INDICATORS OF FARM EFFICIENCY

Efficiency of farm operations is reflected in the returns or output obtained in relation to the quantity or value of inputs used. Farming inputs may be grouped under the broad categories of land, labor, operating capital, and management. Operating capital includes investments in machinery, equipment, and livestock, and current expenditures for items such as gasoline and oil, machine hire, seed, feed, and fertilizer. Investment in land and buildings is also a capital input, but because of the basic role of land in agriculture and its spatial as well as productivity aspects, it is helpful in some phases of an analysis of farming to consider the land resources in terms of acreage as well as in terms of capital investment. Likewise, it is helpful in an examination of farming efficiency to make some analysis of output in relation to physical units of labor as well as in relation to the value of labor services (*5*).

One of the best measures of average resource productivity and efficiency is the relationship of total production to all resources used in farming. An overall output-input measure of that kind for the different types and economic classes of farms in the Corn Belt would require data on items in addition to those for which information was available in the present study. On the output side, data on value of farm products used in farm households would be necessary in addition to the value of all farm products sold. On the input side, data on various expenditures and costs in addition to those reported in the Census would be necessary. However, the available data do make possible a number of comparisons of the intensity of resource use on the different types and economic classes of farms and the computation of some measures that indicate the relative efficiency of production on different economic classes of farms. Data providing some comparisons of resource use and some indications of relative efficiency for farms in the Corn Belt are presented in the following tables.

PRODUCTION PER UNIT OF LAND

The percentage of land in high return crops is a measure of intensity of cropping and it often is useful in explaining differences in economic returns of individual farms or groups of farms. In the Corn Belt the two most widely grown high return crops are corn and soybeans. The percentages of cropland occupied by each of these crops on farms in different regions of the Corn Belt in 1954 are shown in table 91. Groups of farms having a relatively high percentage of cropland in both of these crops are generally those showing the highest value of farm products sold per acre of cropland. The percentage of harvested cropland used for corn and soybeans is shown for each economic class of cash-grain and livestock farms in table 92. On cash-grain farms there was no consistent relationship between economic class and percent of cropland in corn. On livestock farms, however, Class I farms had the highest percentage of cropland in corn and the proportion of cropland in corn declined consistently from Class I to Class VI farms. The percentage of cropland in soybeans was highest on Class I farms and consistently less on each of the lower economic classes of farms. This was true on livestock farms as well as on cash-grain farms.

The number of cattle and calves and of hogs and pigs per 100 acres of land in farms indicate the relative intensity of production of these livestock (tables 91 and 92). In the Corn Belt as a whole, livestock farms had more than twice as many cattle and more than 4 times as many hogs per 100 acres as did cash-grain farms. The average number of cattle and calves per 100 acres on livestock farms was highest in the Central and Northern Corn Belt (22 head and 21 head, respectively), and lowest in the Southern Corn Belt (14 head). The Central Corn Belt had the largest number of hogs and pigs per 100 acres of farmland on both cash-grain and livestock farms as well as on all commercial farms. Livestock farms in the Central Corn Belt had an average of 56 hogs and pigs per 100 acres of farmland compared with 21 on livestock farms in the Southern Corn Belt. The number of head of livestock per 100 acres of farmland was strongly correlated with economic class of farm on the livestock farms. Economic Class I livestock farms had an average of 28 cattle and calves per 100 acres, while Class VI livestock farms had only 12. The average number of hogs and pigs per 100 acres was 42 on Class I livestock farms and 11 on Class VI livestock farms. On cash-grain farms, all economic classes of farms had much fewer livestock per 100 acres than did livestock farms, and the differences between classes were less conspicuous.

The number of hogs and pigs per 100 acres of cropland on livestock farms ranged from 60 on Economic Class I farms down to 48 on Class III farms, and 25 on Class VI farms. On cash-grain farms, the Classes I, II, and III farms had 11 or 12 hogs and pigs per 100 acres of cropland, while the Class IV farms had 8, and the Class VI farms had only 4.

TABLE 91.—PRODUCTION OF CORN, SOYBEANS, CATTLE, AND HOGS IN RELATION TO ACREAGE OF FARMLAND, BY TYPE OF FARM, IN THE CORN BELT AND COMPONENT REGIONS: 1954

Region and type of farm	Percent of total acres of cropland harvested		Head of livestock per 100 acres of all land in farms		Number of hogs and pigs per 100 acres of cropland
	Corn harvested for grain	Soybeans harvested for beans	All cattle and calves	All hogs and pigs	
Total Corn Belt:					
All commercial farms	37.7	11.3	13	22	30
Cash-grain farms	38.7	18.3	8	8	11
Livestock farms [1]	39.0	5.7	18	34	51
Eastern Corn Belt:					
All commercial farms	38.5	16.0	12	23	30
Cash-grain farms	39.1	23.4	6	9	11
Livestock farms [1]	41.1	9.5	16	48	62
Central Corn Belt:					
All commercial farms	43.6	15.7	15	33	41
Cash-grain farms	43.1	23.8	8	12	14
Livestock farms [1]	44.9	7.2	22	56	71
Northern Corn Belt:					
All commercial farms	33.2	9.8	15	27	36
Cash-grain farms	32.1	17.8	7	10	12
Livestock farms [1]	36.5	4.9	21	42	58
Western Corn Belt:					
All commercial farms	40.2	2.7	14	16	23
Cash-grain farms	41.3	4.3	8	5	7
Livestock farms [1]	40.1	1.7	18	23	38
Southern Corn Belt:					
All commercial farms	27.7	16.9	12	14	23
Cash-grain farms	29.9	27.5	7	6	9
Livestock farms [1]	28.7	9.9	14	21	38

[1] Livestock other than dairy and poultry farms.