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THE CONTRIBUTION OF
FARM PRICE SUPPORT PROGRAMS TO
GENERAL ECONOMIC STABILITY

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Ever since 1929, price support activities have been a central element in the farm program. From decade to decade, research, technology, and education may be more fundamental to the improvement of agriculture and rural life. But from year to year, price support has been the major, and at times the most controversial, expression of public policy in the field of agriculture.

In framing price support legislation, Congress probably has been most influenced by considerations of prospective benefits to farmers relative to prospective costs to the federal Treasury. The interests of processors, distributors, and consumers have, of course, been given some weight, as have problems of reconciling farm policy with policy in other fields such as labor, social security, and international trade. The central issues in legislative debate are the *level* of price support, the *commodities* for which price support is to be mandatory rather than permissive, and the *methods* by which the farm price level objectives are to be attained.

From a practical standpoint, then, price support programs are chosen largely on the basis of their effects on the level and stability of particular *farm prices*. Effects on *farm income* are less clearly recognized. However, as the domestic demand for most farm products is less than unit elastic, a program which increases farm prices will generally increase farm income during at least the first few years of its operation. The effects of farm price supports on *general economic stability* have not been spelled out clearly even in the technical literature, and considerations of these effects have not thus far entered in a major way into the selection of alternative farm programs.[1]

The views expressed in this paper are the author's. They are not official findings of the agency by which he is employed.

[1] It is probably true that many legislators have been influenced by an intuitive feeling that stabilizing prices of farm products must somehow contribute to stability in the economy as a whole. Allegations that depressions are farm-fed and farm-led, or that an increase of one dollar in farm income causes an increase of seven dollars in national income, are frequently made in connection with price

This paper attempts to analyze the effects of a farm price support program as one of a number of built-in safeguards against depression. The paper includes, first, a discussion of the place of agriculture in the general economy; second, a detailed examination of the workings of the existing price support program during a hypothetical recession; and third, a brief consideration of the behavior of alternative price support programs in a similar recession and the differences, if any, in their contributions to general economic stability.

1. The Place of Agriculture in the General Economy

The relative importance of agriculture in the general economy determines, of course, how far any farm price support program can affect economic stability. Agriculture is important not only for its sheer economic size but also for its dynamic interrelationships with other parts of the economy.

ECONOMIC SIZE

In 1952 the gross national product for the United States economy as a whole was estimated at $348 billion. A comparable measure for the farm economy itself—the so-called "gross farm product"— in the same year was $23.5 billion, or slightly less than 7 per cent of total GNP. In the same year, employment in agriculture averaged about 6.8 million workers, equivalent to 11 per cent of the employed labor force. However, average income per worker was lower in agriculture than in other sectors of the economy.

Several alternative measures of the economic size of agriculture could be used, but they would give results somewhere between the two just mentioned. Of these possible measures, the series on cash receipts from farm marketings will frequently be used in this paper as a convenient but rough measure of the size of agriculture. In 1952, cash receipts from farm marketings were $32.4 billion, equivalent to 9 per cent of GNP. This concept is, however, "grosser" than that of GNP.

CROSS-SECTION INTERRELATIONSHIPS

Major sources of cash farm income in the United States in 1947 are shown in Table 1. Each *source* of cash receipts is the *destination* of a flow of goods moving off the farm. Impacts resulting from changes in demand for farm products and their derivatives are

support arguments, but it is not clear that they carry much weight in the final legislative decisions.

transmitted to the farm economy in the form of changes in the volume of these money flows and the prices and volumes of sales associated with them. Because of the existence of some special data for the year 1947, a number of these interrelationships will be discussed in terms of that year.[2] The general picture would be much the same in 1952 and other recent years.

TABLE 1

Sources of Cash Farm Income, United States, 1947

| | CASH FARM INCOME [a] | |
| | Amount (billions of | Percentage |
SOURCE	dollars)	of Total
Total cash receipts from farm marketings	$29.75	100.0%
Sales for food use by domestic civilians	18.23	61.3
Food use by armed forces	.50	1.7
Nonfood products and by-products for domestic use	5.22	17.6
Interfarm sales	2.66	8.9
Exports and shipments	2.87	9.6
Balancing item [b]	.27	.9

[a] Equivalent farm values of commodity flows.

[b] Includes changes in nonfarm stocks, statistical discrepancies, and rounding errors.

In 1947, nearly 10 per cent of total farm cash receipts represented commodities exported to foreign countries, plus a more limited movement to United States territories. Another sizable flow, nearly 9 per cent, was derived from sales to other farmers. Most of these sales were mediated by the marketing system. Available data report only such sales of *livestock* as moved across state lines. About half of the value of "interfarm sales" represents the receipts of original producers from *feed grains and hay* purchased, directly or ultimately, by other farmers. Much of this feed was processed by the mixed feed and milling industries, and the price paid for end products by purchasing farmers averaged roughly twice that received for the raw products by original producers.

Over 60 per cent of the cash receipts in 1947 were derived from sales for food use by the domestic civilian population. About 1.7

[2] The 1947 data cited were prepared in the former Bureau of Agricultural Economics in connection with the Interindustry Relations Study of the Bureau of Labor Statistics. In the following tables these data have been rearranged to conform with certain regularly published series of the Agricultural Marketing Service (see Karl A. Fox and Harry C. Norcross, "Some Relationships between Agriculture and the General Economy," *Agricultural Economics Research,* January 1952, pp. 13–21).

per cent represented food use by the armed forces. Another 17.6 per cent were derived from sales of nonfood products and by-products for domestic use, including cotton, tobacco, and portions of various other commodities.

Table 2 shows a breakdown of these major sources of cash farm income among nine major commodity groups. It will be noted that the great bulk of cash receipts from meat animals, dairy products, poultry and eggs, and fruits and vegetables is derived from sales for food use by the domestic population. Exports and shipments are small for these commodities. Interfarm sales of meat animals, primarily feeder and stocker cattle, are fairly large ($1.2 billion), but prices and values of feeder cattle move up and down with the demand for meat animals for food use. A sizable proportion of the cash income from food grains (mainly wheat), cotton, and tobacco comes from the export market. Hence, in the absence of price supports, prices of these products are subject to impacts from all parts of the world economy.

Farm price support programs contribute to economic stability mainly by offsetting or diverting the impacts upon farm income of changes in the demand for farm products. Table 3 reflects the fact that changes in domestic consumer demand for food products must be transmitted through the distributing, processing, and transportation industries before being translated into impacts upon farm income. In 1947, a year of extreme inflation, the farmer's share of the consumer's food dollar (valued at retail store prices) was at a near-record level of 53 per cent. Marketing charges, in the broadest sense, absorbed less than 40 per cent of the consumer's dollar spent for meat, poultry, and eggs, and about 45 per cent of the consumer's dollar spent for dairy products. The marketing system absorbed almost 60 per cent of the consumer expenditures for fruits and vegetables and more than two-thirds of the consumer expenditures for cereal and bakery products. The farm value of the *grain* used in bakery and cereal products was little more than 20 per cent as large as the amount spent for such products by consumers.

While similar breakdowns are not available for cotton, wool, and tobacco products, the farmer's share of the retail dollar spent for these items ranged from 12 to 17 per cent. The marketing margin concept is hardly appropriate for cotton used in industrial fabrics, such as tire cord, bagging, and conveyor belts.

Marketing margins are notoriously rigid. Freight rates are changed only at considerable intervals. Processing costs include many utilities and materials whose prices are quite rigid. More

TABLE 2

Sources of Cash Farm Income by Commodity Groups, United States, 1947 [a]

(billions of dollars)

	Meat Animals	Dairy Products	Poultry and Eggs	Fruits and Vegetables	Food Grains	Feed Grains and Hay	Cotton and Cotton- seed	Tobacco	Miscel- laneous	All Commodi- ties
Sales for food use by domestic civilians	7.18	3.80	2.64	2.56	1.00	.22	.19	—	.64	18.23
Plus:										
Food use by armed forces	.24	.06	.05	.11	.04	—	—	—	—	.50
Nonfood products and by-products for domestic use	.40	.01	.09	—	.39	.80	1.60	.68	1.27	5.22
Exports and shipments	.13	.18	.14	.23	1.07	.34	.43	.24	.11	2.87
Interfarm sales	1.20	—	—	—	.15	1.07	—	—	.24	2.66
Balancing item	.19	—	.01	-.10	.12	-.10	.02	.11	—	.27
Equals: Cash receipts from farm marketings	9.34	4.05	2.93	2.80	2.77	2.33	2.24	1.03	2.26	29.75

[a] Figures are equivalent farm values of the respective commodity flows.

TABLE 3

Retail Value, Marketing Charges, and Equivalent Farm Value of Food Products, by Commodity Groups, United States, 1947 [a]

(billions of dollars)

	Meat Animals	Dairy Products	Poultry and Eggs	Fruits and Vegetables	Food Grains	Feed Grains and Hay	Cotton and Cottonseed	Tobacco	Miscellaneous	Commodities
Retail value of farm food products	11.14	6.30	3.75	6.15	4.52 [b]				2.32 [c, d]	34.18 [d]
Less: Food marketing changes	4.02	2.59	1.19	3.63	3.04				1.46	15.93
Trade	2.28	1.73	.93	2.19	1.12				.59	8.84
Transportation (intercity)	.40	.10	.10	.90	.20				.13	1.83
Processing	1.34	.76	.16	.54	1.72				.74	5.26
Equals: Equivalent farm value	7.12	3.70	2.56	2.52	1.49				.84 [c]	18.23

Nonfoods: "Farmer's share" on retail cotton, wool, and tobacco products averaged 12 to 17 per cent. Margin concept inappropriate for industrial fabrics and feed crops.

[a] Figures in this table apply to products sold from United States farms and purchased for food use by United States consumers. The equivalent farm value of this commodity flow in 1947 accounted for 61.3 per cent of total cash receipts from farm marketings.

[b] Bakery and cereal products. Farm value includes value of other bakery-product ingredients as well as value of flour, corn meal, etc.

[c] Food only. Includes some cottonseed oil products and corn products (wet process) in addition to products classified as "miscellaneous" in Table 2.

[d] Includes $.02 billion of marketing taxes, mainly on oleomargarine and sugar.

than 50 per cent of the total food marketing bill is required to cover costs of labor directly involved in transportation, distribution, and processing activities. The wage rates of these workers are largely determined in a labor market which extends over the whole range of industrial and service occupations. Thus food marketing charges are only slightly affected by changes in either the retail or the farm price of food products. If prices and wage rates in other parts of the economy are rigid, any sudden drop in retail prices of food is transmitted (in the absence of price supports) almost dollar for dollar to the farm level.[8]

Farmers buy from as well as sell to the rest of the economy. Table 4 shows a breakdown of cash production expenditures, plus depreciation allowances, for the year 1947. Production expenditures in that year totaled $17.2 billion. Of this, $1.4 billion went for livestock moving across state lines and involving only transportation and related services in addition to the prices received by other farmers in the state of origin. Farmers spent $3.7 billion for feed, of which roughly $2.0 billion was reflected back to other farmers and $1.7 billion distributed among marketing agencies. Over $2.8 billion was spent on hired labor. Operation of motor vehicles cost $1.6 billion and miscellaneous goods and services used in farm production $2.5 billion. Taxes, interest, and net rent claimed another $2.6 billion, and the allowance for depreciation on farm buildings and equipment was also $2.6 billion. Actual cash outlays for building and equipment may, of course, differ substantially from the depreciation allowance in any one year.

As in the case of marketing margins, production expenditures are relatively inflexible. The *quantities* purchased of many of these items are dictated by technological requirements—so many units of gasoline or hours of machine use are necessary to handle an acre of a given crop, and the individual farmer has nothing to gain

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[8] The moderate degree of correlation which exists between changes in retail food prices and in food marketing margins is due primarily to the common effect of general economic activity upon wage rates, upon costs and prices of manufactured items, and upon consumer demand for food as expressed in terms of retail prices and consumption. If consumer income and employment were held constant at a stable general price level, a decline in retail food prices, presumably caused by an increase in food supplies, would likely be transmitted almost dollar for dollar to the farm level. This implies percentage changes in farm prices from 1½ to 2 or more times as large as changes at retail, varying by commodity. If the quantity of a farm product available or its rate of production remains fixed, the net effect of a change in consumer demand is a change in its farm price with no immediate change in consumption. However, if the commodity is backed by an effective price support program, much of the impact of a decline in consumer demand is transmitted into stock accumulations by the price support agency.

TABLE 4

Gross and Net Farm Income and Production Expenditures, by Commodity Groups, United States, 1947

(*billions of dollars*)

	Meat Animals	Dairy Products	Poultry and Eggs	Fruits and Vegetables	Food Grains	Feed Grains and Hay	Cotton and Cotton-seed	Tobacco	Miscel-laneous	All Commodi-ties
Cash receipts from farm marketings [a]	9.34	4.05	2.93	2.80	2.77	2.33	2.24	1.03	2.26	29.75
Plus:										
Farm-home consumption	.72	.79	.48	.85	.01	.03	—	—	.22	3.10
Rental value of farm dwellings	.20	.24	.09	.11	.11	.10	.17	.08	.08	1.18
Equals: Gross farm income [b]	10.26	5.08	3.50	3.76	2.89	2.46	2.41	1.11	2.56	34.03
Less: Production expenditures [c]	4.19	3.05	2.48	1.91	1.23	.81	1.09	.39	2.08	17.23
Purchased livestock	1.20	—	.22	—	—	—	—	—	—	1.42
Purchased feed	.92	1.00	1.47	—	—	—	—	—	.30	3.69
Hired labor	.40	.49	.08	.85	.13	.14	.37	.09	.30	2.85
Operation of motor vehicles	.28	.24	.11	.16	.23	.15	.11	.02	.27	1.57
Misc. goods and services	.29	.35	.18	.54	.19	.15	.21	.07	.53	2.51
Taxes, interest, net rent	.68	.40	.24	.16	.34	.20	.21	.07	.28	2.58
Depreciation	.42	.57	.18	.20	.34	.17	.19	.14	.40	2.61
Equals: Realized net income of farm operators [b], [d]	6.07	2.03	1.02	1.85	1.66	1.63	1.32	.72	.48	16.80

[a] Same as bottom line of Table 2.
[b] Excluding government payments.
[c] Cash expenditures for current operations, plus allowance for depreciation.
[d] Calculated as gross farm income minus production expenditures. Implicitly, realized net income includes all returns for the labor of farm operators and unpaid family workers, as well as for management and investment.

by curtailing his total acreage. Quantities of fertilizer may be cut back, but this will jeopardize output. The individual's taxes, interest, and rental payments are beyond his control and are relatively rigid over a period of two or three years. Prices of petroleum products, steel-using items, and other industrial products used by farmers are determined in a nationwide market so far as demand factors are concerned, and the individual prices are often administered by manufacturers. Due to locational factors, wage rates of hired farm labor are sympathetic to changes in farm prices, but only partly so. In many areas, nonfarm work is readily available, and the farmer-employer must compete with industrial wage rates.

Over a period of years the index of prices paid by farmers (including interest, taxes, and farm wage rates) has fluctuated from year to year only half as much percentagewise as has the index of prices received for commodities sold by farmers. A significant fraction of the movement shown by the prices-paid index is due to variations in the prices of livestock and feed purchased by farmers.

Farmers also buy consumers' goods from other sectors of the economy. Data on expenditures for farm family living on a nationally representative basis are limited. However, in most essential respects farmers' demands for nonfarm consumers' goods are similar to those of other consumers. A notable exception is the smaller proportion of net farm income going for purchased food; another is the relatively low imputed rental value of farm dwellings (cash rents for the farm dwelling as such are rare). Incidentally, the evaluation of food produced for farm-home use and imputed rents of farm dwellings is a major area of controversy in comparing the real incomes of farm and nonfarm people, or defining "parity income." The official evaluations of these items for the year 1947 are given in Table 4.

