4. This means that the amount of capital used per worker increases as farm size increases. This is one reason why incomes are much higher in relation to inputs on large farms than on small farms. For any one input or resource to be productive it must have enough of other inputs or resources to go with it. Land by itself is not productive. Neither is labor by itself, nor capital by itself. Let us see how productive labor, land and capital are on farms of different size.

PRODUCTIVITY OF LABOR, LAND AND CAPITAL

We said earlier that operators on many small farms are not getting much return for the time they spend farming. In other words, on many small farms labor is not very productive. We have already talked about residual returns to labor. We defined residual returns to labor as what is left after subtracting all inputs (including a fair return to land and capital), except labor inputs, from gross income. This gives a rough estimate of what labor earns. Heretofore, we have either figured the residual return to all labor or all operator and family labor for different classes of farms. But since large farms employ more workers than small farms, we need to compute the residual returns to labor per worker to find out how productive labor is on farms of varying size. We first computed the average number of workers per farm and the residual returns to labor per worker for the six classes of farms (lines 1 and 2, Table 4).

Returns to labor per worker are low on small farms

Notice that the average number of workers per farm increased about 2 times from Class VI to Class II farms, but the residual to labor per worker (net returns per worker) increased about 5 times. The last column in the table shows an average net return per worker for all farms of $804. Classes VI and V had less than this amount. Class VI farms had only $478, while Class II farms had $2,315, or a difference of $1,837.

Table 4. - Resource and Product Ratios for Productivity of Labor, Land and Capital, Economic Area IIIB, Kentucky, 1949 (Source: U.S. Census and Estimates)

Class of farms	VI	V	IV	III	II	I	Average
Number of workers (man years of all labor)	1.17	1.39	1.63	2.22	2.40	3.95	1.45
Residual to labor per worker	$478	$727	$971	$995	$2315	$1658	$804
Acres per worker	60	69	83	91	145	130	75
Total investment per worker 1/	$3874	$5816	$8939	$11,119	$17,598	$16,760	$7033
Land and capital inputs per worker 2/	535	935	1545	2341	3922	7812	1259
Total product per worker	1013	1663	2515	3336	6237	9546	2063

1/ Includes investment in land, building, livestock and machinery.
2/ These are the annual inputs, not the investments themselves, and include cash farm expenses, interest on land, buildings, machinery, and livestock together with depreciation on buildings and machinery.

Part of this difference is explained by the amount of other resources used along with labor. For instance, notice how acres per worker increased from Class VI up through Class II farms, investment per work increased up through Class II farms and land and capital inputs per worker increases without exception from Class VI through Class I farms. Actually, land and capital inputs per worker gives a more accurate picture of the resources used along with labor. These inputs included cash farm expenses which ran high on the larger farms, particularly in the form of feed and feeder livestock purchases.

Total product per worker increases as capital and land per worker increases

In order to determine how much land and capital add to total production, total product per worker was compared with land and capital per worker (Fig. 5). This comparison gives a rough idea of what one farm worker produced with various amounts of land and capital. Total product per worker increased from $1013 on the smallest farms (Class VI) to $9,546 on the largest (Class I). At the same time, land and capital inputs per worker increased from $535 to $7,812. Notice that total product per worker increased throughout as land and capital inputs per worker increased.

