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# Agricultural Economics Research

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# Shifting Direct Government Payments from Agriculture to Poor People: Impacts on Food Consumption and Farm Income

By Alvin C. Egbert and Stephen J. Hiemstra

Some people currently assert or imply that if we had a national jobs-for-all program and minimum guaranteed incomes so that no one fell below the poverty line, the increased demand for food and fiber products would absorb our full cropland capacity to produce, and farmers would get parity of income through satisfactory prices.

It follows from this proposition, they go on to say, that the \$3 billion or so annually paid to farmers "not to grow anything"<sup>1</sup> ought to be transferred to the poor as buying power for food and fiber products, and if this amount is not sufficient it should be supplemented by enough more public money to achieve freedom from hunger, which would certainly result in absorbing cropland capacity with good farm prices and income.

These propositions raise the following questions: (1) If the \$3 billion now paid to farmers were spent for food by the poor: (a) how far would it go toward raising their nutritional intakes to acceptable standards, (b) how far would it go toward absorbing cropland capacity, and (c) how would it affect gross and net farm incomes; and (2) how much new buying power at the retail markets would be needed to put \$3 billion back into net farm income.

This paper summarizes an analysis of these questions.

<sup>1</sup> In reality, this total includes price support, conservation, sugar, and wool payments as well as cropland diversion payments.

## Basic Assumptions and Procedures

(1) Payments now made to farmers to divert cropland and otherwise support or supplement agricultural prices would be discontinued. These funds would be transferred to people living in poverty, together with any additional funds needed to achieve program goals.

(2) Programs would be directed toward the people living below the poverty line, which included 30 million people in 1967 when poverty was defined as a nonfarm family of four receiving an income of less than \$3,335.

(3) The 1965 Household Food Consumption Survey provided data for estimating increases in demand for food at different income levels. The estimated income elasticity of demand for food is 0.1 for households with incomes below \$3,000 and 0.35 for those with incomes above \$3,000.

(4) Both income supplement and food stamp programs were evaluated as means for improving the diets of poor people and expanding the demand for farm products.

(5) The following food consumption alternatives were analyzed: Food consumption patterns of low-income households were assumed changed to food consumption patterns of average households with (a) incomes between \$3,000 and \$5,000, (b) incomes above \$3,000, and (c) incomes between \$7,000 and \$10,000. These groups, of course, are not mutually exclusive but fit a range of policy alternatives.



## Expenditures Required for Target Food Consumption Patterns

### INCOME SUPPLEMENT PROGRAMS

The analysis showed that large increases in income would result in only small increases in total consumption of food if there were no restrictions on how the additional income could be spent by low-income families (table 1). An increase in income of \$14 billion would be required to raise their food expenditures by \$1.4 billion. This amount of increase in food expenditures would raise food consumption patterns of the low-income group to that of the \$3,000-\$5,000 group.

An income increase of about \$19 billion would be needed to raise the consumption pattern of the low-income families to that of all families with incomes above \$3,000. With this income supplement, food expenditures are estimated to increase around \$3.3 billion. This estimate as-

sumes that when food consumption of the low-income families is raised beyond the consumption level of the \$3,000-\$5,000 families the income elasticity of demand increases from 0.1 to 0.35.<sup>2</sup>

<sup>2</sup> Analysis of data from the 1965 Household Food Consumption Survey shows that income elasticities of demand vary significantly by level of money income. Households with annual incomes below \$4,000 yielded income elasticities of 0.08 to 0.13, per capita expenditure basis, depending on the aggregation of food expenditures used. Households with incomes between \$4,000 and \$8,000 yielded elasticities of 0.3 to 0.5, and those with incomes above \$8,000, 0.2 to 0.4. These estimates are based on group averages and means of income ranges with no adjustment for changes in composition of family over income levels. Despite the small increase in food expenditures to incremental changes in levels of income for the low-income group, this group spent a larger share of its income for food than the other two groups. The lowest of the three income groups spent 42 percent of its income (money income plus the value of food not bought) for food compared with 25 percent for the middle-income group and 14 percent for the highest income group.