Parenthetically, it should be noted that farm price supports operate at the cash receipts or gross income level. As net farm income averages less than half as large as gross, a 10 per cent drop in the price of a farm product may mean a 20 per cent drop in the *net* income received from a given volume of output. Net farm income, as defined in Table 4, includes all returns for the labor of farm operators and unpaid family workers as well as for the operator's investment and his management function. Hence, in terms of income available for family living, a 10 per cent change in farm prices may be as serious for many farm families as a 15 or 20 per cent change in wage rates would be for industrial workers.

Farm income and employment vary widely in the various regions

of the country. Table 5 shows that in 1952, in the New England and Middle East group of states, agricultural income payments accounted for less than 2 per cent of total income payments. The Southeast is a major farming region, but agriculture accounted for only 11.5 per cent of its total income payments. The percentage was almost the same in the Southwest, including the important agricultural states of Texas and Oklahoma.

TABLE 5

Agricultural and Total Income Payments, by Regions, United States, 1952

(*dollars in millions*)

	Total Income Payments	*Agricultural Income Payments* [a]	*Agricultural Income Payments as Per Cent of Total*
New England	$ 16,635	$ 266	1.6%
Middle East	68,873	1,033	1.5
Southeast	36,160	4,158	11.5
Southwest	17,049	1,944	11.4
Central	72,997	5,183	7.1
Northwest	12,873	2,613	20.3
Far West	30,780	1,970	6.4
United States	$255,367	$17,167	6.7%

[a] Computed from columns 1 and 3.
Source: Compiled from *Survey of Current Business,* Dept. of Commerce, August 1953, pp. 9 and 12.

The Central region, including most of the Corn Belt and the Lake States, is an important and relatively prosperous farming area. However, in view of the great manufacturing and trading centers in the region, agriculture accounted for only 7.1 per cent of its total income payments. The Northwest region, including the Northern Great Plains and some of the Mountain States, shows the highest proportion of agricultural to total income payments among the regions listed—20.3 per cent. This region contains only a few large cities and industrial centers. The Far West shows about the same relation between agricultural and total income payments (6.4 per cent in 1952) as does the nation as a whole (6.7 per cent in 1952).

Except for the Northwest region, these figures suggest that the immediate impact of changes in farm income upon other sectors of the economy would be rather small. However, there are individual states for which the farm income percentages run much higher: Arkansas 22, Mississippi 24, Arizona 18, Iowa 28, Idaho and Kansas

each 22, Montana 21, Nebraska 27, North Dakota 26, South Dakota 31. The last six states mentioned are all in the Northwest region.

Table 6 compares farm and nonfarm labor forces for the year 1950 by major regions. Because per worker incomes are lower in agriculture than for the average of nonfarm occupations, the percentage of the total labor force engaged in agriculture is higher in each region than the corresponding percentage of income payments going to agriculture. The greatest disparity is in the South,

TABLE 6

Experienced Civilian Labor Force, Total and Agricultural, by Regions, United States, 1950

	Experienced Civilian Labor Force	*Farmers and Farm Workers*	*Farm Labor Force as Per Cent of Total*
Northeast	15,446,331	481,467	3%
North Central	17,220,229	2,330,518	14
South	16,494,500	3,184,278	19
West	17,064,280	709,784	10
United States	56,225,330	6,706,047	11%

Source: Compiled from *Census of Population, 1950*, Bureau of the Census.

which in 1950 included nearly 50 per cent of the farm labor force of the nation but received about 40 per cent of the nation's agricultural income payments.

A drop in farm income in an area directly affects the townspeople in that area who sell goods and services to farm people. The impact of reduced purchasing power in the area is then diffused among the larger distributing and manufacturing centers from which the various goods used in the area are supplied. The effects of a highly localized drought or flood upon farm incomes might cause scarcely a ripple in the big wholesaling and manufacturing centers. A substantial drop in the price of wheat, on the other hand, could reduce the incomes of farmers in a few neighboring states by $200 or 300 million. Such a drop would cause an appreciable reduction (as much as 5 per cent) in *total* income payments in a several-state area. While additional income effects would radiate into other regions, their percentage impacts would be small.

DYNAMIC INTERRELATIONSHIPS

In the preceding section we have described some major cross-section relations between agriculture and the rest of the economy.

CHART 1

Basic Economic Relationships Affecting Agriculture
(billions of dollars)

Gross national product vs. Nonconsumption expenditures[a]

Regression fitted
1929–1941, 1947–1951

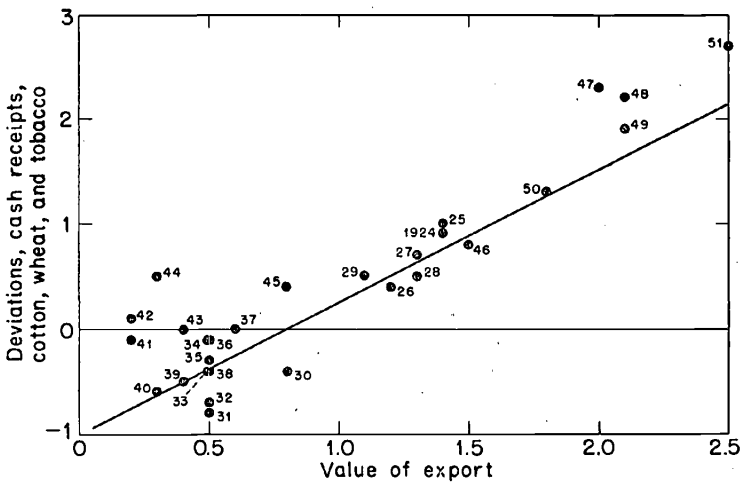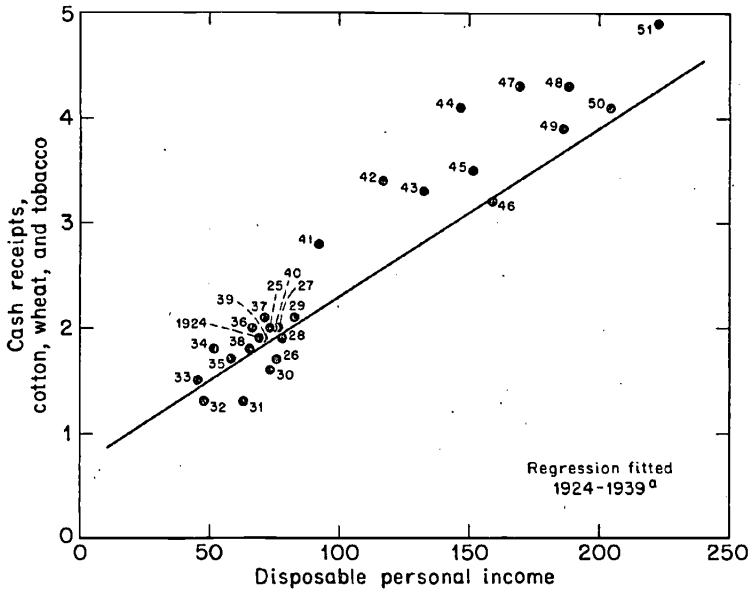Personal income[b] vs. Gross national product

Regression fitted
1929–1941
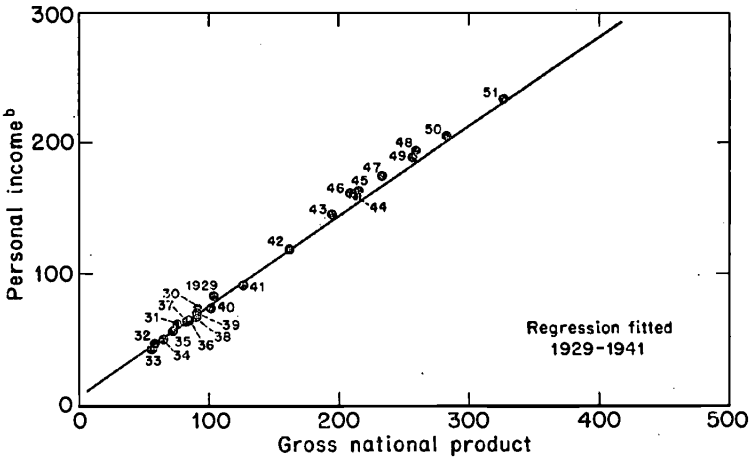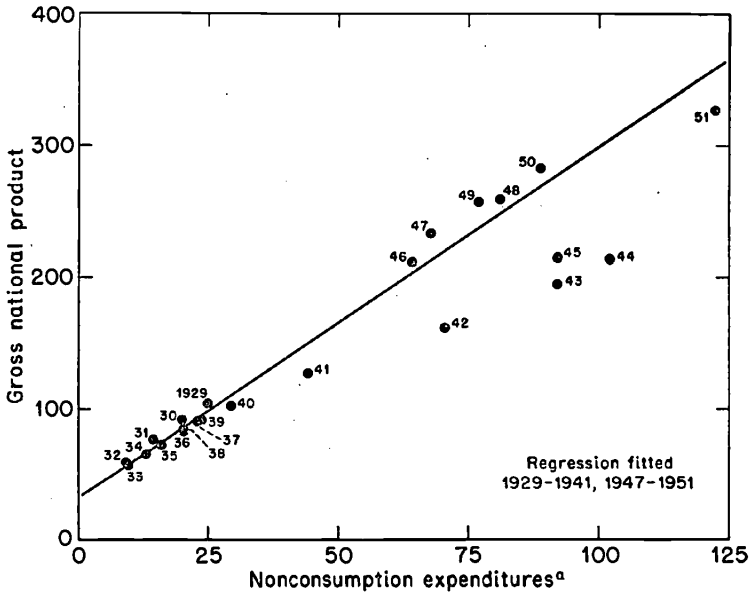
[a] Nonconsumption expenditures equals gross national product less personal consumption expenditures.

[b] Personal income adjusted equals personal income less government and business transfer payments and government interest payments.
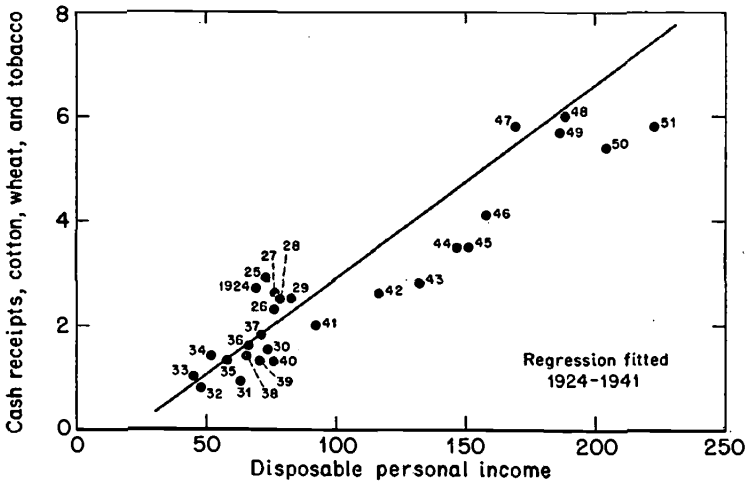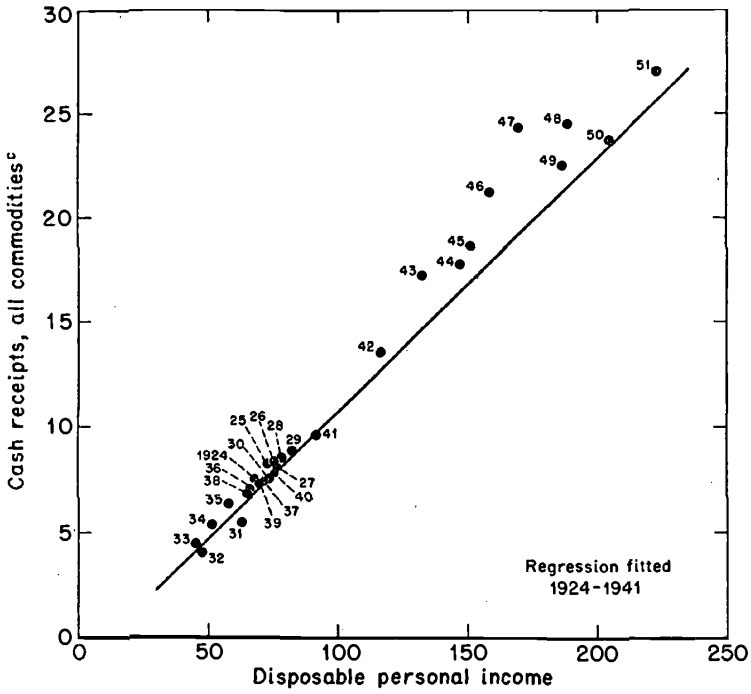
c Excluding cotton, wheat, and tobacco.
Source: U. S. Department of Agriculture.

CHART 2

Farm Receipts in Relation to Selected Variables
(billions of dollars)

(billions of dollars)

Cash receipts, farm marketings (y-axis, 0 to 40)

Farm marketings X index, prices received (1935-39=100) (x-axis, 0 to 500)

Regression fitted
1929-1948

Data points labeled: 51, 48, 47, 50, 49, 46, 44, 45, 43, 42, 41, 1929, 30, 36, 37, 40, 35, 39, 33, 31, 38, 32, 34

Net income of farm operators (y-axis, 0 to 20)

Cash receipts, farm marketings (x-axis, 0 to 50)

Regression fitted
1921-1941

Data points labeled: 47, 48, 51, 46, 49, 50, 45, 43, 44, 42, 25, 26, 29, 27, 28, 37, 41, 36, 24, 38, 35, 23, 34, 40, 30, 33, 39, 22, 32, 31, 1921
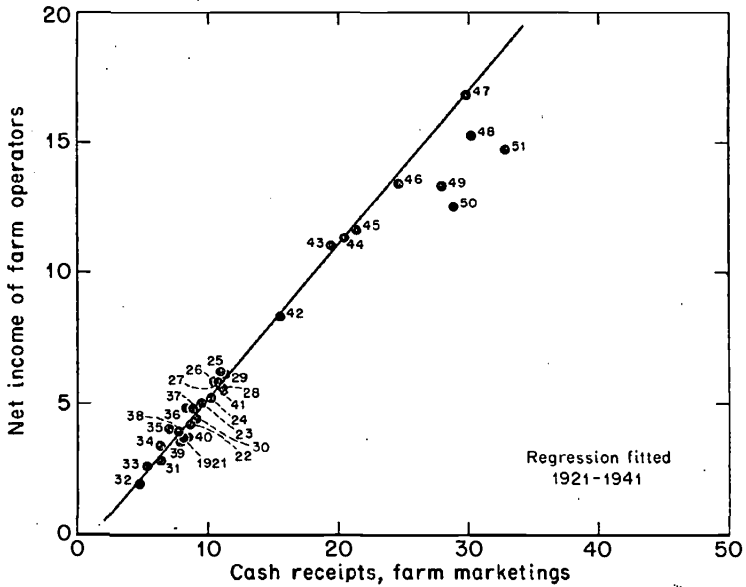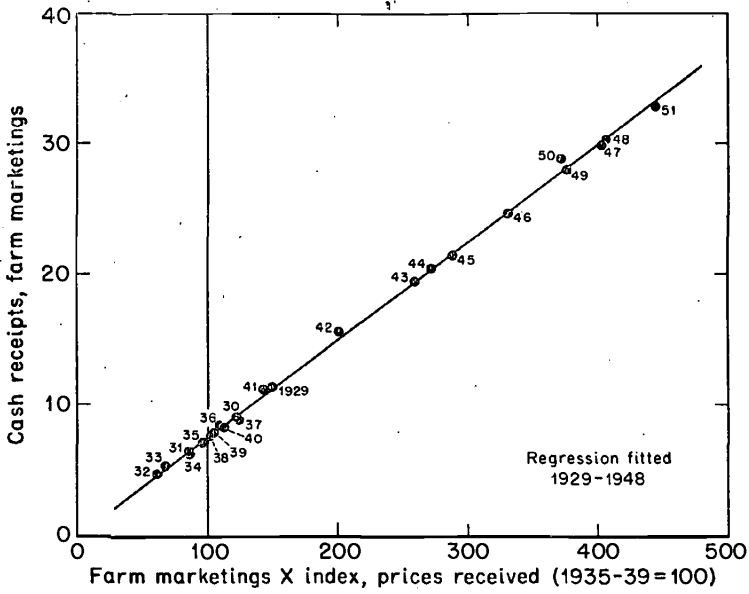
Source: U. S. Department of Agriculture.