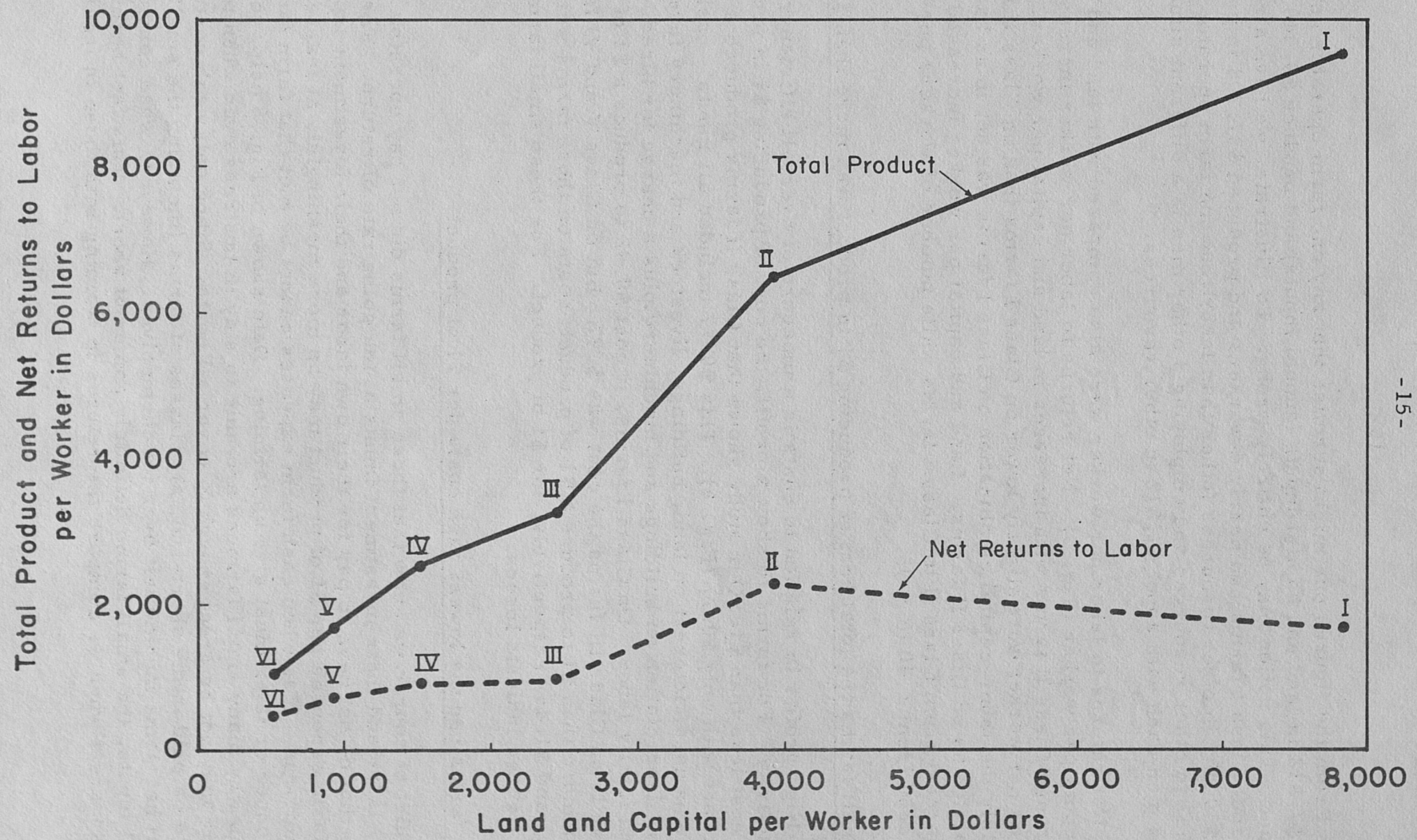

Fig. 5. - Productivity of land and capital, Economic Area IIIB, Kentucky, 1949.
(Source: U.S. Census and Estimates)

From the figures one might surmise that any one farm operator could take $7,812 in land and capital inputs (annual inputs) and produce $9,546 in product. This notion may be entirely wrong. To illustrate, we have already seen that Class I farms had nearly 4 workers and produced $37,708 in product with $30,857 in other resources (other than labor); but one farm operator with $30,857 in other resources and employing 3 other men is a different situation than 4 men each with about $7,812 in other resources.