Table 1.--Estimated income supplements and food expenditure increases required to raise food consumption patterns of low-income families to three levels

Item	Food consumption levels <sup>1</sup>		
	(1) Families with \$3,000 to \$5,000 incomes	(2) Families with incomes over \$3,000	(3) Families with \$7,000 to \$10,000 incomes
	----- <i>Billion dollars</i> -----		
Total income supplement.....	14.0	19.4	21.7
Increase in food expenditures.....	1.4	3.3	4.1
	----- <i>Percent</i> -----		
Percentage increase in food expenditures.....	8	15	17

<sup>1</sup>Based on food consumption patterns as measured by the 1965 Household Food Consumption Survey and an assumed income elasticity of demand for food (per capita expenditure basis) of about 0.1 when households with incomes below \$3,000 adjust their consumption pattern to that of the \$3,000-\$5,000 income group and an elasticity of 0.35 when the low-income group increases its expenditures beyond the level of consumption of the \$3,000-\$5,000 group. For example, the package of foods consumed by the families in the \$3,000-\$5,000 income group was valued at \$1.4 billion more than the food consumed by the under-\$3,000 group when multiplied by the number of low-income families involved. The elasticity of 0.1 implies expenditures of 10 times this amount or \$14 billion in adjusting the consumption pattern. This pattern represented an increase of 8 percent in expenditures by the low-income group.

An income supplement of about \$22 billion would be required to raise low-income family consumption patterns to those of the \$7,000-\$10,000 group.

These income supplements, most will agree, are large and even the minimum income supplement of \$14 billion does not appear to be a reasonable alternative at the present time.

## FOOD STAMP PROGRAM

One possible method of improving food consumption patterns appears to be a greatly expanded Food Stamp Program. In other words, all income supplements would be made in the form of food stamps. Even a Food Stamp Program expanded by \$3.3 billion may not be feasible because it assumes some 30 million people would be enrolled. Many of the people currently eligible are not now participating in the Food Stamp Program. But many of the persons classified by the Office of Economic Opportunity as below the poverty index are not now eligible for the program because the Food Stamp Act requires income standards to be consistent with those now used by each State in administering its public assistance program. Of course, eligibility criteria could be changed. Nevertheless, the analyses in the remainder of this paper are based on an assumed food stamp type of program.

Under such a program, the income supplement can be assumed to be about the same as the required increase in food expenditures (line 2, table 1). Under the existing program, participating families are required to contribute an amount approximately equal to their previous food expenditures. Thus, program costs represent additional spending for food. Nevertheless, some "slippage" can be expected because of the necessity to induce participation in the program.

## Food Consumption Patterns

The changes in food consumption patterns underlying changes in food expenditures shown in table 1 are presented in table 2 in terms of values of farm products. The consumption of

beef would increase most. The consumption of all other livestock products, except for eggs, would also increase. Of the crops, consumption of food grains, feed grains as food, and dry peas and beans would decline.

## Nutritional Levels

Standards of good nutrition are only loosely associated with levels of household income. According to the 1965 Household Food Consumption Survey, 36 percent of the households with incomes below \$3,000 had diets that fell below two-thirds of the National Research Council's recommended allowances for one or more nutrients (considered a critical level by some nutritionists). The percentage declined to 24 percent for the \$3,000-\$5,000 income group and to 12 percent for the \$7,000-\$10,000 income group.

If the low-income households adjust their consumption patterns to those of higher income groups when their incomes are raised, as assumed above, nutritional levels would be raised accordingly. Certainly hunger (the prolonged shortage of calories) would be alleviated at all higher income levels. However, a significant proportion of diets would continue to fall below the full NRC recommendations for nutritional adequacy because of personal choice, lack of complete information, and variation in personal needs not adequately reflected in the recommended nutritional standards.

## LIMITATIONS OF CONSUMPTION ESTIMATES

The preceding consumption estimates, based on cross-section data, assume that the low-income households would adjust their consumption patterns in line with existing households currently with higher incomes. Because of the makeup of the population of low-income households, such an assumption may be tenuous. At a minimum, it assumes a process of long-run adjustment of tastes and habits. The low-income families have a much larger proportion of one-person households, older people, and nonwhites than the U.S. average. In the 1965 survey, the average size of household for the below-\$3,000



Table 2.--Estimated changes in food consumption required to raise food consumption patterns of low-income families to three levels

[1957-59 farm prices]

