

50% COTTON SHIRTS
U.S.A.

WHAT IS THE AGRICULTURAL PROBLEM

by

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HONORS ESSAY

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A. INTRODUCTION

No apology for a paper on agricultural economics in the United States is necessary. It is a recognized problem area. But there seems to be some confusion as to the nature of the agricultural problem. The purpose of this paper is to determine as nearly as possible, exactly what the problems in agriculture are.

Before analyzing the economic problems of any area, it would be best to state the goals of the economy. For what economic conditions are we striving? Two main goals can be identified: efficiency and equity. Efficiency is concerned with the allocation of resources. Resources should be distributed in such a manner that the largest amount of goods and services are delivered at the least cost. If a shifting of factors of production is possible which will either increase production or lower costs, or both, the concept of efficiency would suggest that the shift be made.

Efficiency could be the only goal if we are not concerned with inequalities in income distribution, and if the marginal utility of money were the same for everyone. But neither condition holds. Some criterion in addition to efficiency is needed, and this is equity. Equity is much more subjective than is efficiency, but probably no less important. Equity can

be defined as fairness, impartiality, and to a lesser extent freedom. The principle of equity would suggest that a human factor of production should be treated as an end and not as a means to productivity only. Difficulties arise when one must be given up in order to achieve more of the other. This difficulty, as will be seen, plays an important part in analyzing the economic problems of agriculture.

With the goals of the economy defined, the main problem areas of agriculture can now be stated. The instability and the lowness of agricultural incomes are referred to most frequently as the problem conditions in agriculture. The policy of the federal government for the past several years has been to try to achieve higher incomes in agriculture. The method used is a price support system on several agricultural crops. In most cases the minimum price set is higher than the equilibrium price which would exist under free fluctuations of supply and demand. This upsets the equilibrium and creates a surplus of supply over demand at the established minimum price. This surplus can be considered as a third problem area although it has been caused by government action and is not inherent in agriculture itself.

The United States is not unique in having agricultural difficulties. There is no modern industrial nation today, according to Rainer Schickele, that does not in one way or another support prices of at least some of its

important farm products.¹

A brief summary of the basic agricultural problems of the past fifty years might be helpful as a background for the problems of today. The agricultural depression in the 1920's was in large measure the result of efforts to expand production to meet the needs of our allies during World War I, and of subsequent disruption of normal exchange relationships which grew out of the war. The agricultural problem of the 1930's was associated with almost world-wide depression and seriously demoralized international markets. Again in the 1940's production was expanded far beyond the requirements of our own population, particularly in wheat, pork, and eggs, to supply people in foreign countries during the war and immediate postwar years.²

Does an agriculture problem really exist today when international markets are stable and the purchasing power of the American consumers is high? An examination of the most commonly designated problem areas of agriculture should produce an answer.

B. INSTABILITY OF AGRICULTURAL INCOME

The problem of continuous and year-to-year adjustment of

¹Rainer Schickele, Agricultural Policy, Farm Programs and National Welfare, p. 136.

²Murray R. Benedict, Can We Solve the Farm Problem? An Analysis of Federal Aid to Agriculture, p. 16.

agricultural production to meet the changing economic order is very large and difficult for agriculture. The two main causes of income instability in agriculture are (1) those inherent in agriculture production, and (2) those caused by fluctuations in demand.

Agricultural production is subject to many risks and uncertainties that are a major cause of income instability. Frost, drought, floods, hail, wind, animal and plant diseases of many types, and a whole array of insects and pests determine, to a large degree, whether yields are large or small, whether flocks and herds increase or not, whether livestock is stunted by disease or if it gains well while on feed. Every year many farmers experience unexpected losses while other receive windfalls which compensate each other on the national scene, but fail to reveal what happens to the individual farmers.³

There is some disagreement as to how the second cause of agricultural income instability--fluctuations in demand--arises. According to Murray Benedict, the sudden changes in demand arise most commonly and importantly from changes in the amount exported. Domestic demand, he feels is relatively stable, but sharp changes in export requirements pose problems of quick adjustment which agriculture is poorly equipped to meet.⁴ Willys Knight, on the other hand, feels that since only a

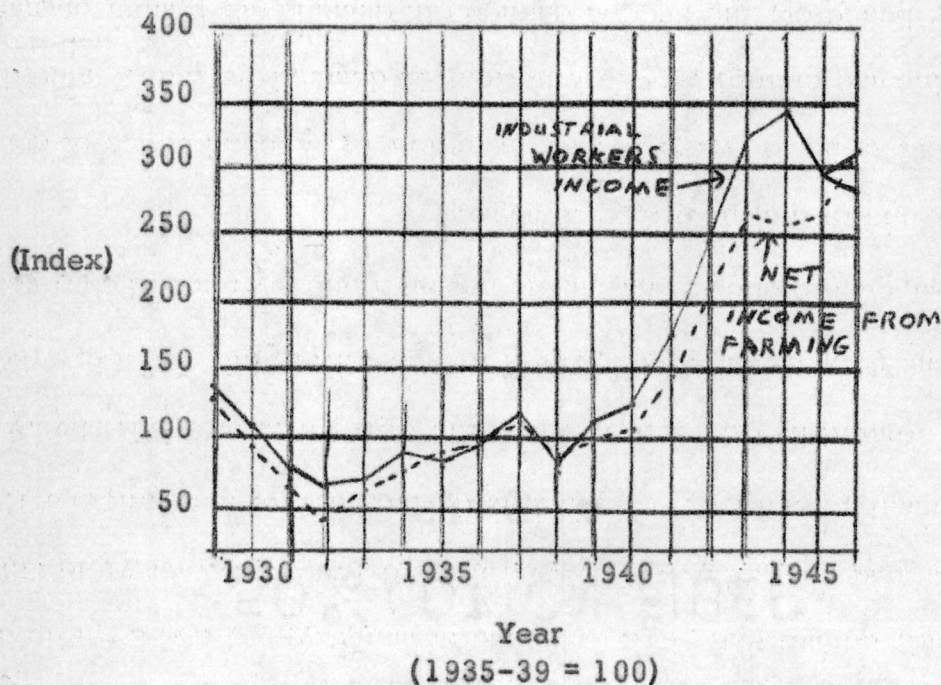
³T. W. Schultz, Agriculture in an Unstable Economy, pp. 212-13.

⁴Benedict, op.cit., p. 24.

small portion of the supply is sold abroad, the cause of fluctuations in demand must be domestic.⁵ Domestic demand, he feels, varies primarily with city consumers' incomes. This is shown by the parallelism of industrial worker's incomes and farmer's incomes in table one. Industry can be prosperous while agriculture is depressed, but agriculture is not prosperous when nonagriculture is depressed.