Each element of marketing charges and cash costs of production is a channel through which influences originating primarily in the nonfarm economy may be transmitted into the net income statements of farm operators. The tables showing commodity flows out of agriculture to different end uses give some indication of the vulnerability of particular farm prices to changes in the various categories of final demand.

While the diversity of conditions within agriculture generally forces us to frame price support programs in terms of individual commodities, there are certain dynamic interrelationships between agriculture and the rest of the economy which can profitably be discussed on an aggregative level.

Aggregative Relationships. Some important relationships are suggested in Charts 1 and 2.[4] If we disregard the three major export crops—cotton, wheat, and tobacco—cash farm income from all other commodities bears a close relationship to disposable personal income.

If we are tracing the impact of changed conditions upon a single farm commodity, we may generally regard changes in domestic and foreign demand as determined outside the agricultural economy. But if we add up such impacts for all (or a large number of) farm products, we find that the individual commodity models are, for some purposes, incomplete. For example, during 1922–1941 a year-to-year change of $10 billion in United States disposable income was associated with an average change of more than $1 billion in cash receipts from farm marketings. But production expenditures also tended to increase with cash receipts. For each $1 billion change in cash receipts from one year to the next, farm purchases of livestock and feed tended to change by more than $100 million and the farm wage bill changed an average of $80 million. Farm wages were influenced by the prevailing level of nonfarm wage rates and the ease with which nonfarm employment could be obtained.

To some extent, the above relations are internal to the farm economy. But cash outlays for other production requisites, including net investment in farm buildings and equipment, changed about $300 million in association with year-to-year changes of $1 billion in cash receipts. This association may be regarded in large part as a "back effect" of farm income upon the nonfarm economy.

[4] These charts are reproduced from James P. Cavin, "Forecasting the Demand for Agricultural Products," *Agricultural Economics Research,* July 1952, pp. 65–76.

As an average during 1922–1941, the realized net income of farm operators rose nearly $700 million in response to a year-to-year increase of $1 billion in cash receipts from marketings.[5] Of this, over $100 million represented net new investment in farm buildings and equipment, an item mentioned in the preceding paragraph. The remainder also had a back effect on the nonfarm economy through increased expenditures on goods and services for family living.

Hence if we try to trace the ultimate effects of an initial decrease in consumer income, we are led through a series of approximations. The "first round" decrease in farm cash receipts leads to a secondary decrease in nonfarm income (perhaps no more than 10 per cent of the initial one). This leads to a secondary decrease in farm income, which produces a third-order effect on nonfarm income (perhaps no more than 1 per cent of the initial decrease).

But we must also consider another stream of influences. The bulk of the initial contraction in consumer income means reduced outlays for nonfarm goods and services. This curtailment leads to a decrease in nonfarm employment and income, which reinforces the original one and leads to a further (but smaller) contraction in expenditures. If, for example, a cut in defense spending and private investment reduced the rate of income payments *directly* by $10 billion, the final decrease in the level of consumer income might be around $20 billion.[6] If so, farm cash receipts would tend to decrease by twice the amount suggested by the initial impact, rather than by 1.11 times that amount as suggested by considering back effects through farm income only.

If the "multiplier" at a given time were about 2, one might expect that the effect of a price support program in maintaining total national income would be about twice as large as the government outlay for price support. Of the total income-supporting effect, a little more than half would accrue to farmers (at the cash receipts level) and a little less than half would accrue to nonfarmers. If

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[5] The sum of net income and production expenditures (including depreciation allowances) is equal to gross farm income. Gross income is larger than cash receipts by the imputed rental value of farm dwellings and the value of home-grown products consumed by the farm family. The latter value changes directly with cash receipts, because the price components of the two series are quite similar. As a result, gross farm income during 1922–1941 changed about $1.1 billion per $1 billion change in cash receipts. Production expenditures (including depreciation allowances) accounted for a little more than $400 million and net income for a little less than $700 million of the change in gross farm income.

[6] Magnitude based on Arthur Smithies, "The Multiplier," *American Economic Review*, May 1948, pp. 299–305.

the multiplier were 2.5, the total effect would be 2.5 times the price support outlay, divided about equally between farm and non-farm people.

Demand and Supply Relationships for Individual Commodities: An aggregative relationship which has been useful in the outlook work of the Department of Agriculture is as follows:

log (prices received by farmers) = 2.812

—1.658 log (physical volume of farm marketings)
(.273)

+1.241 log (disposable income)
(.102)

+.142 log (value of agricultural exports).
(.035)

The figures in parentheses are standard errors. During the period 1924–1947, 97 per cent of the variation in the index of prices received by farmers was associated with the three explanatory variables shown. The relevance of this relationship to a discussion of farm price supports may be suggested as follows:

1. A 10 per cent drop in disposable income leads to a 12.4 per cent drop in farm prices, other factors remaining constant.

This price drop could be offset by a reduction of 7.5 per cent (equal to 12.4/1.66) in the volume of farm marketings. Or, if all prices were rigidly supported at their initial levels, the price support agency would acquire 7.5 per cent of the total quantity of farm products marketed.

2. An increase of 10 per cent in the physical volume of farm marketings would tend to reduce farm prices about 16.6 per cent. Or, if prices were rigidly maintained, the entire increase in farm marketings would be acquired by the price support agency.

3. A decline of 10 per cent in the value of agricultural exports would tend to reduce the average level of farm prices by 1.4 per cent. Or, if prices were rigidly maintained, about .9 per cent (1.4/1.66) of total farm marketings would be acquired by the price support agency.

Relationships of this sort also figure prominently in the analysis of price support programs for individual commodities. Chart 3 shows a simple demand and supply structure roughly applicable to certain crops, including potatoes. In this structure, it is assumed that the crop has already been planted and production is either

fully determined and ready for market or is subject to further influence only by noneconomic factors such as weather. With minor qualifications, the entire production of the crop is moved through the marketing system to the retail store (and restaurant) level. The main determinants of retail price for such a commodity, based on statistical and economic evidence, are the supply available for consumption and the disposable income of consumers. Marketing mar-

CHART 3

Demand and Supply Structure for Perishable Crops
(supply predetermined; single market)
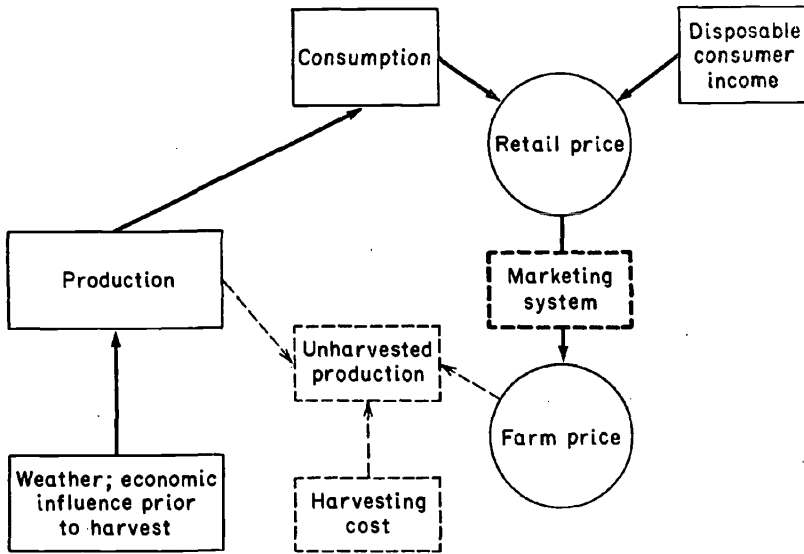
Arrows show direction of influence. Heavy arrows indicate major paths of influence which account for the bulk of the variation in current prices. Light dashed arrows indicate paths of negligible, doubtful, or occasional importance.

Source: U. S. Department of Agriculture.

gins are assumed to be established by competition between marketing agencies, and the farm price is equal to the retail price minus marketing charges. The impact of changes in other parts of the economy would come primarily through the disposable consumer income variable, and to a lesser extent through such changes in wage rates and material costs as might occur within the marketing system. The acreage planted to the crop in the subsequent year would be influenced somewhat by the price received by farmers for the

current crop; variations in weather would have an important bearing upon the actual production in the next year.

Chart 4 shows a simplified demand and supply structure for export crops such as wheat, cotton, and tobacco. If we consider a point in time at which the current production of cotton in the United States and in foreign countries has been determined, the farm

CHART 4

Demand and Supply Structure for Export Crops
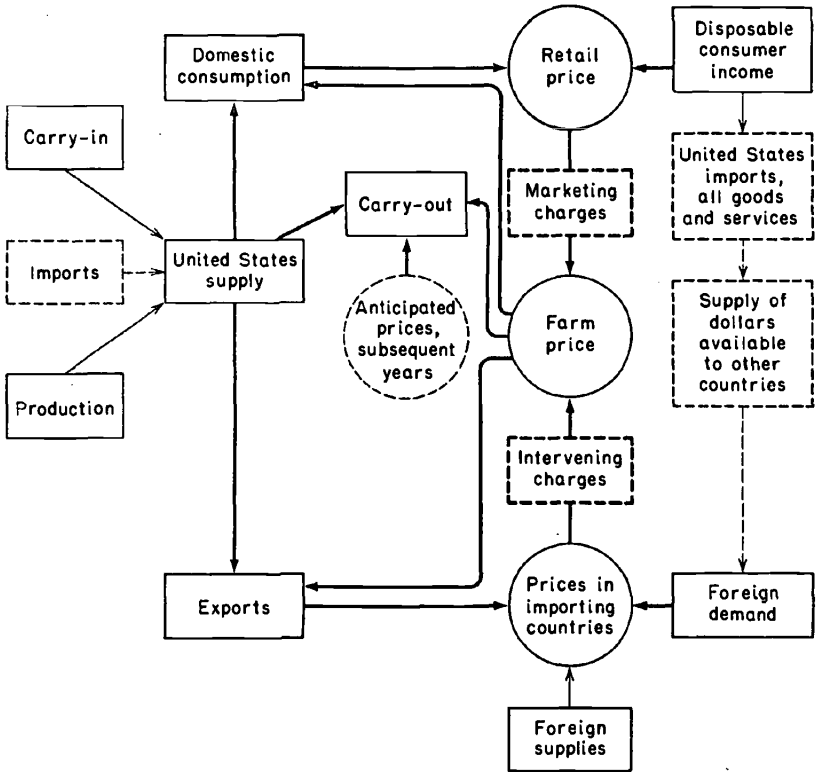
Arrows show direction of influence. Heavy arrows indicate major paths of influence which account for the bulk of the variation in current prices. Light solid arrows indicate definite but less important paths; dashed arrows indicate paths involving more remote variables.

Source: U. S. Department of Agriculture.

price of United States cotton (in the absence of price supports) will be determined by the level of demand in the United States and also in other countries. As indicated by the column of boxes on the right-hand side of this chart, foreign demand for United States cotton is not entirely independent of the major domestic demand factors. There are, of course, other factors affecting foreign demand

which are wholly independent of income changes in the United States.

While the demand and supply structures for export crops would be complicated enough under a system of international free trade, for many years export demand has also been subject to disturbances

CHART 5

Demand and Supply Structure for Feed Grains
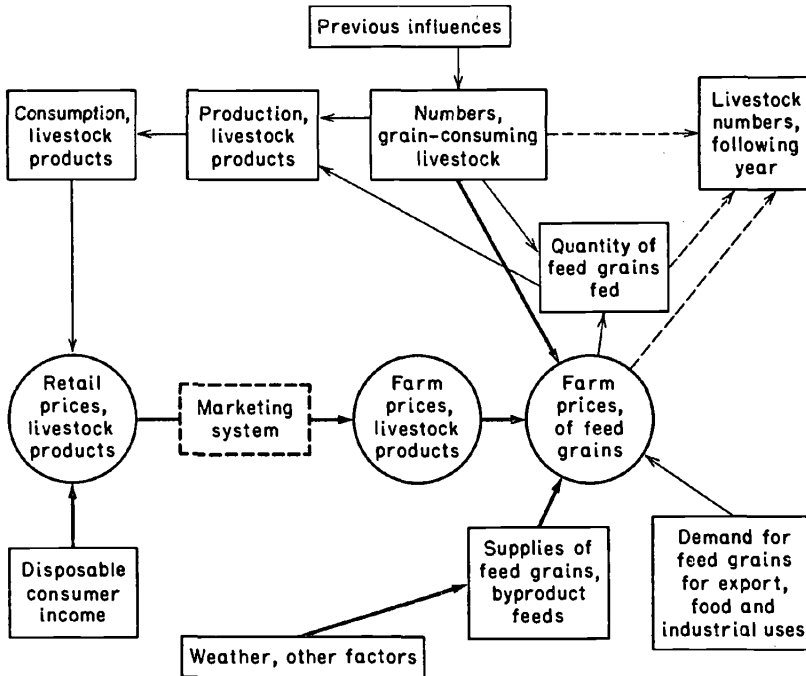
Arrows show direction of influence. Heavy arrows indicate major paths of influence which account for the bulk of the variation in current prices. Light solid arrows indicate definite but less important paths; dashed arrows indicate paths of negligible importance in the determination of current price.

Source: U. S. Department of Agriculture.

because of government actions. It is worth noting that producers of the major United States export crops—cotton, wheat, and tobacco—have been among the strongest advocates of government price support programs. The combination of major uncertainties and arbitrary elements in export demand, coupled with highly inelastic demands for domestic consumption, made prices of these commodities inherently less stable and predictable than those of many other farm products after 1933.

Chart 5 shows a simplified demand and supply structure for an-

other commodity group which has figured prominently in our price support program—corn and other feed grains. Normally only 3 or 4 per cent of our feed grains is exported, and more than 90 per cent of our production is consumed by domestic livestock. In turn, our livestock products are almost wholly consumed in this country, neither exports nor imports being of great quantitative importance.

The impacts of changes in economic activity are transmitted into the feed grain economy via disposable income, retail prices of livestock products, and changes (if any) in marketing charges on livestock products, and thence to the farm prices of livestock products, which influence the demand for feed grains. The other main factors influencing farm prices of feed grains are weather, carry-over stocks, and the numbers of grain-consuming livestock on hand. The resulting price of feed grains influences the quantity of feed grains fed to livestock and the number of livestock which are produced or carried over into the following season.