Item	Food consumption levels <sup>1</sup>		
	(1) Families with \$3,000 to \$5,000 incomes	(2) Families with incomes over \$3,000	(3) Families with \$7,000 to \$10,000 incomes
	----- Million dollars -----		
Cattle and calves.....	193	378	464
Hogs.....	39	36	32
Chicken.....	12	5	-3
Turkey.....	4	2	-1
Eggs.....	-8	-17	-30
Milk.....	65	135	170
<b>Total livestock.....</b>	<b>305</b>	<b>539</b>	<b>632</b>
Food grains.....	-13	-28	-32
Feed grains.....	-3	-7	-8
Fruit.....	11	39	48
Tree nuts.....	5	7	8
Potatoes, sweetpotatoes.....	12	13	16
Dry beans and peas.....	-4	-11	-14
Other vegetables.....	13	39	47
Soybeans.....	3	5	6
Peanuts.....	8	12	14
Other major oils.....	1	1	1
Sugar.....	3	2	1
<b>Total crops.....</b>	<b>36</b>	<b>72</b>	<b>87</b>
<b>Total, all commodities.....</b>	<b>341</b>	<b>611</b>	<b>719</b>
	----- Percent -----		
Increase in consumption of: <sup>2</sup>			
Total food.....	1.2	2.1	2.5
Livestock and products.....	1.5	2.7	3.2
Crop products.....	.4	.8	1.0

<sup>1</sup>Direct use only.

<sup>2</sup>Supply and utilization index basis, see Stephen J. Hiemstra, Food Consumption, Prices and Expenditures, Agricultural Economics Report No. 138, p. 160-162.

income group was 2.6 persons and 37 percent of the group were over 55 years old--compared with 3.3 persons and 17 percent over 55, for the U.S. average.

Finally, these changes in consumption were based on the assumption that changes in prices

would not accompany the change in quantities consumed. This assumption certainly would not hold for most of the commodities in the short run, nor would it hold for all commodities in the long run. In the long run, prices depend on the response of food supplies to both the

changes in prices and commodity programs. These factors are analyzed in a following section.

## Estimated Effects of Food Programs at the Farm

### DEMAND FOR FOOD AT THE FARM

The estimated changes in food consumption would have only small effects on the total demand for farm output. The increase in demand at the farm would be a little over 1 percent for the lowest consumption alternative and about 2.5 percent for the highest (table 2). The comparable figures on a net farm output basis (total production less feed and seed used) are fractionally less.

### FARM OUTPUT AND PRICES

The effects of consumption changes on farm output and prices depend on the supply response relative to the shift in demand or consumption change.

Currently farmers are diverting 50 to 60 million acres of cropland for which they receive direct payments of about \$3 billion. If these payments were discontinued, as assumed, most of this land would be returned to production, even without price supports. The question then is: What impact would this increase in crop output have on livestock output and how would these increases relate to the estimated increases in demand resulting from an expanded food program?

To examine the possible impacts of food programs on farm supplies, prices, and incomes, we first look at the feed-livestock sector and consider only the second food program alternative (table 2).

The "effective demand" for livestock products is estimated to increase by approximately 2.7 percent. In the very short run, production of livestock products cannot be increased much. Thus, the increase in demand would be largely offset by higher prices. In other words, prices

would "absorb" the increase in demand. People receiving income supplements would be consuming more, but others would be consuming less. Assuming a price elasticity of demand for livestock at the farm of 0.35,<sup>3</sup> the 2.7 percent increase in demand would result in a 7 to 8 percent increase in livestock prices.

Higher livestock prices would stimulate livestock production over the longer run. Moreover, with no acreage diversion programs, total feed grain production is estimated to increase about 30 percent. This increase in total production is equal to about 38 percent of current domestic feed grain consumption. In the short run, a 4 percent decline in feed grain prices is required to increase domestic feed consumption about one percent. On the basis of this relationship, the additional feed grains would not be fed at any price. However, at very low prices the elasticity is probably higher. Also, much of the increased output probably would be held as stocks. Nevertheless, prices would be extremely low.

Over the long run, lower feed prices and expanded feed supplies would result in a significant expansion in livestock output and, consequently, livestock prices would fall. Livestock production would need to expand by about 25 percent above the 1967 level to use the additional production of feed grains and other feed crops from diverted cropland. Of this 25 percent increase in livestock production, a market would have to be found for 22 percent--food programs would absorb about 3 percent. Assuming a price flexibility of demand of 3.0, this increase implies that livestock prices would fall by over 60 percent.

These conclusions are largely hypothetical. In reality, at the low prices cited, part of the increases in feed and livestock would not occur. The conclusions, however, highlight the magnitude of the potential output in U.S. agriculture.