TABLE 1

THE PARALLELISM OF INDUSTRIAL
AND FARMING INCOMES⁶



⁵ Willys Knight, "Agriculture," in The Structure of American Industries: Some Case Studies, Walter Adams, ed., p. 18.

⁶ Ibid.

As shown by table two, when business has boomed, agricultural income has risen twice as fast as nonagricultural income. When business became depressed, income from agriculture fell more precipitously and decidedly further than the income of persons not on farms.

TABLE 2
CYCLICAL MOVEMENTS IN PER CAPITA AGRICULTURAL
AND NONAGRICULTURAL INCOME⁷

Changes in per capita net income of persons in agriculture		Changes in per capita net income of persons not in agriculture	
Period	Percentage change from first to last year of period	Period	Percentage change from first to last year of period
1911-1919	+160	1911-1919	+ 88
1919-1921	- 62	1919-1921	- 18
1921-1929	+ 87	1921-1929	+ 22
1929-1932	- 67	1929-1932	- 52
1932-1937	+153	1932-1937	+ 59
1937-1938	- 19	1937-1938	- 7
1938-1943	+213	1938-1943	+101

The figures show that uncertainty of income has been greater in the agriculture sector than in the nonagriculture sector of the economy. The movement of agricultural income has been much more violent than non-agricultural income.

⁷ Net Farm Income and Parity Report: 1943, and Summary for 1910-42, U.S. Department of Agriculture, Bureau of Agricultural Economics, Washington, D.C., July, 1944, Table 6, p. 12, as cited in Schultz, op.cit., p. 214.

The inelastic supply and demand schedules for farm products exaggerate the effect of small changes in either supply or demand. Farm production cannot respond to changes in demand as quickly and spontaneously as can industrial production. Farmers tend to support output instead of prices. Farm prices fell in one year, from 1930 to 1931 by 30%, while wholesale prices of manufactured products fell only 12%. In the three years from 1929 to 1932, farm prices dropped 54%, while industrial prices declined only 25%. In the 1938 recession farm prices were forced down 22% as compared to 7% in industrial prices. From 1948 to 1949, farm and industrial prices fell 11 and 4% respectively.⁸

From 1929 to 1932, farm output remained virtually unchanged while factory output dropped 47%.⁹ By maintaining output in the face of severely reduced consumer purchasing power, farmers suffer a drastic cut in income as a result of very low farm prices, and make ample food supplies available to city people at low prices, which in turn supports city consumer's demand for industrial goods.¹⁰ Farm prices are very sensitive to changes in economic expectations of the urban-industrial community.

⁸ Agricultural Outlook, U.S. Department of Agriculture, Washington, October, 1949, p. 1, as cited in Schickele, op.cit., p. 153.

⁹ Schickele, op.cit., p. 156.

¹⁰ Ibid., p. 154-55.

Farm prices quickly reflect a bullish or bearish turn. Nonfarm prices do not quickly reflect a turn. Prices farmers pay for secondary and tertiary industrial products including services are comparatively insensitive to changes in business outlook. This partly offsets the fact that under these conditions labor is less expensive because some of the unemployed in industry seek employment in agriculture.¹¹

The price of a product multiplied by the quantity of the product sold is equal to the revenue or income received. Agricultural income in 1932 fell to 46% (46% x 100%) of the 1929 level, while nonagricultural income fell to 39-3/4% (75% x 53%) of the 1929 level. Looking at the situation in the aggregate, it appears that industry has suffered a greater loss than has agriculture. But during business slumps, industry dismisses labor, whereas agriculture gained 225,000 workers between 1929 and 1932.¹² Industry shifts the major burden of the depression onto the taxpayer and government through increased relief payments and onto the unemployed. About 80% of farm workers are self-employed and cannot fire themselves and thereby reduce costs. Agriculture, by gaining workers, bears not only its full share of the depression but part of the city people's burden as well.¹³

¹¹ Schultz, op.cit., p. 131.

¹² Economic Report of the President, 1960, p. 234.

¹³ Schickele, loc.cit.

As a brief summary of the causes of instability of agricultural income, it has been shown that during business contractions, agricultural production does not drop and farm prices drop more than prices farmers pay for goods used in farm production and family maintenance. During business expansion, industry's output rises more than does agriculture's, and the prices of goods and services that farmers buy rise less than prices of crops and livestock that farmer's sell.¹⁴ Aggregate agricultural supply is very inelastic and very stable, but individual farmers had fairly large gains and losses caused by the uncertainties of nature within the aggregate. The demand function for agricultural products is also very inelastic and the amount demanded fluctuates widely with the business cycle. These two factors are primarily responsible for the instability of agricultural income.

C. THE LOWNESS OF AGRICULTURAL INCOME COMPARED TO NONAGRICULTURAL INCOME

1. Existence of low income in agriculture

There are differences throughout the economy in incomes received by persons in different occupations. This does not automatically constitute a problem. Insufficient income must be judged on some basis of

¹⁴ Schultz, op.cit., p. 132.

social welfare. If an income does not provide the worker and his family with decent food, clothing, housing, and medicine, then it should be termed insufficient. If a person employed full time has an insufficient income, it means that at that job he contributes very little toward national production of goods and services. If this is a lack of skill in the person himself regardless of the job he is engaged in, then it is a problem of education and training. But if the worker could be more productive in a different occupation but is not able to move to that job because of some barriers, this is an economic problem. The questions that must be answered in this section are (1) does agriculture have insufficient income? and (2) if so, is it caused by the lack of ability of the worker, or from some barrier that keeps the worker from a more productive occupation?

The income of agriculture will be considered from the standpoint of per capita income, per worker income, real income, and share of national income.

Per capita income in agriculture as seen by table three has been only about one-half of that of nonagricultural income.