Net returns to labor per worker were also compared with land and capital inputs per worker (Fig. 5). Net returns to labor per worker increased up through Class II farms with increases in land and capital per worker. Net returns per worker were slightly lower on Class I farms than on Class II farms. Possibly the labor-capital combination on Class I farms was not in as balanced proportion as on Class II farms. Land and capital per worker increased about 100 percent from Class II to Class I farms while number of workers per farm increased from 2.40 to 3.95.

On small farms the total cost of producing $1 in product was more than $1

High profits in relation to costs is a measure of over-all efficiency or productivity. For farms to show a profit, the cost of producing $1 in product must cost less than $1. Our study shows that Class II farms produced a $1 of product with only $0.77 (Fig. 6). This $0.77 included all inputs - cash farm expenses, interest on land, buildings, livestock and machinery investments, depreciation on buildings and machinery plus a charge for hired, operator and family labor. On Class I farms, it cost $0.92 to produce a $1 of product while on Class III farms the cost was $.97. But on Class V and VI farms it cost more than $1 to produce a $1 of product; costs on those farms were $1.11, and $1.46, respectively, for $1 of product. For these small farms, these figures indicate losses.

Small farms had the lowest cash costs per $1 of product

But, of course, we know that these small farms did not pay operator and family labor and their investment inputs at the going rate of return. For farms that do not have to pay for their own labor and their investment inputs, cash farm expenses per $1 of product may be more meaningful, at least in the short-run. It is when cash farm expenses cannot be met that farm families sooner or later must give up farming. Data shown in Fig. 6 help to explain why many small farmers are able to stay in business even when total product may not be great enough to cover all costs. Since only cash costs have to be paid in the short-run, all classes of farms (including the small farms) had some income left over for themselves. However, when considering all inputs, the small farms definitely come out short. This fact becomes very apparent when we compare the returns in farming with those in industry.