The information contained in the above diagram could also be expressed in terms of a set of structural equations.[7] For practical applications, we would have to estimate the numerical coefficient related to each of the arrows or lines of influence; where relevant, we would also have to estimate or specify the time lags involved. Chart 6 shows a diagram for corn with the relevant numerical coefficients added, but without any specification of the time lags which are particularly important in the area of livestock production and prices. The right-hand side of this chart also suggests how a price support and storage program for corn operates to reduce fluctuations in production and prices in other sectors of the livestock and feed economy.

Farm price support programs attempt to avert the "normal" consequences of free market demand and supply structures such as those illustrated above. They act to maintain farm prices and cash farm income in the face of adverse changes in either supply or demand conditions. How they affect the nonfarm economy through the maintenance of farm income has been discussed earlier. Other effects, and perhaps important ones, radiate from the stabilization of farm prices themselves, which creates some pressure to maintain retail food prices and wage rates. Analysis of these effects would require a model of the economy more complex that any I have had

[7] Such a set is given in Richard J. Foote, "A Four-Equation Model of the Livestock-Feed Economy and Its Endogenous Mechanism," *Journal of Farm Economics,* February 1953, pp. 44–61.

an opportunity to work with. Some first steps toward such a model are presented later in this paper.

CHART 6

Demand and Supply Structure for Corn
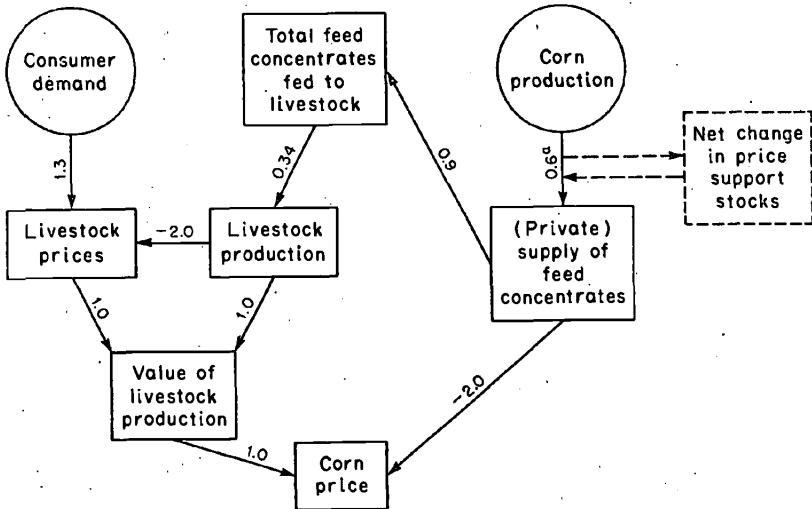
a In absence of price support. May be reduced considerably by price support and storage.

Arrows show direction of influence. Figures represent percent change in the "influenced" variable typically associated with 1 percent change in the "influencing" variable.

Source: U. S. Department of Agriculture.

2. Farm Price and Income Supports as Defenses against Depression

In the preceding section we have described the relative economic size of agriculture and some of its major interrelationships with the rest of the economy. The farm price support program in 1953 directly involved commodities accounting for less than half of total cash receipts from farm marketings.

DIRECT PRICE SUPPORTS

The price support program now in effect [8] and applicable to crops produced in 1954 may be summarized as follows: The six so-called basic commodities—cotton, wheat, corn, tobacco, rice, and peanuts— are required to be supported by means of nonrecourse loans at 90 per cent of parity through the 1954 crop year. Parity prices for wheat, corn, cotton, and peanuts are equal to their average prices during

[8] As of May 1954.

1909–1914 multiplied by the current level of an index of prices paid by farmers (including interest and taxes) on a 1910–1914 base. For rice and tobacco and for nearly all "nonbasic" commodities, the parity price is calculated by dividing the most recent ten-year-average price of the commodity by the index of prices received by farmers for all commodities during the same period, and multiplying the result by the index of prices paid by farmers (including interest, taxes, and farm wage rates), again on a 1910–1914 base. This is the so-called new or modernized parity formula. If applied to every commodity, the average level of modernized parities would be identical with the average level obtained by use of the old parity formula (except for slight changes in the prices-paid index, such as the inclusion of farm wage rates); but the new and old parity prices for individual commodities differ, sometimes by substantial percentages.[9]

In 1953, cash receipts from the six basic commodities totaled $7.7 billion, or 25 per cent of total farm cash receipts (Table 7).

There is a second group of commodities for which price support is also mandatory. The "designated nonbasic commodities" include

[9] A specimen calculation for wheat as of April 1954 may clarify the difference between "old" and modernized parity prices. The *old* parity is calculated as follows:

Item	*Unit*	*Amount*
1. Average price of wheat, August 1909–July 1914	Dol. per bu.	.884
2. Prices paid, interest, and taxes, April 1954	1910–1914 = 100	283
3. Old parity (equals item 1 times item 2)	Dol. per bu.	2.50

In contrast, *modernized* parity is calculated as follows:

Item	*Unit*	*Amount*
1. Average price of wheat, 1944–1953	Dol. per bu.	1.93
2. Prices received by farmers, all commodities, 1944–1953	1910–1914 = 100	256
3. Adjusted base price (equals item 1 divided by item 2)	Dol. per bu.	.754
4. Prices paid, interest, taxes, and farm wage rates, April 1954	1910–1914 = 100	283
5. Modernized parity (equals item 3 times item 4)	Dol. per bu.	2.13

As the index of prices received is essentially a weighted average of price relatives (1944–1953 as a per cent of 1910–1914) for individual commodities, an appropriately weighted average of all the "adjusted base prices" should be precisely 1/2.56 of the 1944–1953 prices-received index. But this is identical with the index number base, formed of actual 1910–1914 prices.

Hence the average level of modernized parities differs from the average level of old parities only when, and to the extent that, the inclusion of farm wage rates changes the parity index used. As of April 1954 the two parity indexes happened to be identical at 283. In July 1954 the parity index including wage rates was again at 283, but the index excluding wage rates had declined to 280.

TABLE 7

Commodities for Which Direct Price Support Programs Were
in Effect in 1953, and Their Relative Importance in Terms of
Cash Receipts from Farm Marketings

| | CASH RECEIPTS, 1953 | |
COMMODITY	Millions of Dollars	Per Cent of Total
Basic commodities	*$ 7,714*	*24.9%*
Cotton lint	2,766	8.9
Wheat	2,156	7.0
Corn	1,283	4.2
Tobacco	1,094	3.5
Rice	253	.8
Peanuts	162	.5
Designated nonbasic commodities	*4,419*	*14.3*
Dairy products [a]	4,269	13.8
Wool	129	.4
Mohair	11	[b]
Tung nuts	10	[b]
Honey	[c]	[c]
Other nonbasic commodities	*1,804*	*5.8*
Soybeans	672	2.2
Cottonseed	308	1.0
Oats	216	.7
Barley	172	.5
Dry edible beans	156	.5
Flaxseed	143	.5
Sorghum grain	103	.3
Rye	21	.1
Hairy vetch seed	4	[b]
Common rye grass seed	5	[b]
Crimson clover seed	3	[b]
Wild winter peas	1	[b]
Naval stores	[c]	[c]
Total price-supported commodities	$13,937	45.0%
Cash receipts from all farm marketings	$30,975	100.0%

[a] Support extended directly to milk for manufacturing only.

[b] Less than .5 per cent.

[c] While the price of this commodity is supported, no data are available on cash receipts.

dairy products, wool, mohair, tung nuts, and honey. Dairy products
are required to be supported at such levels between 75 and 90 per
cent of parity as will insure an adequate supply. Wool is to be sup-
ported at 90 per cent of parity until United States production of
shorn wool reaches a level of 360 million pounds. It seems unlikely
that this level will be reached for many years. The other three

commodities are minor in terms of the cash farm income involved. In 1953, cash receipts for this group of commodities amounted to $4.4 billion, or about 14 per cent of total farm cash receipts. Dairy products alone accounted for almost $4.3 billion of the total for this group.

During 1953 a number of other nonbasic commodities were accorded price support. Under the law the Secretary of Agriculture may elect to support these and other nondesignated nonbasic commodities at any level from 0 to 90 per cent of parity. The most important price-supported commodities in this category during 1953 were the oilseeds (soybeans, cottonseed, and flaxseed) and the minor feed grains (oats, barley, and sorghum grains). In 1953, cash receipts from the three oilseeds totaled $1.1 billion; cash receipts from the three minor feed grains totaled $.5 billion. Rye, dry edible beans, naval stores, and a number of grass and cover crop seeds also received price support in 1953. The nonbasic commodities (other than "designated") which were supported in 1953 accounted for $1.8 billion, or 6 per cent of total cash farm income.

Altogether, commodities which received direct price support in 1953 accounted for $13.9 billion, or 45 per cent of total cash receipts from farm marketings. The remaining commodities, accounting for 55 per cent of cash receipts ($17 billion), were not directly supported. It could be argued that fluid milk should be added to the list of commodities not directly supported, as dairy price support operations were confined to manufactured products.

EXTENT AND EFFECTS OF OTHER FARM PROGRAMS

Marketing Agreements and Orders. During 1953 some twenty-four federal marketing agreements and orders were in effect for commodities other than fluid milk. Federal marketing orders were applied to a number of tree fruits and nuts grown in the Pacific Coast states and to a few other commodities produced in small geographical areas. In general, such orders provide for regulation of the grades or qualities of the products which can be sold in primary commercial channels. Remaining portions of the crops are directed into processing outlets or surplus pools which typically yield lower returns than do the primary markets. No comprehensive study of the effects of these programs on farm income is available. However, commodities other than fluid milk subject to marketing orders in 1953 accounted for approximately $.8 billion of (1952) cash receipts from farm marketings.

In addition, some forty-nine federal milk marketing orders were in

effect during 1953. The volume of milk subject to these orders amounted to 25.9 billion pounds in 1953 and returned milk producers a cash income of approximately $1.2 billion. The fluid milk prices maintained under federal orders are frequently linked to prices of manufactured dairy products; in some markets various other supply, cost, and demand factors are also considered. In addition to the federal marketing orders, some states have milk control laws of their own. The bargaining strength of milk producers' associations also influences local prices of fluid milk. No estimates of the income effects of federal milk marketing orders are available.

Section 32 Activities. During 1952 the Department of Agriculture spent $74.7 million to purchase surplus commodities for use in school lunch and other domestic programs or to cover export payments (subsidies) and other incentives to divert products from normal domestic markets. These so-called Section 32 (of the Agriculture Adjustment Act of 1938) activities are financed each year out of 30 per cent of the general tariff revenues of the United States. During the past five years new funds accruing under Section 32 have averaged $150 million a year. An average of $95.8 million a year has been actually used and about $300 million remained in a special carry-over fund as of July 1, 1953.

Agricultural Conservation Program Payments. For several years these payments, ranging roughly from $200 to 300 million annually, have been used for soil building and soil conservation in a fairly strict sense. However, there has been some discussion of using these payments to secure more effective control of production under price support programs. In this connection the ACP payments would serve in part as compensation for income which is forgone by withdrawing certain acreages from currently productive use.

During 1938–1941 an average of $319 million a year was paid to producers of wheat, cotton, corn, rice, peanuts, tobacco, potatoes, and a few other commodities, equivalent to some fraction of the gap between the parity price value of those commodities and the market price value actually received by farmers. The ACP payments began as rewards for keeping land out of production, but as economic pressures eased they were gradually focused upon, and largely confined to, rewards for soil conservation and soil building. There is always the possibility, however, that the amount of such payments will again be increased as an aid to production control in case of large supplies or a recession in demand.

Sugar Act. Growers of sugar beets and sugar cane, products accounting for $139 and 53 million of cash farm income respectively in

1953, benefit from a special program operated under the Sugar Act of 1948. The price objective under the Sugar Act is not related to parity. In the event of a recession it seems likely that the Sugar Act would continue to operate to restrict imports and maintain prices to domestic growers at a higher level than would otherwise be the case.

RELATED FACTS

The preceding paragraphs give only a broad outline of the price support and related programs. There are a number of real or potential qualifications and hazards which are a part of the over-all price support picture. Among them are those described below.

Limitations on the Borrowing Authority of the Commodity Credit Corporation. From 1945 through 1949 the CCC was authorized to own, or extend credit on, a maximum of $4,750 million worth of commodities at any given time. Any *losses realized* in one year, however, were supposed to be made up by appropriation from the Treasury during the following year.

In June 1950 the CCC's borrowing authority was raised to $6,750 million. Actual commitments of the CCC totaled $4.3 billion in February 1950, and there appeared to be a distinct hazard that favorable yields on the 1950 crops would force the CCC either to exceed its mandatory borrowing authority or to default on its mandatory price support program. This same problem arose again in January 1954, and the President was obliged to request an increase in the CCC's borrowing authority to $8.5 billion.[10]

[10] This increase was approved on March 20, 1954. On August 18, Congress authorized a further increase, to $10 billion. CCC borrowing authority has been raised several times since 1938, as follows:

Date of Change	CCC Borrowing Authority (millions of dollars)
March 8, 1938	$ 500
March 4, 1939	900
August 9, 1940	1,400
July 1, 1941	2,650
July 16, 1943	3,000
April 12, 1945	4,750
June 28, 1950	6,750
March 20, 1954	8,500
August 18, 1954	10,000

Factors necessitating these increases have included (1) increases in the parity index (of prices paid by farmers), (2) increases in the percentage of parity at which loans were required to be set, and (3) expansions in the number of commodities supported. The physical volume of the CCC's price support investment in March 1954 was only moderately higher than in (say) 1941–1942, but the dollar-and-cents loan rates at which current stocks were acquired were two to three times as high as those prevailing during the 1939–1942 stock build-up.

So far Congress has raised the CCC's borrowing authority whenever price support commitments threatened to exceed it. But there is always a chance that the request for an increase, by dramatizing the size of commodity investments and potential losses, may lead to retrenchment in price support and marketing quota levels in subsequent years.

Storage Charges Borne by Growers. Market prices of grains and some other storable commodities often fall considerably below the announced loan rate early in the marketing year. This reflects the fact that growers receive the full loan rate only if they turn their crops over to the CCC at a specified time late in the marketing year. Growers must bear the cost of storing and handling their grain up to this point. On this count alone, growers would be just as well off selling their wheat or corn 10 cents below the loan rate at harvest time rather than holding it for the full loan rate several months later. Certain other cost and convenience factors may lead grain producers to accept still further discounts below the loan rate during the height of the harvest season.

Price Limitations on Release of CCC Stocks. However, in some years or parts of years, the effect of the price support program is to raise market prices several per cent above the announced loan rates. This is because the CCC is prohibited from releasing its inventories in normal commercial channels at a price less than 5 per cent above the current loan rate plus reasonable carrying charges. When demand exceeds commercial supplies (and grower-owned supplies under loan), this provision means that purchasers must pay prices 5 to 10 per cent above the loan rate to acquire these commodities from the CCC. (Commodities under *loan* may be redeemed by the grower at any time. Ordinarily this will be advantageous whenever the market price rises even slightly above the loan rate. The more stringent price provision mentioned above applies to commodities which are *owned* by the CCC, having been turned over to the Corporation by growers in satisfaction of their nonrecourse loans.)

Special Hazards. Grain producers must place their commodities in approved types of storage facilities before they are eligible for CCC loans. During the summer of 1953 many growers were unable to find approved storage for their wheat at harvest time and took discounts of as much as 50 cents a bushel below the loan rate.

Another hazard applicable to storable crops is the possibility that growers will refuse to vote marketing quotas into effect on the subsequent crop. If this occurs, the mandatory price support level is dropped to 50 per cent of parity, which for most growers of most basic crops would be a punitive level. If this possibility is taken

seriously, many growers, dealers, and storage operators will be reluctant to own and hold the commodity. The resulting pressure to sell results not only in larger quantities going under loan but also in more sales at substantial discounts below the loan rate.