TABLE 3

COMPARISON OF FARM AND NONFARM POPULATION,
NET INCOME, AND PER CAPITA INCOME,
1910 - 1959¹⁵

	Net Farm Income (Bill.)	Net Non- farm Income (Bill.)	Farm Popu- lation (Mill.)	Nonfarm Popu- lation (Mill.)	Farm Per Capita	Nonfarm Per Capita
1910	\$ 4.5	\$	32.1	60.3	\$ 140	\$
1920	8.7		32.0	74.5	272	
1929	7.4		30.6	90.0	242	
1930	5.6		30.5	92.5	184	
1940	8.0	69.6	30.5	110.6	202	685
1950	20.8	199.5	25.1	126.6	829	1575
1951	23.6	227.2	24.2	130.2	975	1745
1952	27.1	243.2	24.3	132.7	951	1833
1953	20.8	288.2	22.7	136.9	916	1886
1954	20.0	258.2	21.9	140.5	913	1838
1955	19.2		22.1	142.9	869	
1956	20.1		22.4		897	
1957	20.2		21.6		933	
1958	22.3		21.4		1043	
1959	20.3		21.2		960	

Table three shows that agricultural income fell steadily from 1951 through 1955. The loss would have been greater from 1951-55 and the gains from 1956-59 would have been less had not the nonagricultural part of the farmers' income risen between 1951 and 1957. Table four breaks

¹⁵ Data for 1910-55 from James Pierce Cavin, ed., Economics for Agriculture, p. 535. This is a book of selected writings of J. D. Black. The 1956-59 data from the Economic Report of the President, 1960, pp. 229 and 234.

farm income into that earned from farm pursuits and that earned in non-farm pursuits.

TABLE 4

NONAGRICULTURAL SHARE OF FARM
PER CAPITA NET INCOME¹⁶

	Farm Per Capita Income		Total
	From farm work	From nonfarm work	
1951	\$751	\$232	\$983
1957	658	309	967

The Heller Committee for research in social economics stated that the average American family needed \$5,464 income after taxes to maintain a "commonly accepted standard of living".¹⁷ If we assume that there are four members for each family, the needed per capita income would be \$1,366. One thousand dollars is not sufficient to provide adequate food, housing, and medical care according to the Heller Committee.

¹⁶ "Myths About Farming," A Statement by the National Association Agriculture Committee, Special Report No. 53, July, 1959, p. 15. It will be noted that the figures in Table two by the National Planning Association differ slightly from the figures cited in Table one from Gavin's collection of Black's writings. These figures reflect only slight arithmetical discrepancies and should not be enough to detract from their value.

¹⁷ "Family Living Costs," America, pp. 265-66.

Yet this is the average per capita income received by farmers. The fact that the nonagricultural income of farmers' is rising is evidence that the farmers' value of productivity is quite often higher in nonagricultural pursuits. This suggests a remedy to lowness of income in agriculture which is discussed below.

Gale Johnson argues that the low income areas of agriculture are largely synonymous with the areas of small farms.¹⁸ Approximately one-fourth of the farms in the United States have an area of less than thirty acres.

TABLE 5
NUMBER OF FARMS BY SIZE IN ACRES, 1950¹⁹

Size of farm	Number of farms	Percentage of total number of farms	Cumulative percentages
Total	5,382,162	100.0	
Under 30 acres	1,338,522	24.9	24.9
30 - 69 acres	1,051,129	19.5	44.4
70 - 179 acres	1,723,476	32.0	76.4
180 - 499 acres	965,409	18.0	94.4
500 acres & over	303,626	5.6	100.0

The value of products sold of approximately one-fourth of the farms

¹⁸ Gale Johnson, "Economics of Agriculture," in A Survey of Contemporary Economics, Vol. II, Bernard F. Haley, ed., p. 225.

¹⁹ Benedict, op.cit., p. 21.

is less than \$400, as shown by table six.

TABLE 6
NUMBER OF FARMS BY VALUE OF
PRODUCTS SOLD, 1949²⁰

Net value of products sold	Number of farms	Percentage of total number of farms	Cumulative percentages
Total	5,382,162	100.0	
\$ 0 - 399	1,345,341	25.0	25.0
400 - 999	836,282	15.6	40.6
1,000 - 2,499	1,098,360	20.4	61.0
2,500 - 5,999	1,106,480	20.6	81.6
6,000 - 9,999	502,445	9.3	90.9
10,000 & over	493,254	9.1	100.0

If Johnson is right, the 25% farming less than 30 acres will be the same farmers that received less than \$400 on the sale of their products.

Based on the classification of farms in the 1945 Sample Census of Agriculture, G. E. Bandom and H. E. Allison estimated that in 1944 the average per capita incomes on 3,244,000 commercial and 102,000 large scale farms had per capita incomes including nonagricultural sources of \$875. These are farms that produce 90% of agricultural output. The same year, the average income of all persons not on farms was \$1,311.²¹

²⁰ Ibid.

²¹ G. E. Bandom and H. E. Allison, "Per Capita Income on

However, a family's budget costs less in the city than on a farm. Nathan Koffshy found that for nearly average income groups, the farm budget cost 27% more in the city than on the farm.²² If farm incomes were adjusted upward 27% to express these differences, they would still be about 20% below nonfarm incomes. Brandom and Allison feel that a part of this difference may be attributed to the smaller proportion of the farm than of the nonfarm population that is in the normal working ages.²³ Later in the paper the condition of unequal distribution of income in agriculture will be discussed. But the farms referred to here are the farms with a high rate of production. The per capita income on these farms is \$179 above the average per capita income in agriculture in 1944.²⁴ But even these large scale farms had at least 20% lower incomes than nonfarm incomes.

Income per worker in agriculture is also only about half of that of income per worker in nonagriculture, as can be seen from the following table.

Commercial Farms," Journal of Farm Economics, May, 1951, XXXIII, pp. 122-23, as cited in D. Gale Johnson, "Economics of Agriculture," in A Survey of Contemporary Economics, Vol. II, Bernard F. Haley, ed., pp. 230-31.

²² Nathan Koffshy, "Farm and Urban Purchasing Power," Conference on Income and Wealth, Studies in Research and Wealth, (New York, 1949), Vol. XI, pp. 153-178, as cited in Johnson, op.cit., pp. 227-28.

²³ Brandom and Allison, loc.cit.

²⁴ Economic Report of the President, 1960, p. 229.

TABLE 7

COMPARISON OF FARM AND NONFARM
INCOMES PER WORKER 1910-1955²⁵

	Farm Incom (Bill.)	Nonfarm Income (Bill.)	Farm Labor Force	Nonfarm Labor Force	Farm Income Per Worker	Nonfarm Income Per Worker
1910	\$ 4.7	\$ 27.8	11,542	25,779	\$ 407	\$1,078
1920	9.0	65.1	11,449	30,985	186	2,101
1929	7.0	78.6	10,480		668	
1930	5.1	69.2	10,101	38,434	505	1,800
1940	5.3	71.3	9,540	46,100	536	1,547
1950	15.5	202.3	7,510	55,592	2,063	3,639
1951	18.0	230.2	7,050	55,830	2,553	4,123
1952	17.0	246.7	6,800	56,191	2,500	4,390
1953	14.8	261.6	6,560	57,293	2,256	4,569
1954	14.3	261.3	6,500	57,964	2,200	4,580
1955	13.2		6,580	58,828	2,006	

In regions where total incomes are low, farm incomes are naturally also low. Over one-half of the farm population in 1941 was in the South. Over one-half of the farm families in the South received less than \$500 of net money income in 1941.²⁶ The income per capita in both agricultural and nonagricultural occupations in the South is lower than any other area in the United States. The following table shows the per capita income for the Southern states compared to the United States average.