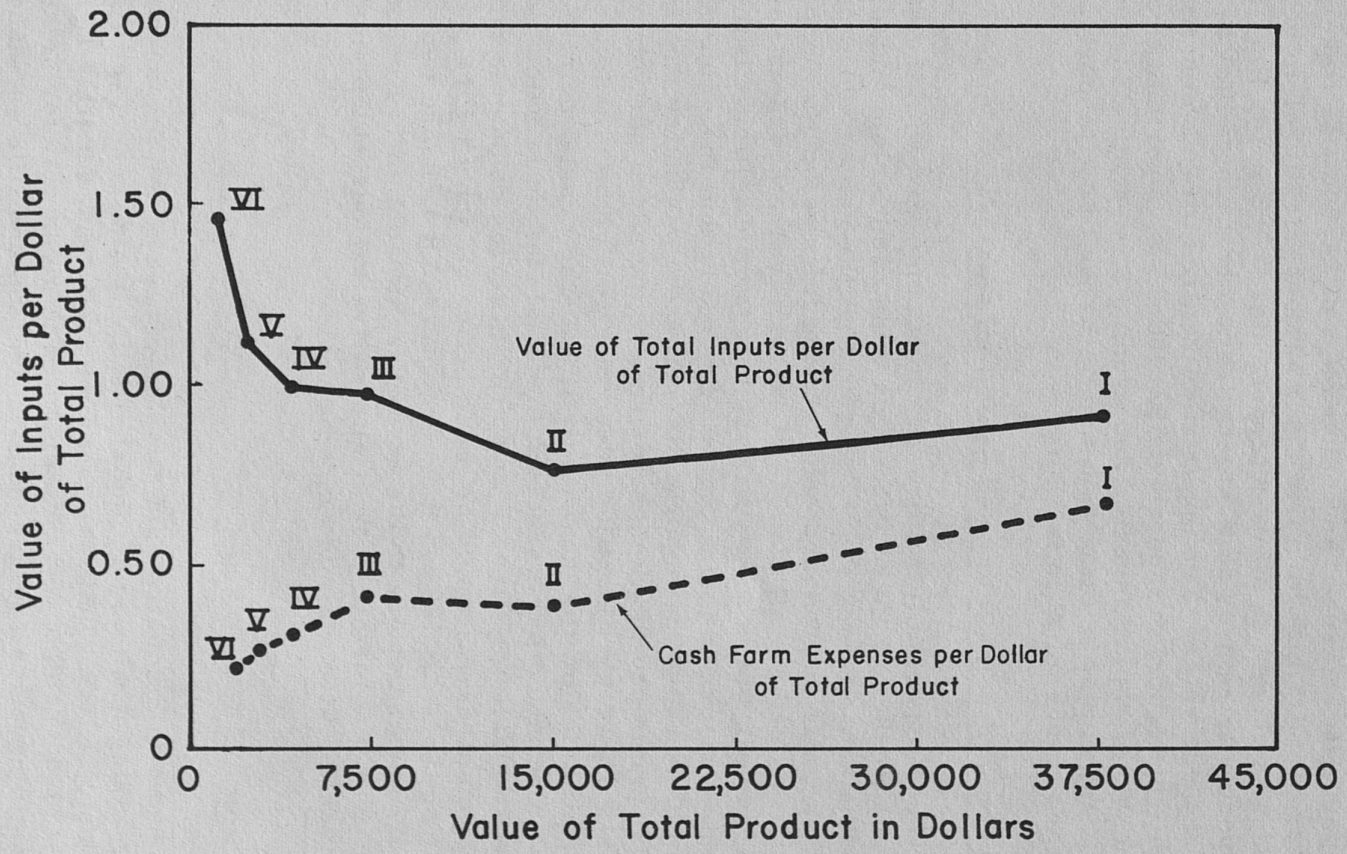

Fig. 6. - Value of inputs in relation to value of product for classes of farms in Economic Area IIIB, Kentucky, 1949. (Source: U.S. Census and Estimates)

OPPORTUNITY RETURNS TO FARM LABOR AND CAPITAL

To compare the returns to labor and investment in capital and land in farming with the opportunity return for these resources in industry, we first need to arrive at suitable wage and interest rates as a basis for figuring the opportunity returns. An annual wage of $2,900 was figured as a reasonable wage opportunity for farm labor in nonagricultural employment, and 5 percent was chosen as a fair interest rate. 5/ The top line (Fig. 7) shows the opportunity returns to Kentucky farm labor and capital as figured on the basis of these rates. The opportunity returns for one man without any capital (only his labor) in industry is $2,900. The opportunity return for one man with $6,000 of capital invested and earning 5 percent is $2,900 plus $300 or $3,200. Thus, the top line represents the real cost (opportunity returns) of using labor and capital in farming.

Dollar costs of using labor and capital on small farms appear high

These opportunity returns are then compared with the value actually added per worker by these resources when used on the various classes of farms (the broken line, Fig. 7). Note that the value added per worker when employing his resources in farming falls below the "opportunity-returns-in-industry line" for all classes of farms. Value added as computed does not include any allowance for rental value of farm dwelling. If this had been included as a return in farming, it is very likely that the value-added-per-worker line would be above the opportunity-returns-in-industry line for Class II farms. (Class II farms had the highest average value added per worker of the six classes). However, the value added per worker on other classes of farms would still be below the opportunity line. The crucial point to observe is how far the value added per worker on the small farms is below the opportunity line (particularly for Class V and VI). In terms of income only, families on these small farms would be much better off working for wages in industry and letting their capital out at 5 percent. Such a change represents one of the alternative solutions to the size of farm problem in Economic Area IIIB. But let us take a further look at alternative actions which small farm families might take to solve their low income problem.

5/ $2,900 was computed as a simple average of the mean weekly wage in manufacturing in Michigan, Indiana, Illinois and Tennessee times 52. (From U.S. Dept. of Labor, Bureau of Labor Statistics, Monthly Labor Rev., Vol. 70, 1950, Table C-5). Earnings were given only for selected states. Ohio would have been preferred over Indiana and Illinois, and Kentucky over Tennessee, but the opportunity for exercising these preferences was not available.