Highlights on Acreage Allotments and Marketing Quotas. Acreage allotments and marketing quotas are an essential part of the price support program for basic crops. The Secretary of Agriculture is required to announce acreage allotments for most of these crops every year except under emergency conditions. The level at which acreage allotments are set depends upon the relationship of supply to expected demand for the commodity in question. When acreage allotments are in effect, the individual grower must comply with them in order to be eligible for price support. Many producers elect not to comply with acreage allotments, relying on the "umbrella effect" provided by those who do. When the market price begins to sag, eligible producers put sufficient quantities under loan to keep the market price from falling very far below the loan level. The producer who is ineligible for direct price support is enabled to sell his commodity for a few cents less than the loan rate and, at the same time, to avoid production restrictions.

When supplies of basic crops exceed certain levels, marketing quotas are invoked in addition to acreage allotments. Marketing quota legislation provides severe economic penalties for noncompliance. Thus marketing quotas are quite effective in limiting total plantings of a commodity to the desired area. They may be evaded somewhat *in spirit* by producers selecting their best land and using heavier fertilizer applications and other practices calculated to raise yields above the previous norm. But these efforts seldom offset more than a fraction of the effects of acreage reduction during the first year or two of a marketing quota program.

PROBABLE OPERATION OF PRESENT PRICE SUPPORT PROGRAM
DURING A SEVERE RECESSION [11]

It will be noted from the preceding section that a large part of the total price support activity under the present program is directed toward storable crops, particularly wheat, cotton, and feed grains. Once a fixed dollar-and-cents price support has been announced, the volume of price support activity on the forthcoming crop will depend upon variations in yield, variations in the foreign supply and demand situation, variations in domestic demand, and minor disturbing factors which are not separately measurable.

[11] The recession model described in the following pages *is not a forecast*. It is *assumed*, for illustrative purposes only.

Year-to-year fluctuations in crop yields, due mainly to weather, often overshadow the effects of year-to-year changes in consumer demand. Chart 7 summarizes variations in yields of wheat, corn, and cotton during 1901–1950. As of 1950 the zero or trend line in these

CHART 7

Variations in Adjusted Crop Yields
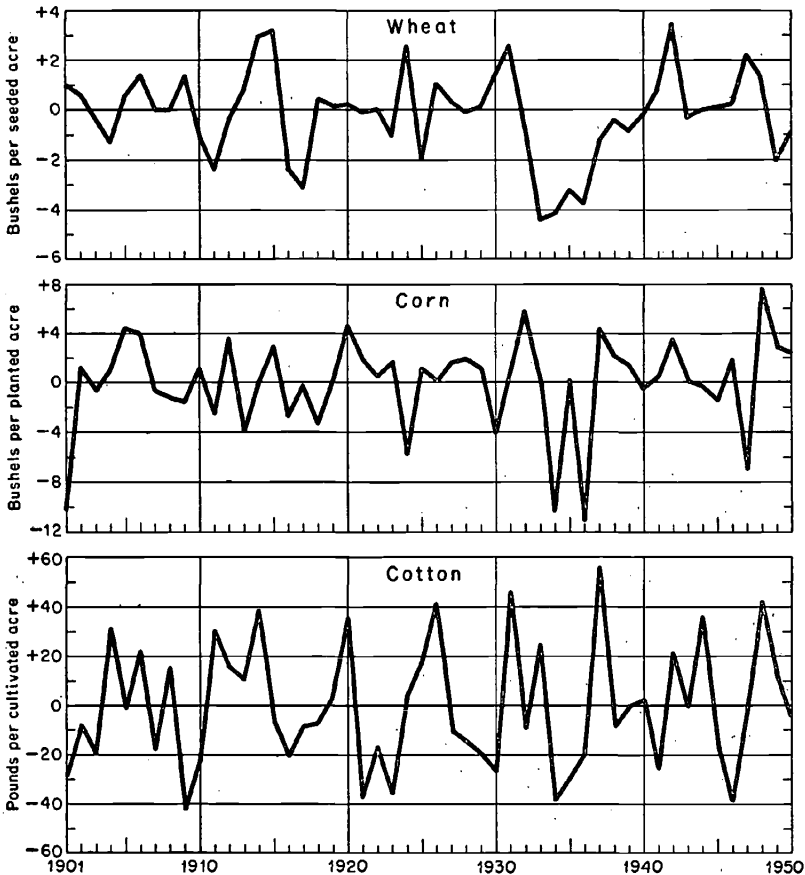
Yields adjusted roughly to 1952 conditions by averaging: (1) actual deviations from 9-year moving averages, centered and (2) percentage deviations applied to 1952 goal yields.
Source: U. S. Department of Agriculture.

charts would represent per acre yields of 14 to 15 bushels of wheat, 38 bushels of corn, and 280 pounds of cotton. The larger yield deviations for these crops exceed 10 per cent, and in a few cases 20 per cent, of the trend yield. A large part of the CCC stock build-up from June 1948 to February 1950 was due to record yields of corn and cot-

ton in 1948, and above-average yields also in 1949. High yields have also contributed to the stock build-up currently taking place.

Sudden changes in export demand also contributed substantially to the current stock build-up and to that of 1939–1942. If such changes, or high crop yields, happen to coincide with an economic recession, there is a tendency to exaggerate the importance of the recession itself as a factor in the accumulation of price support stocks. Such a coincidence, as during 1948–1950, leads in turn to an over-estimate of the contribution of the price support program *to off-setting the effects of recession.* While CCC inventories and loans outstanding increased $2½ billion from June 1948 to February 1950, at least half of the rise was due to factors other than the recession.

How would the present price support program operate during a severe economic recession? In the following hypothetical illustration we shall abstract from reality in a number of respects: (1) we assume average weather in each year involved in the projection—hence average crop yields except for possible effects of the price support program itself; (2) we assume no sharp changes in the production of crops in foreign countries or in the level of demand in foreign countries except changes reasonably related to a domestic economic recession; and (3) we assume that price support commitments will be continued for the same commodities and at the same percentages of parity throughout the recession as at the time of its assumed beginning in January of a given year.[12]

The setting is as follows: Because of the forward-pricing provisions of the price support law, the minimum dollar-and-cents loan rates for crops in any given year are mostly announced by February of that year and remain in effect until the spring or summer of the following year. Marketing quotas and acreage allotments where applicable are also announced annually by February. With respect to price-supported crops for which no acreage allotments or marketing quotas are announced, farmers will largely have made their planting decisions by February or March. The price support level for dairy products must be announced sometime before April 1 each year. In the current projection we make an assumption which is not true to fact—we assume that dairy price supports are extended at 90 per

[12] The following analysis was prepared early in 1954 and was intended to throw light on the issues confronting economists and legislators at that time. Some of the issues were at least temporarily resolved by passage of the Agricultural Act of 1954 in August of that year. However, the main features of the analysis would be unchanged if the hypothetical recession were assumed to begin in 1956 or any other year subsequent to 1954.

cent of parity, the level which applied as of January in the first recession year.[13]

Thus as of January or February, when the recession is assumed to begin, price support commitments are laid out rigidly for a period extending twelve to eighteen months into the future. Now let us consider the recession's impact on this program. The economic framework for this hypothetical recession is shown in Table 8. It is about

TABLE 8

Projections of Employment, Income, and Prices during a Hypothetical Severe Recession [a]

ITEM	UNIT OR BASE	FIRST YEAR OF RECESSION		SECOND YEAR OF RECESSION		THIRD YEAR OF RECESSION
		January	July	January	July	January
Gross national product	Bil. dol.	350	328	302	282	275
Disposable personal income	Bil. dol.	240	229	217	207	204
Disposable income per capita	Dollars	1,490	1,412	1,328	1,258	1,230
Population [b]	Million	161.1	162.2	163.4	164.6	165.8
Labor force (civilian)	Million	63.6	64.0	64.4	64.7	65.0
Employment	Million	60.6	59.2	57.4	55.8	55.8
Unemployment	Million	3.0	4.8	7.0	8.9	9.2
Industrial production	1947–1949 = 100	125	117	109	103	100
Consumer price index	1947–1949 = 100	112	110	107	105	103
New parity index	1910–1914 = 100	274	266	260	254	251
Old parity index	1910–1914 = 100	274	267	262	256	254

[a] This is not a forecast, but an assumption made for illustrative purposes. The projections are based on a sharp decline in employment and a rise in unemployment to around 8 to 9 million workers in the second year of recession. The workweek is shortened considerably to reflect the disappearance of overtime work as well as a reduction of the standard workweek in some industries. Little change in output per man-hour is assumed. With reduced employment, a considerable drop is projected for real output, the price level, and consumer incomes.

[b] Including armed forces overseas.

as severe a recession as seems within the range of possibility, in view of the various built-in stabilizers in the economy today and the greater readiness of government to engage in countercyclical action. *The main reason for assuming such a severe recession is to make the net influence of domestic demand factors stand out more clearly over other factors and disturbances which might largely overshadow the effects of a more moderate decline in domestic demand.* Certain key variables which influence the demand for farm products or (as in

[13] Dairy products were supported at 90 per cent of parity for two years prior to April 1, 1954. Although supports were lowered to 75 per cent of parity by the Secretary as of April 1, there was a strong drive in Congress as late as August 1954 to restore them, by law, to at least 85 per cent of parity. The 90 per cent level was assumed here because it was still in effect as of January 1954 and because it had been associated for some time, in fact and in spirit, with the 90 per cent support prices for basic crops.

the case of the prices-paid index) the level at which price supports must be set for crops in the second recession year are shown in Table 9.

We shall abstract from current reality in another respect also. We shall assume that, just before the onset of the recession, supplies and demands for all commodities are the same both with and without a price support program. For commodities eligible for direct

TABLE 9

Projections of Industrial Output, Disposable Income, and Prices Paid by Farmers during a Hypothetical Severe Recession, by Months, Eighteen-Month Period [a]

Year and Month	Industrial Production (1947–1949 = 100)	Disposable Income (billions of dollars)	Prices Paid, Including Interest, Taxes, and Wage Rates (1910–1914 = 100)	Consumer Price Index (1947–1949 = 100)
First Year				
January	125	$240	274	112
February	124	238	273	111.5
March	122	236	271	111
April	121	234	270	111
May	120	232	269	110.5
June	118	231	268	110
July	117	229	266	110
August	116	227	265	109.5
September	114	225	264	109
October	113	223	263	108.5
November	111	221	262	108
December	110	219	261	108
Second year				
January	109	217	260	107
February	108	215	259	106.5
March	107	213	258	106
April	106	212	257	106
May	105	210	256	105
June	104	208	255	105

[a] This is not a forecast, but an assumption made for illustrative purposes. Figures are largely straight-line interpolations from those shown in Table 8.

price support, this means that, at the beginning of the recession, we assume supply and demand to be in balance precisely at the price support level. The purpose of this assumption is to emphasize *changes* in farm prices and incomes during the assumed recession, without regard for differences in the prerecession levels of farm prices and incomes which might have resulted from the presence or absence of price support programs.

In making the farm price, production, and income projections summarized below, I have tried to estimate for each major commodity or commodity group the prices and rates of production which would result from the assumed decline in consumer income and from the interaction of livestock and feed prices. Time lags in the adjustment of livestock and crop production were taken into account commodity by commodity. In estimating these price and production changes, statistical demand and supply relationships were extensively used, but with coefficients rounded to one or at most two significant figures. The projections as a whole are partly plastic or intuitive—they are not precisely defined by a set of structural equations, although the equations implied in the results could be written out.

The over-all results of the projections just described are shown in Table 10. The main reasons for differences with and without price supports are summarized below.

Marketings. With no supports the only change allowed for in the volume of farm marketings is a moderate increase in marketings of cattle. This reflects an expectation that cattlemen would try to move their stock and reduce their inventories more rapidly in the face of declining prices for cattle than if cattle prices remained stable. With prices of all farm products falling freely in response to declining demand, there would be little incentive to shift the pre-recession pattern of production and little opportunity to leave the farm for nonfarm employment. Total agricultural production would be maintained at about the pre-recession level.

With supports at fixed percentages of parity under storable crops and dairy products, but not under poultry, eggs, or meat animals, marketings of cattle might increase by January, second year of recession, to about the same extent and for the same reasons as they would if no other commodities were supported. In addition, the price supports for dairy products would encourage some increase in milk production as competing livestock enterprises became less and less profitable. Production and marketings of crops could not be reduced before about July of the second year of recession. The figures shown for July, second year of recession, and January, third year of recession, assume that acreages of basic crops in the second year of recession are reduced by the following percentages through the imposition of marketing quotas: wheat 10 per cent, cotton 15 per cent, tobacco 10 per cent, rice 20 per cent, and peanuts 10 per cent. It is assumed further that no attempt is made to prevent productive use

TABLE 10

Comparison of Farm Prices, Marketings, and Cash Receipts during a Hypothetical Severe Recession (1) with No Price Supports and (2) with Prices of Specified Commodities Supported at Fixed Percentages of Parity[a]

DATE	MARKETINGS No Supports	MARKETINGS "Rigid" Supports	PRICES No Supports	PRICES "Rigid" Supports[b]	CASH RECEIPTS No Supports	CASH RECEIPTS "Rigid" Supports[b]	CASH RECEIPTS (SEASONALLY ADJUSTED ANNUAL RATES) No Supports	"Rigid" Supports[b]	Difference[b]
	(indexes, January, first year of recession = 100)						(billions of dollars)		
First year of recession									
January[c]	100.0	100.0	100.0	100.0	100.0	100.0	$30.00[d]	$30.00[d]	—
July	100.0	100.1	92.2	94.5	92.2	94.6	27.66	28.38	$ .72
Second year of recession									
January	100.4	100.5	85.1	89.3	85.4	89.7	25.62	26.91	1.29
July	100.4	99.4	79.3	86.9	79.6	86.4	23.88	25.92	2.04
Third year of recession									
January	100.4	98.1	78.7	87.8	79.0	86.1	23.70	25.83	2.13

a Aggregates built up from estimates for major commodities or groups of related commodities.

b Does not allow for the secondary effects reflected in Table 11. Table 11 implies that in January, third year of recession, under "rigid" supports, prices would stand at 89.3 per cent of their level in the first month of recession and cash receipts would amount to $26.28 billion, or $2.58 billion higher than with no supports.

c For convenience in comparing changes due to recession, it is assumed that marketings, prices, and cash receipts are the same as of January, first year of recession, with or without supports.

d Approximately the actual annual rate as of January 1953. Cash receipts in the 1953 calendar year totaled $30,975 million.

of acreage diverted from the basic crops. As a result, a large share of the "diverted acreage" is assumed, on the basis of past experience, to go into feed grains, oilseeds, hay, and pasture.

It is assumed that acreage allotments (but not marketing quotas) would be applied to corn in the commercial area at about the same level and with the same limited success as in recent years. Within the commercial area the acreage of corn for harvest in the first year of recession would be about 5 million acres lower than in the year before. However, much of this acreage would be expected to go into soybeans, oats, hay, and pasture, and corn acreage itself would be expected to increase somewhat outside the commercial corn area as a result of the reduction in wheat and cotton acreage. The net result would be little change in total feed grain production and marketings in the first two years of recession from levels in the year before its onset.