²⁵ Cavin, op.cit., p. 533.

²⁶ Schultz, Redirecting Farm Policy, p. 22.

TABLE 8
 PERSONAL PER CAPITA INCOME
 BY STATES, 1957²⁷

Continental U. S.	2,027	Kentucky	1,372
West Virginia	1,554	Tennessee	1,383
North Carolina	1,317	Alabama	1,324
South Carolina	1,980	Mississippi	958
Georgia	1,431	Arkansas	1,151
Florida	1,836	Louisiana	1,566

Low income may very well be an area-wide problem and not a problem peculiar to agriculture. Because over one-half of the farm population is located in the South, this area problem may be particularly manifested in agriculture. But, as noted above, the commercial and large scale farms that produce 90% of agricultural output still had \$436 less net income than did nonagricultural workers.

In addition to low per capita and per worker income, real income in agriculture is also low. The purchasing power of a person's income is more important than its money magnitude. The purchasing power of farmers' net income, according to Author Moore, has fallen sharply since World War II, and in 1955, it was the lowest in fifteen years.²⁸

²⁷ Statistical Abstract of the United States, 1959, p. 311.

²⁸ A statement by Author Moore, in "A New Look at Farm Policy," a Statement by the National Planning Association Agriculture Committee, Special Report No. 40, Jan. 1956, p. 15.

Prices paid by farmers reached an alltime high in 1959, while prices received by farmers in 1959 was about the same as in 1950 but has fluctuated during the period. Table nine compares the prices paid by farmers to the prices received by farmers in various years.

TABLE 9

PRICES RECEIVED BY FARMERS COMPARED TO
THE PRICES PAID BY FARMERS 1929-1959
1910-1914 = 100²⁹

	Prices received by farmers from all products	Costs of all items, interest, taxes, and wage rates	Parity
1929	148	160	92
1930	125	151	83
1940	100	124	81
1950	258	256	101
1951	302	282	101
1952	288	287	100
1953	255	277	92
1954	246	277	89
1955	232	276	84
1956	230	278	83
1957	235	286	82
1958	250	293	85
1959	240	298	80

Real income in agriculture is aided by the fact that a farmer's budget will cost him less on the farm than it would in the city. In the report of

29

Economic Report of the President, 1960, pp. 230-31.

Nathan Koffshy referred to above, it was found that for nearly average income groups, the farm budget cost 27% more in the city than on the farm. Koffshy also compared the real incomes for 1941 of farm operators, including unpaid family workers in units equivalent to a farm operator, to that of factory workers. Farm earnings per worker averaged \$928, while the factory worker's annual wage earnings were \$1,479. Thus the factory worker received 59% more money income than the farm operator and unpaid family workers and presumably paid only 27% more for his budget.³⁰

The fourth method of comparing agricultural and nonagricultural income is to see how agriculture's share of national income compares with its share of the population and working force. The following table shows that agriculture's share of national income has continually been less than its share in the population and working force.

TABLE 10

AGRICULTURE'S SHARE IN THE NATIONAL INCOME MATCHED
AGAINST ITS SHARE IN THE POPULATION, LABOR FORCE,
TANGIBLE ASSETS USED IN PRODUCTION, AND GROSS
AND NET NATIONAL PRODUCT, 1910-1955³¹

Nat. Income (Bill.)	Farm Income (Bill.)	Agriculture's Share (%)					
		Nat. Income	Popu- lation	Labor Force	Pro- ductive Assets	GNP	NNP
1910 \$ 33.3	\$ 4.7	14.1	34.7	31.7	42.3	16.1	18.0

³⁰ Koffshy, loc.cit.

³¹ Cavin, op.cit., p. 531.

TABLE 10 - Continued

	Nat. Income (Bill.)	Farm Income (Bill.)	Agriculture's Share (%)					GNP	NNP
			Nat. Income	Popu- lation	Labor Force	Pro- ductive Assets			
1920	\$ 75.5	\$ 9.0	11.8	30.0	27.0	33.8	14.5	14.0	
1929	87.1	7.0	8.0	25.1	21.2		9.4	9.0	
1930	75.5	5.1	6.8	24.8	20.9	23.9	8.4	8.0	
1940	77.6	5.3	6.8	23.1	17.1	21.3	6.8	6.3	
1950	220.2	15.5	7.0	16.5	11.9	26.0	7.4	6.5	
1951	250.8	18.0	6.2	15.7	11.2		7.5	6.7	
1952	266.2	17.0	5.3	15.5	10.8	26.1	6.7	5.8	
1953	279.0	14.8	5.3	14.2	10.3		5.9	5.0	
1954	278.2	14.3		13.5	10.1	23.0	5.9	5.0	
1955		12.9		13.5	10.1	22.4			

However, equating shares of the labor force to shares of national income is not really a useful method of determining the adequacy of agricultural income. This should be done in terms of social welfare, because unless this is done, the process becomes irrational and arbitrary.³² As pointed out above, insufficient income will be judged in this paper by whether or not it is thought to be enough to secure decent food, clothing, housing and medicine. It is not possible to pick a fixed percentage of national income and state that this is the percentage agriculture should receive under all economic conditions.

The income position of agriculture has not been improving in recent

³²
"Myths About Farming," op.cit., p. 3.

years. Net income per farm, including net change in inventory, dropped from \$2,951 in 1951 to \$2,750 in 1958.³³ The realized net farm income excluding net changes in inventories was \$11 billion, compared with \$13.1 billion in 1958, for a decline of 16%. The 1959 level is approximately the same as the 1957 level which was the lowest since 1942.³⁴

One of the worst features of the agricultural income situation is the fact that agricultural poverty has a tendency to be concentrated in specific areas. The Appalachian plateau and its valleys, parts of the southern coastal plain and the Piedmont plateau, the country lowlands between the Appalachians and the Mississippi, the cutover lands of the Lake States, and the Ozark Plateau are examples of agricultural low income areas. In 1950, in such areas nearly a million farm families had gross receipts of less than \$1,200, and about one-quarter million had less than \$250. In the southern Appalachians, the average net income of all fulltime farmers in 1949 was less than \$500.³⁵ In 1948, there were over 1,700,000 farm families with less than \$1,000 net income. This group amounts to over 6 million farm people.³⁶ In 1950, a million

³³ Economic Report of the President, 1960, op.cit., p. 229. ³⁴ Ibid.