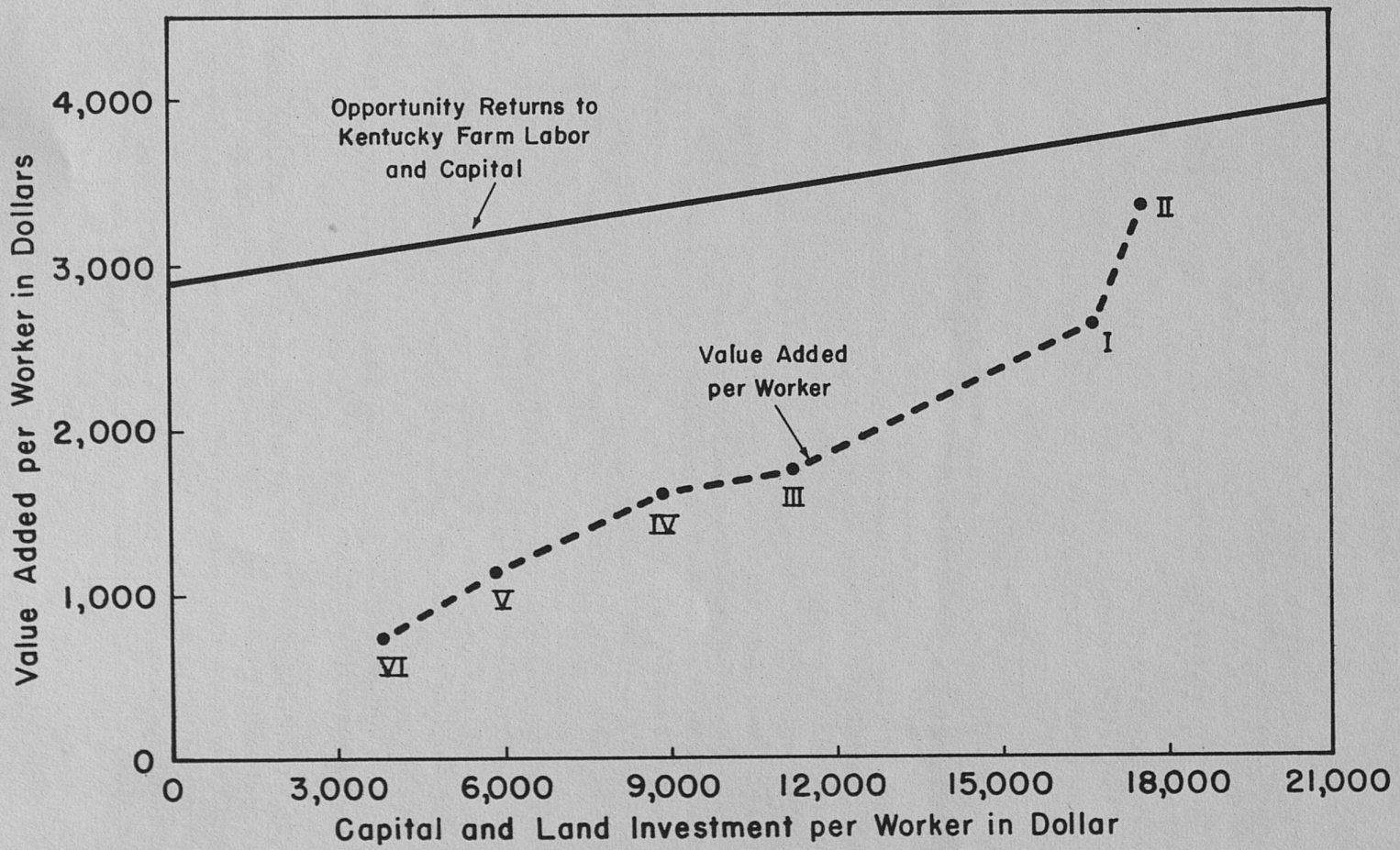

Fig. 7. - Opportunity returns compared with value added per worker in relation to capital and land value per worker, Economic Area IIIB, Kentucky, 1949.
(Source: U.S. Census and Estimates)