As of January, third year of recession, the projections under the present price support program assume cutbacks from January, first year of recession, of around 5 per cent in production and marketings of hogs, eggs, and turkeys and about 8 per cent in chickens and broilers. However, milk production in January, third year of recession, is assumed to be 5 per cent higher than two years earlier. The aggregate volume of farm marketings as of the same date is estimated to be only 2 to 2½ per cent smaller than it would have been in the absence of price supports and acreage restrictions. An additional reduction of about 1 per cent might be obtained if acreages diverted from basic crops could be kept out of currently productive uses. However, a really tight program to control diverted acres might require sizable conservation, rental, or benefit payments to the farmers affected.

Prices. With no supports, farm prices are estimated to fall 15 per cent during the first year of the recession. The bulk of this drop represents the direct effect of the assumed 10 per cent drop in disposable income upon domestic consumer demand. This effect is assumed to be somewhat augmented (1) by a weakening in commercial storage demand and in the reservation demands of farmers for storable crops and for livestock, particularly feeder cattle and cattle to maintain or augment breeding herds, and (2) by a contraction in foreign demand for our export crops. This explicitly assumes that a severe recession in the United States would have serious effects on the economies of many other countries. The further decline in disposable income during the second year of recession is estimated to result in a

farm price level as of January, third year of recession, fully 20 per cent lower than that at the beginning of the recession.

With price supports at constant percentages of parity on storable crops and dairy products, a smaller, but still substantial, decline in average farm prices is indicated—between 10 and 11 per cent during the first year of recession. Up to that time, prices of meat animals, poultry and eggs, fruits and vegetables, and some other commodities not directly supported would fall much the same as if there were no price supports for other commodities. Prices of storable crops are assumed to rest more heavily on, or sag further below, their respective support prices as a result of the decline in demand. Under recession conditions it appears likely that stocks of wheat, feed grains, and possibly cotton would increase during the first crop year after the onset of the depression. For various reasons, market prices of grains sag below supports when CCC stocks are building up, although in some cases they exceed the loan levels during periods when demand is strong enough to draw supplies out of CCC ownership.

During the second recession year, some delayed effects of the price support program for feed grains begin to show up in livestock prices, as a result of cutbacks in production. As of January, third year of recession, prices of the unsupported meat animals and poultry products are estimated to average only 16 per cent below the level at the onset of the recession if feed grains are supported, as compared with 23 per cent below if feed grains are not supported.

As of January, third year of recession, the dollar-and-cents levels of price supports for the eligible commodities are 5 per cent lower than in January of the year before, reflecting the same percentage drop in the index of prices paid by farmers (the so-called "parity index"). The average drop in crop prices during the first two years of recession (including some crops not price-supported) is about 10 per cent, as contrasted with an estimated 21 or 22 per cent drop in crop prices if supports are completely absent. For farm products in the aggregate, the present price support program is estimated to hold the two-year price decline to 12 per cent, as compared with about 21 per cent in the absence of any price supports.

Cash Receipts. The cash receipts indexes are simply products of the price and marketing indexes shown in Table 10. As of January, third recession year, cash receipts are projected as down 14 per cent if the present price support program were continued as compared with a 21 per cent drop if there were no price supports.

In terms of dollars, the present price support program is shown as

sustaining cash receipts at an annual rate of $1.3 billion higher in January, second recession year, and about $2.1 billion higher as of January of the next year than they would be in the absence of price supports. With production expenditures probably not much different under the two programs, the net incomes of farm families at the latter date would also be about $2 billion higher (or, more precisely, would have dropped $2 billion less from pre-recession levels) than in the absence of price supports. This difference would represent roughly 20 per cent of net farm income as of January, third recession year.

Extent of Price Support Stock Accumulations. In accomplishing this degree of income support, the price support agency would also significantly increase its outlays for, or investments in, price support stocks. Using the aggregative demand relationships described earlier, implying an elasticity of commercial utililization of farm products of —.6, the rate of total commercial movement of farm products as of January, third recession year, might be about 7 per cent lower with continued supports than in the absence of a price support program. As of the same date, however, the volume of farm marketings is estimated to be only 2.3 per cent lower than in the absence of a price support program; hence nearly 5 per cent of the volume of farm marketings at that time would be going into price support stocks. At the loan rates then existing, this would represent an accumulation of a little less than $1½ billion (annual-rate basis) during the second and third depression years.

Considering only the cutback in commercial use relative to total marketings, price support stocks might increase less than ½ billion dollars as of July, first recession year, compared with the level which would have been attained if no recession had begun. An additional billion dollars might be added to stocks out of the year's crop and as much as $1½ billion more during the next crop year. The cumulative increase in price support investments during the first two recession years might well exceed $2½ billion.

If supplies just before the beginning of an assumed recession were about average, a sizable stock pickup by the CCC might be realized as of July, first recession year. This would result from private firms' and individuals' cutting their holdings of storable commodities from a relatively easy level down to minimum working stocks. As a consequence, the net increase in price support stocks might substantially exceed the net increase in *total* stocks, price support and other combined. No allowance is made for such a shift in the present estimates because owners, fearing the burdensome surpluses already

on hand, have already made this transfer. If we assumed a recession to begin at a time when commercial stocks were normal, the net shift of the storage burden from commercial to CCC hands could well amount to $1 billion.

EFFECTS OF THE PRESENT FARM PRICE SUPPORT PROGRAM ON
GENERAL ECONOMIC STABILITY DURING A SEVERE RECESSION

If we were simply interested in estimating the effects of a severe recession upon farm prices and farm income, we could, for most practical purposes, stop at this point. Obviously, a price support program of the present type affects the time path of *farm* prices and incomes during a recession. But what does a farm price support program contribute, directly or indirectly, to stability in the remainder of the economy? This is a more difficult question, to which I have never seen a well-reasoned quantitative answer.

I am not sure that I have a satisfactory answer myself. But I believe I can lay out some of the relevant considerations, and perhaps I can give a rough idea of the effect of the present farm price support program upon various economic magnitudes.

Chart 8 shows some of the major lines along which a price support program would affect other parts of the economy. The coefficient beside each arrow represents the estimated percentage change in the variable to which the arrow points that is associated with a 1 per cent change in the variable from which the arrow leads. Most of these "path coefficients" are based upon known factors, such as the weights of particular components of official index numbers, or the coefficients of statistical demand functions. Others seem reasonable to me but could be checked by empirical analysis. One coefficient assumes a "multiplier" of 2, based on studies by A. R. Smithies and others. One coefficient operates with a time lag. Values of the three coefficients marked with asterisks are pure assumptions on my part.

As indicated, the farm price support program has three immediate effects: (1) it raises the average level of prices received by farmers; (2) it reduces farm output, at least after the first twelve months of recession; and (3) it reduces the commercial utilization of farm products.

Suppose, for example, that the direct effect of a price support program is to increase farm prices by 10 per cent. If marketing margins remain constant, this will increase retail food prices about 5 per cent. Because retail food prices carry a weight of 30 per cent in the consumer price index, that index will rise 1.5 per cent.

The "influence" of the consumer price index upon wage rates is

based on pure assumption. This index figures in some important wage contracts, and it is widely used as a talking point in wage disputes. The coefficient in Chart 8 implies that a 1.5 per cent increase in the consumer price index would have the effect of maintaining wage rates 1 per cent higher than they would otherwise have been. The influences of wage rates upon gross national product and

CHART 8

Lines of Influence of Present Farm Price Support Program
on Various Economic Magnitudes
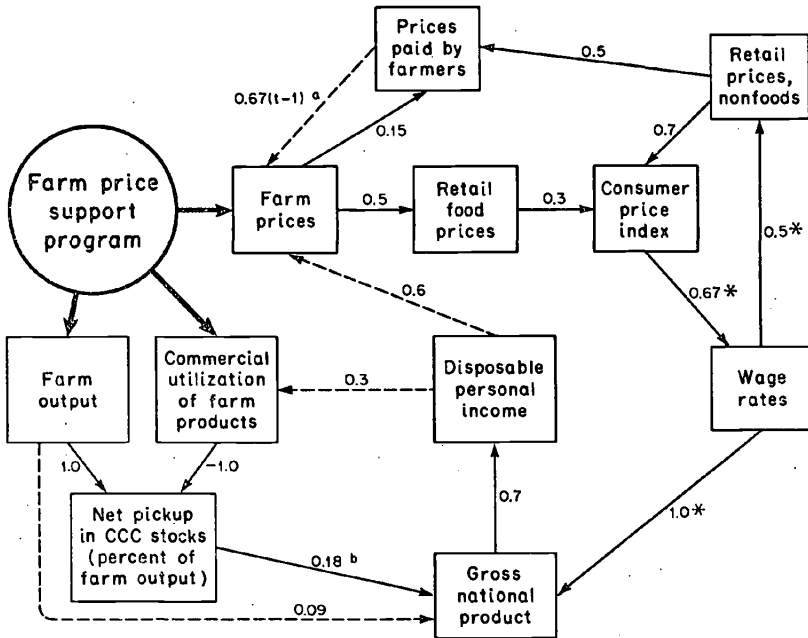
Numbers beside arrows are multipliers applicable to percentage changes in variable from which arrow leads. Those marked ✳ are assumed without empirical check.

a Operates with time lag of one year.   b Assumes "multiplier" of 2.0

Source: U. S. Department of Agriculture.

upon the retail prices of nonfood products also rest on assumption. (The latter coefficient assumes that wages constitute about 50 per cent of value added in manufacturing and distributing processes, and that most nonfarm prices are administered in such a way that these direct wage costs are covered, even during a recession.)

Chart 8 implies that the initial or direct increase in the consumer price index generates a further increase in the same index. An increase in the consumer price index increases wage rates, which in-

crease nonfood prices, which enter the consumer price index with a weight of 70 per cent. Hence the *total* effect upon the consumer price index of an increase in farm prices consists of the direct influence plus this "feed-back" effect.

An initial increase of 10 per cent in prices *received* by farmers leads directly, through prices of purchased livestock, feed, and food products, to something like a 1.5 per cent increase in the index of prices *paid* by farmers. There is also an indirect effect operating through the consumer price index, wage rates, and retail prices of nonfood products. This effect is only about a fourth as large as the direct one.

The dotted arrow running from "prices paid" to "farm prices" reflects use of the prices-paid index as a basis for setting price supports. Because such supports are announced in advance of the planting season, this coefficient operates with a time lag of one year. Under the present price support program the direct influence of a 1 per cent increase in the prices-paid index would apply to products accounting for only 45 per cent of cash farm income; hence the direct effect on the average level of all farm prices would be only .45 per cent. The coefficient of .67 shown in Chart 8 allows for the influence of price support levels for feed grains upon the unsupported prices of meat animals, poultry, and eggs.

Chart 8 also shows three chains of influence of price supports upon disposable personal income, particularly that of nonfarm persons. An increase in disposable income raises prices of those farm products which are not supported and whose market supplies at any given time are fixed; it also increases commercial utilization (but not prices) of farm products which are in surplus at their applicable support prices. The direct effect of the farm price support program in raising the disposable income of farm operators is not adequately allowed for in Chart 8.

The net increase in CCC stocks as a result of the price support program represents an injection of money from outside the private economy. It is equivalent to a purchase of goods by the federal government, with no simultaneous increase in government revenue. In Chart 8 we apply a multiplier of 2 to the annual rate of increase in CCC price support stocks.

The model in Chart 8 contains a number of implicit "path-multipliers." If we follow the arrow *from* farm prices through the consumer price index and back through disposable personal income *to* farm prices, we find that the initial increase in farm prices generates a secondary increase 4.2 per cent as large as the first one. The sec-

ondary increase would generate a third-order increase, and so on. Using a well-known formula for the sum of a power series, the final effect of a 1 per cent increase in farm prices along this path would be equal to

$$\frac{1}{1 - .042}$$

or 1.044 per cent.

Some minor additional effects of the same sort are found if we consider the secondary "loops" centering around the consumer price index and disposable personal income. The chain of influences from farm prices through prices paid by farmers and back again involves a similar power series, but with a time lag of one year between the change in prices paid and the next-order change in farm prices. The effects of the price support program upon farm output (by means of acreage restrictions) and upon the net increase in CCC price support stocks may be *additive* to the initial effect of the program upon farm prices and may not involve power series multipliers.

In a stationary equilibrium, eliminating the effect of the one time lag in the system, it appears that if the existing price support program initially or directly increased farm prices by 10 per cent the result would be a final level of farm prices about 12.3 per cent higher than it would have been in the absence of a price support program. (This figure depends, of course, on the coefficients in Chart 8 and would be altered if some of these coefficients were revised.)

Table 11 shows the numerical results obtained by applying the coefficients in Chart 8 to the initial price and quantity data given in Table 10 (or underlying it). The estimated decline in farm prices from January, first recession year, to January, third recession year, is only half as large as the decline experienced in the absence of price supports. As of January, third recession year, farm prices with the present support program are shown as 13 per cent higher than farm prices without support. The index of prices paid by farmers is indicated to be more than 2 per cent higher as a result of the price support program. This would mean a roughly similar increase in production expenditures and a corresponding reduction in the *net* income differences resulting from the farm prices shown. The parity ratio is shown as declining to 79 in the absence of price support, and as leveling out at 86 under the present program. The slight increase in the parity ratio with price support as of January, third recession year, reflects the delayed action of feed grain supports upon livestock production and prices. The consumer price index is shown as

2½ or 3 per cent higher with the price support program than without it.

TABLE 11

Estimated Values of Selected Economic Magnitudes during a Hypothetical Severe Recession (1) with No Farm Price Supports and (2) with Prices of Specified Commodities Supported at Fixed Percentages of Parity [a]

ITEM	UNIT	1ST RECESSION YEAR January	July	2ND RECESSION YEAR January	July	3RD RECESSION YEAR January
Prices received by farmers	(1909–1914 = 100)					
Present supports	"	252	240	226	224	225
No supports	"	252	234	214	202	199
Difference	"	0	6	12	22	26
Prices paid by farmers	(1910–1914 = 100)					
Present supports	"	274	267	262	259	257
No supports	"	274	266	260	254	251
Difference	"	0	1	2	5	6
Parity ratio [b]	Per cent					
Present supports	"	92	90	86	86	88
No supports	"	92	88	82	80	79
Difference	"	0	2	4	6	9
Consumer price index	(1947–1949 = 100)					
Present supports	"	112	111	108	107	106
No supports	"	112	110	107	105	103
Difference	"	0	1	1	2	3
Disposable personal income	Bil. dol.					
Present supports [c]	"	240	230	220	211	208
No supports	"	240	229	217	207	204
Difference [c]	"	0	1	3	4	4
Gross national product	Bil. dol.					
Present supports	"	350	330	305	288	281
No supports	"	350	328	302	282	275
Difference	"	0	2	3	6	6

[a] Projections under *present supports* are based on initial estimates in Table 10 adjusted for the assumed interaction patterns shown in Chart 8.

[b] Prices received by farmers as a percentage of prices paid by farmers.

[c] Includes rough allowance for increase in disposable income of farm operators resulting directly from price support program but not provided for in Chart 8.

We now come to two other magnitudes of central interest to economic forecasters. As of January, third recession year, the figures in Table 10 implied a net annual increase in CCC stocks of about $1½ billion. This effect, plus certain others indicated in Chart 8, leads to a gross national product as of January, third recession year, about

$6 billion higher with the present price support program than with no supports. While this is a substantial sum, it is only 8 per cent of the assumed total decline in GNP from peak to trough in the absence of a price support program.

Finally, as of January, third recession year, disposable income is projected as $4 billion higher with the present price support program than in the absence of price supports. This is a little more than 10 per cent of the estimated decline from January, first recession year, in the absence of price support. Of the $4 billion increase, $2 billion or more may accrue to nonfarm people, while perhaps $1½ to 2 billion probably accrues to farm operators. (In terms of net farm income *before personal taxes,* the price support program under existing legislation [14] might yield about $2 billion more at the trough of a severe recession than would result in the absence of price support.)