³⁵ John Kenneth Galbraith, The Affluent Society, pp. 324-25.

³⁶ Robert L. Heilbroner, "Who are the American Poor," in Basic Economics, A Book of Readings, Arthur D. Gayer, C. Lowell Harris, and Milton H. Spencer, eds., p. 249.

and one-half farm families principally in the above mentioned areas, had net cash incomes from all sources of less than \$1,000.³⁷

Because of this inequality in income distribution, substantial changes in parity ratios may leave the majority of families with less than subsistence incomes almost unaffected. This fact further limits the usefulness of fair share of the national income and income parity between agriculture and nonagriculture as guides toward improving income distribution.³⁸

The last test of agricultural income is that of the rate of migration into or out of agriculture. It is through a differential in real earnings in a free society, that reallocations of human resources are achieved. Since 1910, 25 million persons on the balance have left agriculture. There is however, a strong crosscurrent of migration; for every three that move away from farms, there have been two moves back.³⁹ Table eleven shows the net migration out of agriculture by decades from 1910 to 1948, and Table twelve shows migration by selected years.

³⁷ Galbraith, op.cit., p. 325. ³⁸ Schickele, op.cit., p. 146.

³⁹ The writer checked the Statistical Abstract of the United States, 1959 for data indicating moves predominantly out of one region and into a different, or if the moves were both out of and back into the same region. The statistics revealed no excess loss from the South. However, the higher than average birth rates in the South may obscure a larger exit in the South than in agricultural areas with lower birth rates.

TABLE 11

NET MIGRATION OUT OF AGRICULTURE,
1910-1948⁴⁰

1910--20	6 million
1920--30	6 million
1930--40	3 million
1940--48	10 million

TABLE 12

NET MIGRATION TO AND FROM FARMS IN
THOUSANDS, IN SELECTED YEARS⁴¹

1929 - 477	1953 - 1,171
1930 - 61	1954 - 91
1940 - 633	1955 - 256
1950 - 1,302	1956 - 2,236
1951 - 271	1957 + 93
1952 - 1,996	

The migration from agriculture seems to show that there is dissatisfaction with agricultural income. The large migrations from agriculture tend to be in the years with the largest governmental farm support programs, suggesting that they are not based solely on the amount of income received. In fact there is almost no correlation between the number of departures and

⁴⁰ Johnson, op.cit., p. 231.

⁴¹ Economic Report of the President, 1960, op.cit., p. 234.

the per capita income in agriculture. The fluctuations do tend to correspond to the amount of unemployment in cities. During the 1930's there were large numbers of unemployed in the cities, and the migration from agriculture was small. During the 1940's, and especially during World War II, there was high employment and there also was a large migration from agriculture. This exit was aided to a large extent of course by the draft. During the recession years of 1954 and 1957 the rate of migration from agriculture was also down again. It appears that people may desire to leave the farms and seek higher incomes in cities, but can move only in the years that there is a large demand for workers in cities.

2. Reasons for low income

It has been shown by several different calculations that average agricultural incomes are extremely low. A farmer with average income does not receive a sufficient amount of income to provide what would be termed decent food, clothing, housing, and medicine. A more alarming fact is that income in agriculture is very unevenly distributed.⁴²

The net migration of 25 million persons out of agriculture since 1910 indicates that not only are many people dissatisfied with the incomes of agriculture, but that they are moving into industry to improve their

⁴²The disparity of the statistics of this paper by the existence of part time farming could not be estimated by any statistics available to the writer.

income position. The task now is to determine why more people do not move out of agriculture. It has been shown that the average incomes in agriculture are not high enough to provide an adequate level of living. It was found that the nonagricultural part of agricultural incomes have been increasing. Thus the people in agriculture do not necessarily suffer from a lack of ability to earn higher incomes. What then are the causes of low incomes in agriculture and why do not more people leave agriculture when faced with this low income?

Schultz suggests that the differences in the level of living among communities were not as great at the time of industrialization as they have become since. He feels that the marked differences in the level of living that have emerged within agriculture are largely the consequences of the increases in per capita income in nonfarm communities, and these differences in living levels are basically consequences of the way in which the economy of the United States has developed and not primarily the result of any original differences in the cultural values or capabilities of the people themselves.⁴³

Schickele cites three factors which he feels go far in explaining the

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T. W. Schultz, "Reflections on Poverty Within Agriculture," Journal of Political Economy, Feb. 1950, pp. 4-5.

income disparities between agriculture and nonagriculture.⁴⁴ The first factor is the development of institutions facilitating a high rate of capital formation and income dispersion, in which farmers cannot participate. These institutions make possible the phenomenal increase in the amount of capital available per worker. The second factor is the relatively well-developed system of educational and health opportunities which are more readily available to city people than farmers. The third factor is the fairly strong short-run price stability and control over terms of trade in the market achieved by industry and not by agriculture. Industrial prices in some industries are administered by industry, and trade is achieved in many fields by monopolistic controls, agreements, custom, and automatic market responses. Probably the most important price stabilizing factor in the short-run is the almost automatic response of the manufacturer to reduce his output when orders drop and increase it when they rise, an operation which farmers do not perform.

A major reason for low agricultural incomes is the lack of capital in agriculture. Farmers' most important needs for production credit require loans for a period of 3 to 5 years since it takes somewhere within that range of time to liquidate the investment of most kinds of capital equipment and facilities. This is the type of credit which is least

⁴⁴ Schickele, op.cit., pp. 137-38.

developed or is not offered at all by private lending agencies. The banking system and other private lending agencies have developed credit arrangements geared primarily to the needs of manufacturing and commerce. The most common instruments have been the 60- or 90-day promissory notes for short-term loans and the nonamortized and often negotiable bond for long-term loans. The result is that there is less capital combined with each unit of labor in agriculture than in most other major industries. This suggests that the marginal productivity of capital is higher, and that of labor lower in agriculture than in the rest of the economy.⁴⁵

The average working capital per farm worker in various regions in 1940 ranged from \$400 in the South Atlantic region to \$1,500 in the Midwest. There is a close correspondence between working capital and value added by farming per farm worker. There is also a striking contrast between the net output per farm worker and the value added by manufacture per employee. On the average the value productivity per factory worker is around three times higher than that per farm worker for the United States as a whole, and four times higher in the South.⁴⁶ Although data was not available on capital per factory worker comparable to those for farm workers, it appears that the main economic reason for the great difference in productivity levels between farm workers in various regions as well as between

⁴⁵ Ibid., pp. 78-79.