POSSIBLE SOLUTIONS TO THE SIZE-OF-FARM PROBLEM

First of all a study such as this can provide no blanket answers or solutions which apply to each and every farm. Each individual farm family situation differs and the way in which each farm family solves its problems depends on the relative value placed on income, security, independence, companionship, community prestige and other goals. Moreover, the conclusions which can be drawn from this study are based on average returns and average costs for various classes or size groups of farms. Each group is likely to include numerous deviations from the average. Nevertheless, a study such as this points up some very important farm problems together with some possible answers.

For example, from this study we conclude that operators of small farms have either relatively low or negative returns to their labor. Now, if these operators wish to increase their returns, here are some possible alternatives. If they want to stay in farming, they must somehow or another increase their land and capital per worker; in some instances, management will also have to be increased. Possible alternatives for getting control of more land and capital are renting more land, borrowing money, buying a larger farm, or doing custom work for others. If the operators are willing to work partly in farming and partly in industry, part-time farming may be an alternative. Part-time farming can serve to increase resources per worker in farming and thereby increase returns to labor on small farms. If small-farm families are willing to move completely out of farming, full-time off-farm employment is a way of increasing returns to their labor.

It is quite clear then that many operators of small farms are not getting much return for the time they devote to farming. To increase their incomes, obtaining off-farm employment and/or increasing their land and capital per worker appear as the most effective alternatives. If these alternatives appear unsatisfactory, then farm families on small farms will have to continue to use mostly labor in their farming activity and the returns from their labor will continue low.

The extent to which these alternatives are unavailable and/or unacceptable suggests other aspects of the low income problem as it relates to size of farm. This study has emphasized mainly one aspect, namely, the relationship between income on the one hand and capital, labor and other inputs and product combinations on the other. But an integrated approach to the problem requires study and understanding of other aspects as well.

OTHER ASPECTS OF THE SIZE-OF-FARM PROBLEMS

Moving from farm into off-farm employment requires mobility. Families on small farms may be immobile for a number of reasons. Some may value "life on the farm" so highly that the added income in off-farm employment is considered worth less than the happiness experienced from living and working on the farm. Some stay on the farm perhaps because they lack or believe they lack the necessary skills and training for off-farm employment. Some remain on the farm perhaps because they lack knowledge of off-farm employment opportunities or because they fear to move. Others remain on the farm, perhaps, not because they would not prefer to move but because they do not have enough money to get established elsewhere. Until causes for immobility are understood and until steps are taken to overcome immobility wherever it is considered as an obstacle to greater human satisfactions, off-farm employment can hardly be considered as a realistic alternative for solving the income problem on small farms.

The analysis of this study suggests that if families on small farms want to stay in farming they must somehow or another increase their land and capital per worker if they desire to increase their income. Some of these families may very well be seeking ways of attaining more land and capital. Some may be held back because they can find no land to rent. Some may be held back because they can't borrow money with which to buy land, machinery, livestock, fertilizer or other inputs. Still others may hold themselves back because they consider expansion of operations with borrowed money too risky. Until the reasons why families on small farms fail to increase land and capital per worker are clearly understood and until steps are taken to facilitate such increases, increasing land and capital per worker can hardly be considered as a real alternative for solving the income problem on small farms.

Increasing land and capital per worker to increase incomes on small farms would be a poor practice in instances where managerial skills are inadequate for profitable use of additional land and capital. A large farm business nowadays requires considerable skill and know-how in management and decision-making for financial success. Until more is known about the managerial skills and capacities existing on small farms and until steps are taken to improve these skills where they are lacking, increasing size of farm can hardly be considered as a realistic alternative for solving the income problem on small farms.