Although there may be several faulty coefficients in Chart 8, and some faulty lines of reasoning, I believe that Table 11 defines the net effect of the present farm price support program upon the course of an economic recession reasonably well. Under the recession pattern assumed here, the present price support program might reduce the drift in the general retail price level by as much as 30 per cent; it might reduce the decline in GNP and disposable personal income by something like 10 per cent; and it would reduce the drop in farm prices (which it is specifically set up to do) by 50 per cent relative to the level expected in the absence of a price support program.

A prolonged recession would subject the present price support program to severe stresses. A few of the problems are summarized below.

We have estimated that, as of January, third recession year, the CCC would be accumulating commodity stocks at the rate of approximately $1½ billion a year. In physical terms the CCC would be picking up nearly 5 per cent of total farm output, and the price support program might be considered out of balance to that extent.

If the economy were expected to continue at the January, third recession year, level for some time, one alternative would be a desperate attempt to reduce farm output by another 5 per cent. Possible lines of attack would include (1) reducing the national wheat acreage allotment from its present legal minimum of 55 million acres to something less than 50 million acres, (2) complete prohibition of currently productive use of acreages diverted from the basic crops, and (3) establishing marketing quotas for oilseeds.

[14] This analysis was prepared before passage of the Agricultural Act of 1954.

But these measures could hardly be expected to reduce total farm output by more than 3 per cent. The next 2 per cent reduction might require programs which have been regarded as either administratively or politically unworkable in the past, such as (1) marketing quotas for milk and butterfat and/or (2) marketing quotas for corn and perhaps other feed grains.

An alternative to these ultrarestrictive measures would be to increase consumption and discourage production by abandoning, or substantially lowering, price supports for dairy products (below the 90 per cent of parity assumed in our model). A substantial lowering of the price support level for corn and other feed grains might also be necessary. These measures would, of course, reduce the level of farm prices (perhaps about 5 per cent in the aggregate) and would have some effect on the rest of the economy as indicated in Chart 8. If price support stocks at the beginning of the recession were small, and if definite signs of economic recovery began to appear by about January, third recession year, the price support program might be able to "pull through" without resort to the tight restrictions and the support level reductions mentioned above. But if stocks were high at the beginning of the recession, as they are at this time, and/or if bumper yields should occur in the first and second recession years, not only might these two sorts of measures seem necessary, but costly and unusual surplus disposal measures might be undertaken and the whole price support program might be drastically revised.

3. Effects of Alternative Farm Programs upon General Economic Stability

Two distinct sorts of questions will be considered under this heading. In the first section we shall assume that each of a number of alternative farm programs has actually been operating for a considerable period before a recession begins and we shall inquire how each program would affect the course of events during a hypothetical recession.

The second type of question is probably of much greater interest at the time this is written (May 1954): What would be the economic repercussions of a *shift* from the present price support program to a specified alternative program (a) if the general economy remained stable and (b) if such a transition happened to coincide with an economic recession? These two questions will be dealt with in turn.

If farm price support legislation is changed in 1954, it seems most likely that the shift will be from the present program, with continuous support for specified commodities at 90 per cent of parity, to some variant of the Agricultural Act of 1949. Multiple price plans for wheat, cotton, and rice have also received considerable attention in recent months. If multiple price plans were adopted for one or more of these crops, it seems likely that prices of other products now being supported would continue to receive support either under the present program or under some variation of the Agricultural Act of 1949.

Finally, we might consider a program which has been strongly advocated by some economists and some political figures, although it has never been used on an extensive scale under peacetime conditions. This would be a program of compensatory payments on livestock products, coupled with the present type of price support program on storable crops. Compensatory payments would be made directly to livestock producers based on the difference between the actual market price of the product and some specified percentage of parity.

THE AGRICULTURAL ACT OF 1949

Contrary to some rather widespread opinions, price supports for most of the basic crops under the Agricultural Act of 1949 are not low or, in most cases, extremely flexible. A prominent visual feature of the 1949 act is a schedule of price supports, expressed as percentages of parity, which drops 1 point for every 2-point increase in the ratio of actual supplies to normal supplies. This price support schedule ranges from 90 per cent down to 75 per cent of parity. Many persons have assumed that, if the Agricultural Act of 1949 were put into effect, prices of the six basic crops would immediately fall to 75 per cent of parity and stay there. This is by no means the case.

Under the 1949 act, tobacco is to be supported at 90 per cent of parity in any year in which marketing quotas are proclaimed. And marketing quotas must be proclaimed in any year if quotas have been in effect during the preceding year. The effect is continuous support for tobacco at 90 per cent of parity. Supplies of peanuts never get very far above normal under present program operations, as excess stocks at the end of each year are generally crushed for oil and do not figure in the supply percentage for peanuts for direct edible use as nuts or peanut butter. Thus price support for peanuts would drop below 90 per cent of parity only rarely and by small

percentages. In the case of cotton, even if certain special legislation not part of the 1949 act were eliminated, the price support level would rarely fall below 90 per cent of parity, and then, as a rule, by rather small amounts.

The case for wheat is different. Due to an inconsistency in the wheat legislation (which has not required correction while mandatory supports at 90 per cent of parity have been continued), wheat marketing quotas would be set at a level which, with average yields, would bring supplies in the ensuing year to a level requiring support at not less than 83 per cent of parity. If the flexible provisions of the 1949 act should go into effect, it seems likely that the present inconsistency would be eliminated in such a way that the object of wheat marketing quotas in any year would be to reduce wheat supplies to a level such that support at 90 per cent of parity would become mandatory in the following year. The provisions for corn are more nearly in accord with the popular conception of flexible price supports. However, last year's record supply of corn (1953) would have required support at not less than 82 or 83 per cent of parity.

The flexibility which might be provided by large supplies resulting from bumper yields is at least partially thwarted by the forward-pricing provision of the act. If a minimum dollar-and-cents support price for corn is announced before planting time, based on the assumption of average yields, the support price for that crop cannot subsequently be lowered to take account of favorable weather and high yields.

Hence, if we assume the Agricultural Act of 1949 to be in effect and functioning well according to its internal logic just before the onset of a recession, farm prices would fall only a little faster and a little farther than under the present program of support for basic commodities at 90 per cent of parity. Assuming that price supports for dairy products were dropped from 90 per cent down to 75 per cent of parity shortly after the recession began, the average level of farm prices under the 1949 act would fall 1 per cent below the present program results (Table 11) as of January, second recession year, and about 2 per cent as of January, third recession year. Marketing quotas and acreage allotments would likely be applied at about the same level as under the present program.

In summary, the effects of the Agricultural Act of 1949 would be very similar to those of the program under existing legislation except that the differences from "no program" would be only about four-fifths as large. For example, as of January, third recession year, the index of prices received by farmers would be estimated at about

220 under the 1949 act, compared with 225 under the present program and 199 in the absence of price supports.

Other differences would be roughly similar. As of January, third recession year, cash receipts from farm marketings might be approximately $.5 billion lower under the 1949 act than under the present program, *assuming that both programs had been in operation before the beginning of the assumed recession and that they had resulted in precisely the same average pre-recession levels of prices, marketings, and income.*

THE PRESIDENT'S FARM PROGRAM

To a large extent, the President's farm program, as transmitted to Congress on January 11, 1954, is designed to ease the transition from the program now (May 1954) in effect to the Agricultural Act of 1949. Hence, over the long run, the President's program is very similar to the 1949 act and its behavior during a recession would also be much the same.

EITHER THE PROGRAM UNDER EXISTING LEGISLATION OR THE
AGRICULTURAL ACT OF 1949 SUPPLEMENTED BY MULTIPLE
PRICE PLANS FOR WHEAT, COTTON, AND RICE

If this combination of programs were well established before the onset of a severe recession, the stability effects would be much like those of the Agricultural Act of 1949. Possibly there would be no marketing quotas on the three crops under multiple price plans; if quotas were applied, they would probably be set at higher levels than under the present program or the 1949 act. Market prices of cotton and rice might decline much as they would if no price support program were in operation. The market price of wheat, however, might change only in proportion to changes in the price of corn, which is assumed to be supported at or near 90 per cent of its parity price. Livestock prices could be a shade lower as the result of larger quantities of wheat-fed animals, but as an offset somewhat larger quantities of feed grains might be picked up by the CCC under its loan program.

The net effect of the multiple price plans would be to drop the average level of prices received by farmers about 1 per cent as of January, second recession year, and about 2 per cent as of January, third recession year. Hence if other commodities were supported as under the present program, the farm price index as of January, third recession year, might be around 220 or 221; if multiple price plans were superimposed upon the Agricultural Act of 1949 for

other commodities, the farm-price-received index as of that date might be around 216, about two-thirds of the way from the "no support" level toward the level expected under the present program. However, farm output should be at least 1 per cent larger as of January, third recession year, so that the net effect of multiple price plans on the commodities specified might be to increase the drop in cash farm income during a recession about 1 per cent, or ¼ billion dollars, relative to programs which omitted the multiple price feature.

COMPENSATORY PAYMENTS ON LIVESTOCK PRODUCTS

Under this program we assume that prices of basic crops are supported directly (as under the present program) at their pre-recession level, corresponding to around 90 per cent of parity. In the case of livestock products, including milk and butterfat, we assume that no attempt will be made to interfere with market prices, but that, to the extent that market prices fall below the pre-recession percentage of parity, the government will pay the difference to livestock producers.

Under this program, farm prices would behave much as they would under the present support program through January, second recession year. As of July, second recession year, they would be about midway between the present program level and the "no support" level; in January, third recession year, they would be about one-third of the way between these two levels, but closer to the "no support" level.

Quite obviously, this program results in a higher, and hence more stable, level of cash income to farmers than any of the programs previously mentioned. As of January, third recession year, this program, including compensatory payments to producers, would return farmers nearly $4 billion more than they would receive in the absence of price supports. Alternatively, we might say that the drop in cash receipts from farm marketings *plus compensatory payments* is only four-tenths as great under this program as it would be in the absence of price supports.

However, the cost of the compensatory payments would be substantial. As of January, third recession year, these payments, on livestock products only, would be running at the rate of close to $3 billion a year. While the level of total returns maintained for livestock products would encourage a heavier consumption of feed grains and considerably reduce the CCC's pickup of feed crops, the CCC would very likely still be picking up half a billion dollars'

worth of other commodities (annual rate) as of January, third re-cession year.

The multiplier effect of compensatory payments plus net CCC stock pickups might raise GNP by around $7 billion as of January, third recession year, as compared with the "no support" level. However, the price effects upon GNP indicated in Chart 8 would amount to only $1 billion or so as of that date, so that total GNP might reach about $283 billion, compared with $281 billion under the present program and $275 billion in the absence of price supports. Disposable income might be around $210 billion as of that date, with the $2 billion increase as compared with the present program going mostly to farm operators. The consumer price index, how-ever, might be only 1 per cent above the level which would obtain in the absence of price supports.

This would undoubtedly come closer to stabilizing the gross and net incomes of farmers than any of the other programs discussed. It would do less than the other programs to stabilize the general price level and the level of wage rates. However, prices of food would be only about 2 per cent higher at retail than they would have been in the absence of farm price supports.

The balance sheet for this program, then, shows slightly greater stability in total GNP and disposable income, and moderately less stability in prices and wage rates. However, the peak annual cost of compensatory payments, around $3 billion a year, would have serious political drawbacks if it were charged to the farm price support program as such. It might also be challenged by nonfarm people as providing farmers with a higher level of income protec-tion than would be provided to others under the severe recession conditions we have assumed.

EFFECTS OF SHIFTING FROM THE PRESENT PROGRAM TO
ALTERNATIVE PROGRAMS AT THE PRESENT TIME (MAY 1954)

This question is the focal point of current debate over farm price support policy. Here we must step out of the "timeless" hypotheti-cal preoccupations of the earlier part of this paper and face up to historic time.

In this area, too, there are certain misconceptions which should be set straight. The present program, involving mandatory sup-port at 90 per cent of parity for the six basic crops, is in effect for 1954 crops. Changes in legislation will not affect the levels of price support for basic crops until the summer or fall of 1955. The level of price support for dairy products has recently been lowered from

90 to 75 per cent of parity, but this action was within the discretion of the Secretary of Agriculture under the present law. (In view of existing surpluses of dairy products, it may be argued that the language in the present law that milk and butterfat shall be supported at such levels "as will insure an adequate supply" practically required this step.)

Hence, except for a possible further sagging of market prices below loan rates during the spring and summer of 1955 in anticipation of lower support levels in the following year, the price support alternatives now under debate could have little or no effect on general economic stability before the summer of 1955.

The key elements now in controversy are as follows:

Modernized Parity. Four of the basic crops are still supported at 90 per cent of the old parity standard. At the present time, new parity prices for these crops are lower than their old parities by the following percentages: wheat 14, corn 11, cotton 3, and peanuts 19. Under present world price and domestic carry-over conditions, market prices for these crops would probably fall by very nearly these percentages if a sudden shift were made from old to new parities.

Under existing legislation the old parity formula will continue to apply to these crops until January 1, 1956. Hence the old parity standard will be used in setting loan rates for 1955 crops, but new parity will be available for use (and, so far as the letter of existing law is concerned, must be used) in setting loan rates for 1956 crops of these four commodities.

Minimum Price Support Percentages. If no new legislation is passed in 1954, the minimum price support schedules of the Agricultural Act of 1949 will be available for use with respect to 1955 crops. In view of the very large carry-overs in prospect at the beginning of the 1955 crop year, wheat prices could then be supported at as low as 75 per cent of parity, cotton prices at as low as 80 per cent, and corn prices at about 85 per cent. Hence, in spite of the fact that old parity would continue to prevail for these crops in 1955, support prices for the 1955 crops *could* be reduced by about 15, 10, and 5 per cent of parity respectively. (However, the Secretary of Agriculture would have discretionary power under the 1949 act to support prices above these minimum levels and could moderate this transition if it seemed desirable to do so.)

The combination of these possible drops in parity percentages in 1955, followed by an abrupt shift to the new parity standard in 1956, is a serious matter to producers of the commodities affected

and one in which legislators concerned with the stability of both the farm and the general economy are keenly interested. This has been recognized in the President's farm program, which provides two major features intended to assure a smooth transition. The first of these is that parity prices of the four crops would be reduced by only 5 per cent a year, beginning in 1956, until the new parity level is reached. Cotton would move to the new parity standard in 1956. Corn would be practically there in 1957. Wheat would reach new parity in 1958, and peanuts in 1959.

The second major feature of the President's farm program is a $2.5 billion set-aside, including 400 to 500 million bushels of wheat, 3 to 4 million bales of cotton, and possibly certain other products. The quantities of wheat and cotton set aside would be excluded from actual supplies of these commodities in computing the supply percentages upon which minimum support prices are based. If we assume average yields of wheat and cotton in 1954, this leads to minimum support percentages for wheat of 80 to 85 per cent of parity and for cotton of 82 to 86 per cent of parity in 1955.[15] Quantities in the set-aside are to be disposed of outside of normal commercial channels if possible; they can be released into normal channels only if market prices exceed 105 per cent of parity. It is expected that the set-aside provision will also help to strengthen market prices of wheat and cotton and keep them closer to the loan rates.

However, the set-aside quantities of wheat and cotton would continue to be counted in the total supplies of these commodities for purposes of determining marketing quotas. Given average yields each year over the next three or four years, the President's farm program, as well as the program now in existence, would likely call for marketing quotas on wheat through 1957 and cotton through 1956. This would probably be true also under the Agricultural Act of 1949.