⁴⁶ Ibid., pp. 79-80.

farm and factory workers is the low capital per worker in agriculture. It is unfortunate that a set of data for a more recent year was not available.

Credit is not allocated in agriculture according to the returns it could yield but according to the collateral security the borrower can offer. The farmer with much capital can get more the most easily and needs it the least, while the farmer with little capital has much difficulty in getting credit, but needs it the most.⁴⁷ Specific barriers and obstacles to getting capital into agriculture are the absence of corporate finance, the dispersion of management over millions of independent farm units, the instability of farm income flow over time,⁴⁸ excess population, and capital institutions geared to manufacture and commerce.⁴⁹

These data seem to indicate a dilemma. An increase in the availability of capital would lower costs and help the farm proprietor, but it would also create additional excess farm workers and additional output.

The burden of equilibrating the excess resources which are now being used in agriculture but which could have a higher productivity if it could be used in nonagriculture, falls mainly upon the labor force for three reasons. First, according to Schultz, labor is quantitatively the major part, about seven-tenths of resources employed in farming in the

⁴⁷ Ibid.

⁴⁸ Ibid., p. 150.

⁴⁹ Schultz, Agriculture in an Unstable Economy, op.cit., p. 79.

United States. Second, the improvements in farm technology have been largely laborsaving in their effects. Capital resources have become highly productive. In spite of the excess supply of labor in agriculture, according to Schultz, these new types of capital have been increased. Third, labor is more readily transferable than other resources. The rate of disinvestment in agriculture as noted in the previous section is usually very slow.⁵⁰

Why then does not labor in agriculture become unemployed or move to jobs in nonagriculture? The short-run explanation may be found first in the competitive structure of agriculture, and second in its high proportion of fixed costs.

(1) Farmers are small and numerous, and acting alone a farmer cannot affect the price of the products he sells or the factors he buys. He gains nothing through curtailing production by letting part of his farm lie idle, according to Benedict. It is also not feasible for farmers to establish class prices, divert crops to inferior uses, or specify prices to be charged for the product.⁵¹ Production is maintained simply because prices, wages, and profits do not become obstacles to production.⁵²

(2) Production costs on most farms are in large part fixed costs

⁵⁰ Ibid., p. 85.

⁵¹ Benedict, op.cit., p. 23.

⁵² Schultz, Agriculture in an Unstable Economy, op.cit., p. 92.

that go on regardless of the amount the farm produces. What will be called quasi-fixed labor costs are very important. Labor can be withdrawn which fixed costs cannot be, but much of farm labor is composed of the farmer's family who are not as mobile as other factors included in variable costs. Unemployment in the industrial labor market near the farm worker forces him to remain on the farm although nationally there may exist a job for him with higher remuneration than he receives in agriculture. This is due in large part to the universal immobility of labor. Mortgage payments, taxes, and installments on farm equipment are also costs which must be met by the farmer regardless of the prices he receives for his product. Thus the farmer has very little alternative in the short-run but to keep his farm in full production.⁵³

In the long-run, the price mechanism fails to allocate resources (1) between agriculture and the rest of the economy and (2) within agriculture itself. There are several important barriers which hinder the transfer of labor out of agriculture into other branches of the economy which the price mechanism cannot overcome.

Unemployment in the cities was discussed for the short-run and does not differ significantly in the long-run. The cost of movement is often considerable, particularly if the worker has a family. Partly for

⁵³ Ibid., pp. 92-93.

this reason, it is usually the young unmarried people who migrate from farms to cities. Race prejudice is a barrier to movement as many agricultural workers are members of minority groups such as Negroes, Mexicans, and American Indians. Most rural workers have a lack of education and information which is a handicap to finding good urban employment. Labor unions frequently erect barriers to prevent additional workers from entering the better paid city jobs.

The second aspect of the long-run supply question is the poor allocation of resources within agriculture itself. Institutional barriers and rigid middleman costs are the two parts to the problem of allocation within agriculture. In areas where the factors of production are least effectively employed, such as the Southern share-cropping region, it is difficult to shift resources from one line of production to another. Cotton lends itself to the share-cropping system better than would dairy or beef production. Conversion to livestock agriculture requires more capital investment than the tenants have, and the landlord is often unwilling to supply the capital for fear of considerable loss which is possible for an individual because of unforeseen weather conditions, while increased earnings would be achieved by the majority of those who made the shift. The tenant who may know how to grow cotton is apt to know little about the care of a dairy cow. Calves may die or milk production fall from improper care. Finally the landlord's share of cotton can be more easily

determined than could livestock.

Rigid middleman costs is the second part of the problem of allocation within agriculture. When the price of the finished product changes, the price of agricultural raw material moves with an accelerated effect, because of rigid middleman costs. This makes it difficult for the farmer to decide which commodity and which level of output would be the most profitable for his production. Planning production in terms of careful estimates of marginal costs and marginal revenues, as economic textbooks tend to suggest is impossible.⁵⁴ Thus even in the long-run farmers still maintain an excess labor force.

It has now been argued that incomes in agriculture are insufficient when viewed from the standpoint of social welfare. It has further been argued that farmers are unable to rapidly leave agriculture to seek higher incomes in nonagricultural occupations because of certain barriers. This then is the problem of the lowness of agricultural incomes.

D. EXCESS OF AGRICULTURAL PRODUCTION OVER SALES AT CURRENT PRICES

By means of its price support program the government has created a third problem area, that of excess production over demand at current prices.

⁵⁴ Knight, op.cit., pp. 23-26.

It is necessary now to investigate this area and ascertain whether the excess of supply over demand is likely to increase or decrease assuming that government price supports will not change.

In 1956, over \$7 billion worth of farm products was being held in storage by the United States Government. If the government continues its present price support policy, an equilibrium at the established minimum price, will require either an increase in demand or a decrease in supply.

With a set minimum price, the increase in the rate of production matched against the increase in the rate of population growth is very important for equilibrium. Only since the 1940's has the increase of agricultural production exceeded our population growth. Table thirteen compares the relative increases in population and agricultural output. The data showing the relative changes in agricultural exports will be useful in the discussion below on exports and surpluses.

TABLE 13

RELATIVE GROWTH IN AGRICULTURAL OUTPUT,
 U.S. POPULATION, AND AGRICULTURAL
 EXPORTS, 1910-1952. 1910 = 100⁵⁵

Year	Agricultural Output	Population	Agricultural Exports
1910	100	100	100
1920	116	115	138
1929	123	132	108
1930	120	133	100
1940	139	143	32
1945	163	151	122
1950	172	164	118
1951	176	167	141
1952	182	170	104

Both supply and demand will be investigated to identify the significant trends and the outlook for the future. On the supply side, there are three main causes for the increasing rate of production. For simplicity an assumption of constant demand will be made. If production increases it will increase the excess of production over supply.

The first cause is an irreversible supply function of agricultural products. This is a supply function that has more elasticity for increases in demand than for decreases. When demand increases, there is greater change in the quantity supplies per unit of price than there is when the

⁵⁵
 Benedict, op.cit., p. 29.

demand decreases. Under the stimulus of World War II, farmers for the first time since 1910 increased their production growth more than population growth increases. This was desirable for the wartime situation when we had to feed the people of the devastated areas of the world. But after the war's end, the demand schedule for agriculture declined. A large share of this reduction in demand came from the decline in exports after the war. The supply of agricultural products was not reduced to keep pace with the demand, primarily due to the high proportion of fixed costs in the farmers' total cost. Even though prices decline, the farmer does not restrict output much, but tends to continue to produce as long as he covers variable costs. An assured minimum price may keep people on farms and attract new ones, as they gain from high prices and will also be protected from low prices.

Also complicating the situation is the fact that agriculture probably has a backward bending supply curve. With a normal supply curve at a high price per unit many units are produced, and fewer units are produced as the price per unit decreases. For agriculture, an intermediate price may cause the least to be produced, with either an increase or a decrease in price bringing forth higher production. This backward sloping supply curve results from the income effect of an increase in the marginal utility of money. The price of the hours of work has become relatively less expensive as prices fall and the price of money has become more expensive.

In other words, the utility of money is higher than the disutility of a few more hours's work; consequently production is increased despite the lower price.

The second cause of increasing production is the continuing adoption of new technology. The shift from horse and mule to tractor power was one of the main causes of the increased productivity in the 1940's.⁵⁶ Galbraith makes the point that an assured price increases mechanism. Farmers are able to invest in new technology with increased confidence.⁵⁷

There are two differences between agriculture and industry in technology. (1) The basic and applied research in agriculture is not done on the farm. In industry, the corporations are the main developers of new productive processes. In agriculture, however, it is the government that does the main part of the research. The extensive work in this area done at agriculture colleges is a good example.⁵⁸ (2) Farmers must then adopt this new technology or be at a competitive disadvantage. According to Schultz, other farmers will adopt the technology and be able to produce at a lower cost than the farmer who does not adopt the new technology.⁵⁹ The adoption is not necessary for the farmer to avoid losing his share of

⁵⁶ Ibid., p. 30.

⁵⁷ Galbraith, op.cit., p. 114.

⁵⁸ Schultz, Agriculture in an Unstable Economy, op.cit., pp. 74-76.

⁵⁹ Ibid., pp. 76-79.

the market. But seeing his neighbor produce at less cost than he can is a very real stimulus for him to follow suit.

The effect of the adoption of new technology has been the increased output per man hour in agriculture. From 1948 to 1957, product per paid man hour has increased 48.6% in agriculture compared to a 25.5% increase in nonagriculture. The average annual increase in agriculture has been 6% to less than 3% in nonagriculture.⁶⁰

Increasing efficiency, however, does not necessarily cause surplus. Surpluses and shortages are likely to occur when government policy keeps the price mechanism from balancing supply and demand. But increasing efficiency with a price level that encouraged surpluses in the past will stimulate surpluses for the future, with improving technology increasing production.

According to Willys Knight, speaking of long-run supply in agriculture, leaving aside the impact of government controls, it appears that the improved technology will spread and total production of farm products in this country will gradually continue to rise even though agricultural prices were to decline from current levels. He feels the increase would

⁶⁰ With 1947 = 100 the increase in agriculture, nonagriculture and manufacturing was:

	<u>Total</u>	<u>Agriculture</u>	<u>Nonagriculture</u>	<u>Manufacturing</u>
1948	104.2	123.7	101.7	104.6
1957	140.0	183.4	132.6	141.9

Myths About Farming, op.cit., pp. 2 and 4.

come from greater yields per acre, per worker, and per livestock unit.⁶¹

A third cause of the increased rate of supply since 1940, is that of good weather. That weather affects output to a large degree is known even to the most naive city dweller. Weather conditions in the past two decades have generally been favorable to large production.

The result, and the heart of the matter, according to the National Planning Association's Agriculture Committee on National Policy, is that farm production is now tending to expand gradually from year to year independent of changes in price or market demand.⁶² Schultz, in a comment on the report, feels that a statement that production is not strictly price determined would be better than saying that it is independent of price changes.⁶³

What both the Committee and Schultz are referring to is probably the nature of the supply function. Its irreversibility and backward bending nature cause supply to respond differently than it would if it were a normal supply function. This is not independent of market demand and price changes, but has an unusual relationship to them.

Walter W. Wilcox sees output rising in the next few years at least as fast as the population increases for three reasons. (1) Labor leaving

⁶¹ Knight, op.cit., pp. 16-17.

⁶² Schultz, A New Look at Farm Policy, op.cit., p. 12. ⁶³ Ibid.

agriculture may be output increasing because it is often replaced by modern mechanical equipment which increases output. When farm owners sell their land it is often purchased by neighboring farmers to increase the size of their land holdings, after which they can take advantage of increasing returns to scale. Large machinery such as caterpillar tractors and self-propelled combines can then be used, while they are not profitable to use on the smaller holdings. (2) When land is released, it often goes to more efficient producers. The farmers who sell their land and leave are usually the least efficient producers. The more efficient producers are often the ones who purchase the land from their neighbors. With the exit of the less productive farmers and the increased economies of scale, the same land will be producing more than before. (3) It is highly probable that additional capital will be channeled into agriculture by processors and production supply companies as vertical integration in agriculture increases.⁶⁴

From the supply function, we now shift to the demand function of agriculture. The assumption of constant demand is dropped. The task is to see if the demand for agricultural products will increase as fast as the increase of the supply function.