The effects of these various possible transitions can be summarized briefly. *The minimum provisions of the Agricultural Act of 1949* would reduce farm income (centering on January 1956) by about $.4 billion on the five basic cash crops (cotton, wheat, tobacco, peanuts, and rice) as compared with the program now in operation. Cash receipts from sales of corn and other feed grains might

[15] These percentages depend also upon estimated utilization of wheat and cotton during the 1954 and 1955 crop years and upon the levels of marketing quotas announced for 1955 crops.

drop slightly—probably not more than $.1 billion. The drop in corn loan rates to around 85 per cent of parity would have some slight effects on livestock production and prices later in the crop year. The net further cash income reduction in the 1956 crop year, compared with the present program including old parity, might be around $.25 billion, with another $.1 or .2 billion showing up on livestock products in 1957.

The President's farm program would result in price supports for cotton, wheat, and corn averaging perhaps 5 to 7 per cent below the present level in 1955 and perhaps 7 or 8 per cent lower than the present level in 1956. The margin is likely to average little or no greater than this in 1957 and later years. Thus, as compared with an extension of the present price support program for basic crops, the President's farm program might involve drops in farm income on the order of $.2 billion in 1955 and perhaps another $.2 billion in 1956. This level might be approximately maintained in the year or two immediately following. Compared with the effects of a severe economic recession, which in the absence of farm price supports could involve as much as $5 or 6 billion of cash farm income, the magnitudes involved in a shift from the existing program to the President's farm program are almost negligible.

It cannot be denied, however, that either the President's program or the Agricultural Act of 1949 would lead to significant reductions in the level of cash farm income from wheat. The effects on cash income from cotton and from feed grains and livestock products would be small—perhaps almost negligible.

As compared with the present program, an abrupt shift to the Agricultural Act of 1949, which is now (May 1954) on the books for application to 1955 and later crops, could result in additional successive impacts in the autumns of 1955 and 1956 of at most half a billion dollars each year. The impacts would be most severe in the specialized wheat areas and would pose serious readjustment problems for wheat producers. However, the consequences for the rest of the economy could scarcely exceed a reduction of $1 billion or thereabouts at the GNP or disposable income level.

The coincidence of such a transition with the onset of a recession might lead some lay economists to argue that the transition caused the recession. However, on the basis of the models and arguments presented here, this is a much heavier burden than a change in the farm price support program will bear. Its initial effects would do very little to aggravate a recession already under way, and its consequences, except for producers of the crops directly affected, would

speedily be lost sight of if forces originating in the nonfarm sectors of the economy were sufficient to carry the recession to any considerable depth.

COMMENT

JAMES T. BONNEN, Harvard University *

To my knowledge, this is the first *quantitative* attempt to evaluate directly the impact of an agricultural price support program on the whole economy. It is a pioneer effort, and Fox has a significant and most thoughtful paper. In particular it is interesting methodologically. I do question, however, whether the quantitative results of the model actually support his conclusion that the present agricultural price support program would lift GNP by 8 per cent in the depths of his hypothetical depression. Fox's models are expressed in money terms with no adjustment for price level changes. It is not possible to extract a general price level index from the data, but Fox does calculate a "consumer price index." Deflating "personal disposable income" by this index brings one to the conclusion that "real" disposable income would be higher if one eliminated all agricultural price support programs (when presumably these programs are financed out of a deficit). The implication for aggregate demand and GNP are clear. To be more specific, in Table 11 of the paper, at the depth of the hypothetical depression, "total disposable personal income" was $208 billion under the present support program and $204 billion with no program, resulting in a difference of $4 billion added to demand by the support program. However, in the same table there is a consumer price index which, in the trough of the depression, is estimated at 106 under the present system of support prices and at 103 with no supports at all. Deflating the income figures by the relevant index number, one gets a "real" disposable personal income of $196.2 billion with the current support program operating, but an income of $198 billion with no support program! According to this calculation, the net effect of the present price support program was to reduce "real" disposable income by $1.8 billion. Fox will admit that this is an unexpected quantitative conclusion and will perhaps concur in the opinion that this result is due to the structural relationships which he posits and perhaps more particularly to one or two of the im-

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plicit "path-multipliers" which we can all admit are elusive creatures at best.

Much of Fox's *structural* data comes from work done in the old Bureau of Agricultural Economics in connection with the Inter-industry Relations Study of the Bureau of Labor Statistics. This study employs W. W. Leontief's input-output technique of general equilibrium analysis. Fox has done a good job of adapting this data for his use here, but I believe we should be under no illusions as to the limitations to a *more extensive use* of this type of analytical tool in business cycle investigations and in any specific attempt, such as we have here, to evaluate the effect of price level changes on aggregate demand. I hasten to add that Fox has not become involved in these difficulties. He has used the input-output framework in the only way in which I think it can be applied at its present state of development—that is, to provide *descriptive* and *partial* structural information which is otherwise unobtainable. Briefly, there seems to me to be three facts from which most difficulties arise. (1) The simple static model assumes a fixed input structure (the input-output equations can be said to be linear and homogeneous), which of course means that the "law of diminishing returns" does not apply (i.e. we have constant costs). (2) There is a unique or fixed demand and consumption structure given by the input-output table. There are no substitution possibilities in any realistic sense and consequently no meaningful explanation of consumption or producers' demand. Any attempt to explain changes in demand within the model would necessitate introducing "households" into the structural matrix, taking it out of the "bill of goods." If no additional changes are made, the income elasticity of demand for each commodity turns out to be unit elasticity—an unusual situation, to say the least, with the resulting calculations of induced demand becoming extremely unrealistic. Given the unreal results of the static model, if any accelerator action is added in, as it must be in the dynamic model, estimates of induced demand would likely be preposterous. It is necessary to provide leakage for the system on a fairly arbitrary and large scale before the answers become realistic. (3) The final fact is that the structure of payments for the factors of production is also fixed. Consequently, relative prices and wage rates are assumed to remain the same. It is to be noted also that the absolute level of all prices has no meaning in the system.

A dynamic model is necessary if one is to handle either a complete cycle or the phase of falling aggregate demand. In other words, one must introduce, in addition to the structure of product flows,

a set of structural equations for the stocks of the economy (the inventories and fixed assets). The static model will function properly only under conditions where no problems of idle stocks or disinvestment are to be met. The use of stocks in the system introduces an accelerator action with all of the attendant difficulties of handling the necessary "leaks" and "feedbacks" so that the system will converge at a reasonable level. The usual dynamic input-output model is nonlinear in the sense of being irreversible, so that the same model cannot be used to handle the ups as well as the downs of the cycle without extensive or clumsy additional assumptions—and then I doubt if it is possible to build a model which can move *continuously* from the phase of positive accumulation to that of idle stock. Probably the most important thing to realize is that construction of a model of falling aggregate demand is far more difficult, both empirically and in theory, than building one of rising aggregate demand. Input-output analysis appears to provide no practical way of integrating a theory of money into its system; it assumes a constant interest rate and deals only in "real" terms. Even when, by operating on the system from the outside, shifts in prices are achieved, relative statements are all that can be obtained from the model, and a shift in the absolute level of one or all prices has no operational meaning.

I wish to point out again that Fox has not become involved in these difficulties. But it should be clear that any attempt to apply input-output analysis to price-demand or business cycle problems in a rigorous fashion, either as a closed-static or an open-dynamic system, is at best a dubious and difficult procedure.

Fox indicates that the farm price support program in 1953 directly involved commodities accounting for only 45 per cent of total cash receipts to agriculture. From the point of view of depression policy this is an important feature of the current support program. While it is undoubtedly true, as Fox's model indicates, that average farm income is increased by the support program, the case is not so straightforward as it might appear at first. In a situation in which, for example, a dozen commodities are selling below parity prices in a free market and only half have parity supports, the prices of the unsupported commodities might easily be adversely affected. This would seem most likely to be the case if the supported commodities have a greater elasticity of demand than the nonsupported ones. Historically, we can note that at no time have all of the commodities selling below parity been supported in the market at the same instant. Note, too, that those commodities

most often supported have been products like wheat, corn, and cotton, for which demand is rather inelastic. *Conceivably,* in a general depression it might cost less per dollar of induced demand to support all farm products than to support just a limited number, as we tend to do at present.

The starting point from which comparisons of alternative models are made deserves some comment. The results of the comparisons of different policies depend not only on the nature of the policies themselves but also upon the condition of the economy or model at the time at which the policy is applied. For example, the situation in which agriculture finds itself today is quite different from that of the late twenties, preceding the Great Depression. Although real net farm income fell by about one-third between 1947 and 1953, agriculture's financial liquidity remains so much greater today than in the twenties that in all likelihood, if the same price policy had been implemented during the late twenties and were implemented at present, the reaction of the farmer and the effects on aggregate demand would be very different. Also, the fact that many of the present-day farmers experienced the depression of the thirties and still remember it quite vividly will condition the manner in which they react to various policies. All of this is related to the consideration we must give to the impact that different farm policies have upon the expectations of the various sectors of the economy. One cannot very readily introduce expectations into a model, but for policy planning purposes, where the goal is the maintenance of aggregate demand, some evaluation must be made of the effect of the policy via expectations upon demand. Forward pricing, perhaps, is a good example of how some expectations can be fairly successfully structured for planning purposes.

Let us consider the production control measures which operate under the present law and which Fox had to take into consideration in his evaluation of the price support program. Despite all of the hullabaloo over "conservation" and "production adjustments," the primary purpose of production control measures is price support. In fact, it would seem that depression conditions would be the poorest of times to attempt production adjustments. Since the demand for all products is falling, increasing the production of one commodity by reducing that of another only shifts the price support problem from one product to another. This is another reason for placing the emphasis of depression price policy upon the expansion of over-all demand and upon maintaining output in all lines of production.

Consider too that, although there is a storage program, the present price support system operates to a significant extent through raising prices and curtailing output in a severe depression, such as Fox has set up. It is difficult to know to what extent this means that the increase in farm demand for industrial production is offset by the decline in nonfarm demand due to a relative increase in the cost of living. It is reasonable to expect that the use of a different support technique, such as compensatory price payments, would have a greater impact on aggregate demand. Indeed, Fox's model indicates this, although it would increase the total cost of the support program. It was a little surprising to find the cost as high as Fox's model indicates, although he may be quite right. It would still seem to be a debatable point quantitatively.

Ultimately, in any over-all policy consideration, the economist must answer a quantitatively difficult and fundamental question not within the scope of Fox's paper. That question is: At what point will government expenditures in farm programs provide less of an increase in aggregate demand than would be returned if the expenditures were made on the nonfarm sector? Of course, economic questions as to marginal rates of return are, in actual policy planning, radically altered and also blurred by political and social factors.

An evaluation of the *long-run* impact of agricultural price support programs on the rest of the economy is outside the scope of Fox's paper. But it should be mentioned that the possible methods for ultimate financing of the price support program can have quite varied effects on the economy, and the choice should always be a serious policy consideration.

A chronically neglected problem of agriculture which none of these alternative programs ever faces is agricultural poverty. This is bad enough in periods of general prosperity, not to speak of severe depressions. None of the programs under present consideration will have any effective impact on the extremely low incomes of about 2 million American farm families.

I should like to suggest in conclusion the possibility that programs which succeed in adding to the stability of the economic system may also lower the average level at which the economy operates or retard the rate of economic progress. Also, conversely, a higher average level of activity may be gained only at the cost of greater instability. Any potential policy maker should also be aware of the well-established fact (often ignored in policy discussions) that general depressions are not caused by agricultural difficulties and that the only manner in which effective income stability and progress

can be maintained in agriculture is by seeing to it that the rest of the economy is stable and economically progressive.

These comments, I believe, bring up matters which must be seriously considered in the determination of any depression policy for agriculture or the economy in general. I should like to add that Fox has presented one of the most complete models I have ever seen constructed for the purpose of analyzing the internal relationships of one sector of the economy to the total. It is a significant example of his obvious ability and long experience in handling economic statistics.

Reply by Fox

Early in his discussion Bonnen raises a point which, while not surprising, was certainly not brought out in my paper. When he deflates the disposable personal income figures in the last column of Table 11 by the corresponding consumer price indexes, he obtains a "real" disposable income $1.8 billion (about .9 per cent) *lower* with the price support program than without it! I would not attach much importance to the direction of this difference, as it is almost within the range of rounding errors—the consumer price index is recorded only to the nearest 1 per cent. But there are reasons for believing that the "present price support program" described in my paper may be no more than neutral in its effects on aggregate output and employment.

First, the program reduces farm output. In my model this reduction (as of January, third recession year) amounts to at least .5 billion 1954 dollars. Second, as commercial demand is less than unit elastic, domestic users pay a larger dollar amount (roughly 1 billion 1954 dollars) for a reduced supply of farm products. This, in itself, would tend to deflect some purchasing power away from nonfarm goods and services and to reduce nonfarm employment. These two effects should be approximately offset, but perhaps no more than offset, by larger purchases on the part of farm families, whose net incomes were estimated to be $2 billion higher (as of January, third recession year) with the program than without it.

The apparent neutrality of the price support program with respect to total output and employment raises a number of questions. If the program reduces the drift in nonfarm prices and wage rates, does it slow down inventory liquidation and help to maintain business investment? This seems plausible, but I believe it would be extremely difficult to quantify these effects. Second, in formulat-

ing the objectives of countercyclical policy, how much weight should be given to price stability as such, both farm and nonfarm? Price deflation increases the real burden of all obligations which were fixed in money terms before the onset of recession, and there is a widespread impression that falling prices are viewed with great concern by the business community. Certainly the severity of price dislocations and cost-price squeezes tends to increase with the speed and amplitude of general price deflation.

Perhaps it is enough that farm price supports, viewed as short-term defenses against recession, substantially increase the purchasing power of farmers even though their effects on aggregate non-farm employment may be negligible. In the absence of public intervention, agriculture responds to recession by reducing prices, and industry (to a large extent) by reducing output and employment. Public policy has been directed toward stabilizing prices in agriculture and employment in other sectors. The respective approaches have a simple and direct appeal, and it would be difficult to prove that either of them is wrong.

I should like to correct one of Bonnen's statements. I did not conclude that the present price support program "would lift GNP by 8 per cent." I said that it would, in my model, reduce the *decline* in GNP by 8 per cent. The magnitude involved, about $6 billion, is only 2 per cent of the *level* of GNP.

The argument for Bonnen's hypothesis that prices of unsupported commodities may be adversely affected by the existence of price supports on other commodities is not clear to me, perhaps because some of his assumptions are not stated. In actual practice, price supports *as such* have generally tended to raise the prices of other farm products rather than to lower them. *Acreage restrictions* on price-supported commodities, unless accompanied by tight controls over the use of the acres diverted, may lead to increased production of *unrestricted* commodities and thus to lower prices for such of these as are not supported and as do not compete in demand with price-supported commodities. But this effect is based on acreage restrictions and elasticities of supply, whereas Bonnen seems to base his argument exclusively on elasticities of demand.

The rest of Bonnen's points are well taken, in my opinion. Price support programs are not set up exclusively or even primarily as countercyclical devices. In a broader context, such programs might also be appraised in terms of their effects on the rate of technological advance in agriculture, on the efficiency of resource use within agriculture and the mobility of resources between agriculture and

other sectors, on international trade and political relations, on the long-run growth of the economy, and on the short-run expansibility of agriculture to meet emergency needs. I believe that a strong and moderately flexible price support program will make a positive contribution to most of these objectives, and that some negative aspects of the present program can be better corrected by modification than by abandonment of price supports. But these questions are beyond the scope of my paper.