⁶⁴Walter W. Wilcox, "Farm Policy Dilemma," Journal of Farm Economics, Aug. 1958, p. 566.

The first topic under demand, that of exportation of agricultural products, was mentioned during the discussion of the inelasticity of supply. From Table ten, it can be seen that exports have increased but very little over the 1910 level. This is caused first by the fact that the minimum support price established by the government is higher than the world price and the only way the United States can sell on the foreign market is for the government to absorb the difference between the world price and the domestic price. Secondly, foreign countries are making increasing efforts to become self-sufficient in farm products.

Exports to foreign countries do not now provide a means of reconciling the growing disparity between production under present farm programs and prospective domestic demands.⁶⁵

Long-run domestic demand in agriculture depends chiefly on the level of population.⁶⁶ The population, however, was growing at a decreasing rate until 1940. Since then it has increased at a faster rate. This increase was in large part due to World War II. Whether it will continue at this rate or drop again is a matter of dispute among sociologists.

⁶⁵ Raymond Mikesell, Agricultural Surpluses and Export Policy, p. 6.

⁶⁶ Knight, op.cit., p. 14.

TABLE 14
 PERCENTAGE GROWTH OF U.S. POPU-
 LATION BY DECADE⁶⁷

Decade	% Increase in U.S. Population
1870-1880	26.0
1880-1890	25.5
1890-1900	20.7
1900-1910	21.2
1910-1920	16.2
1920-1930	14.8
1930-1940	7.0
1940-1950	12.2
1950-1959	17.2

The per capita income of the United States is increasing steadily. It would seem that the demand for agricultural products would grow. But even as the nation becomes richer, agriculture's markets may not keep pace. Gerhard Tintner found income elasticity of farm products from 1920-43 to be 0.3. Louis Fourt established income elasticity to be about 0.4.⁶⁸ This means that as consumers' income increases, they will spend a smaller percentage of their income on agricultural products. An increased amount is spent on food served in restaurants and clubs. The increased price is

⁶⁷Data for 1870-1945 from Schultz, Agriculture in an Unstable Economy, *op.cit.*, p. 55. Data for 1945-1959 from Economic Report of the President, 1960, p. 129.

⁶⁸Johnson, op.cit., p. 237.

for the services and not a return to agriculture.

Advances in nutrition enlarge the range of satisfaction of available food products, making apparent how better diets may be obtained at less cost. Nutritional advances may make it possible to substitute cheaper nutrients which would have a tendency to further hinder increasing demand for agricultural products.⁶⁹ Evidence of this having happened in the recent past is lacking.

The preceding evidence does cast doubts as to the likelihood that demand for agricultural products will increase as much as will production of these products. J. D. Black and J. T. Bonnen have predicted that the United States' farm output will increase by over 50% between 1955 and 1965, assuming a continuation of the present general program on price supports and production controls. But the predicted consumption, including an allowance for exports equal to the 1953 level, is expected to rise only 17%.⁷⁰

Black and Bonnen have also estimated that the number of acres in crops and head of livestock will have to be reduced by 7% to attain an equilibrium in 1965. For the food grains, the acreage will have to be

⁶⁹ Schultz, Agriculture in an Unstable Economy, pp. 70-74.

⁷⁰ J. D. Black and J. T. Bonnen, A Balanced United States Agriculture in 1965, National Planning Association, Special Report No. 42, April, 1956, p. 27, as cited in Mikesell, op.cit., pp. 5-6.

reduced 5%, and for feed grains 13%.⁷¹

E. CONCLUSION

In this section, the individual aspects of the problems will be listed. This should present an idea of what solutions would help to solve the real problems of agriculture.

The first problem area, that of instability of agricultural income was caused by both the supply and the demand functions. On the demand side there are many risks and uncertainties of production. These risks and uncertainties do not seem to be limited to regions or to the size of the farming unit.

The supply function of agricultural products causes agricultural response to changes in demand to be slow. Farmers support output instead of price. The economy as a whole gains however in that it receives a large supply of goods at low prices. It would probably be a mistake to cause agriculture to cut its output during a depression.

The demand for agricultural products depends on nonagricultural

⁷¹ Black and Bonnen, op.cit., as cited in W. E. Hamilton, A Current Look at the Farmer's Percentage of the Consumer's Food Dollar, National Planning Association, Special Report No. 55, Nov. 1959, p. 6. Unfortunately the original source was not available to the writer. No other information as to when, where and how the data were collected was cited in the above sources.

incomes. During a business cycle, agricultural incomes move further in both directions than do nonagricultural incomes. In depressions, many nonagricultural workers move into agriculture causing the much reduced income to be paid to more workers.

It was shown by several different methods that incomes in agriculture are lower than incomes in nonagriculture. It was argued that the income received by the average farmer is not sufficient to provide adequate food, clothing, shelter, and medical coverage.

It was shown that there was unequal income distribution within agriculture. The extreme low incomes in agriculture come from the small farms. The main region of low incomes and small farms is in the South and Southeast. The lack of capital which keeps agricultural income low is also most prevalent in the South. Agriculture needs a better method of obtaining capital than it now has.

All incomes in the South are low. Domestic demand depends both on the level of population and the income of the population. The South is low in both these respects. It may be that agricultural incomes in the South will continue until the South becomes industrialized. In any event a policy to increase agricultural income will have to be most effective in the South.

In the short-run the competitive structure of agriculture and the high proportion of fixed costs keep farmers from becoming unemployed or

moving out of agriculture. In the long-run, the price mechanism, first of all, does not allocate resources between agriculture and the rest of the economy because of certain barriers. These barriers are unemployment in the cities, high cost of movement, race prejudice, lack of education and information, and labor union policies. Second, the price mechanism fails to allocate resources within agriculture. Institutional barriers, caused in part by the drastic effects that adverse weather may have on any one farmer, and rigid middleman costs are the barriers that must be overcome if effective allocation of resources within agriculture is to take place.

The excess of supply over demand is not an inherent problem of agriculture. With no governmental price supports, the amount supplied will be the amount demanded at the equilibrium price.

Agriculture is achieving greater yields per acre, per worker, and per livestock unit. This increased efficiency should not be penalized or prevented. New technology which could be efficiently used in agriculture should not be barred from it.

Exports are not now an effective demand for agricultural production. The United States stores surpluses while people in foreign lands starve. Granted that there are many problems beyond the scope of this paper involved with exporting agricultural products, but it seems that improvements in this area could be made.

These are the basic problems of agriculture. Any economic proposals designed to benefit agriculture must be aimed at solving these basic problems.

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