A recent study--which looked at the long-term impacts of no farm programs--concluded that over the long run feed grain prices would

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<sup>3</sup> Various statistical analyses indicated the range to be from 0.4 to 0.3.



fall about 34 percent.<sup>4</sup> Lower domestic feed grain prices, the study reasonably assumed, would have resulted in larger exports, which would have taken some pressure off domestic feed prices. But even this feed price decline would have resulted in a 6 to 7 percent increase in livestock supplies and a 20 percent decline in livestock prices. However, if demand were expanded by food programs as assumed here, livestock prices probably would decline less--perhaps around 15 percent.

Effective demand for food crops is estimated to increase only 0.8 percent under food program (2) in table 2. However, the demands for dry beans and peas and grains for food all decline. These are crops for which excess capacity and production control programs exist. Thus, expanded food programs would have a detrimental rather than helpful effect on producers of these crops. Although the decrease in demand represents only 1 percent of food grain production, it represents about 7 percent of dry bean and pea production. Demand for fruits and vegetables would increase, however. These crops usually have not been plagued by chronic overproduction.

In the short run, output of some crops, especially fruits, would not respond to the stronger demand and only prices would increase. The poor people would be consuming more of these crops but not as much as indicated in table 2. Other people not receiving any income supplement would be consuming less.

Over the longer run, output of these crops likely would expand as much as demand. Prices probably would not change much and consumption would be up around the full amount given in table 2.

This analysis, although piecemeal, leads us to the clear conclusion, which is certainly not new, that the most optimistic food consumption expansion programs would not go very far in absorbing the total productive capacity of U.S.

agriculture and in maintaining reasonable prices and incomes of farmers.

## FARM INCOME CHANGES

The estimated effects of increased food expenditures of \$3.3 billion on farm prices and income were determined by employing the following assumptions: (1) Livestock production increases as much as the estimated increase in demand (table 2); (2) feed grain programs are structured so that feed prices fall only to a level needed to encourage livestock production increases equal to the estimated increases in demand; (3) the feed grain price elasticity of supply with respect to livestock output is  $-0.2$ ; and (4) supplies of other products will adjust to the changes in demand and, on balance, prices will be unchanged.

To achieve a 2.7 percent increase in livestock output, feed grain prices would have to decrease by about 13.5 percent. For this livestock increase, feed grain acreage would need to be expanded only 4 million acres. Consequently, about 31 million acres would still need to be diverted (diversion was about 35 million acres in 1968) and substantial program payments to farmers would continue to be needed to support feed prices, even at the lower level.

Under the above assumptions, only small changes in cash receipts and income result from the assumed increase in the consumption of food (tables 3 and 4). Total cash receipts decline slightly. Larger cash receipts for all livestock products except eggs, and for fruits, vegetables, vegetable oils, and a few minor crops, are more than offset by smaller cash receipts for feed crops. Cash receipts from feed crops decline because prices decline relatively more than marketings increase.

Operators' realized net income is estimated to improve a little, even though cash receipts would be down slightly. This occurs because direct payments to farmers would be down only \$150 million and more than compensated by lower production expenses--due to lower feed prices.

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<sup>4</sup> Estimates of Farm Production, Prices and Income, 1961-67, in the Absence of Farm Programs, U.S. Dept. Agr., Econ. Res. Serv., April 23, 1968, 4 p.



Table 3.--Actual and estimated cash receipts, with \$3.3 billion increase in food program, 1967

Item	Cash receipts 1967	Percentage change in production-- new programs	Assumed percentage change in price at farm	Estimated cash receipts 1967 <sup>1</sup>
	<i>Mil. dol.</i>	<i>Pct.</i>	<i>Pct.</i>	<i>Mil. dol.</i>
Cattle and calves.....	10,539	4.91	0	11,056
Hogs.....	3,776	.99	0	3,813
Sheep and lamb.....	299	.00	0	299
Chicken.....	1,314	.28	0	1,317
Turkey.....	459	.36	0	460
Eggs.....	1,777	-.83	0	1,762
Milk.....	5,756	2.79	0	5,917
Other livestock.....	445	.00	0	455
<b>Total.....</b>	<b>24,365</b>	<b>--</b>	<b>--</b>	<b>25,069</b>
Food grains.....	2,531	-.86	0	2,509
Feed grains.....	3,727	1.92	-13.5	3,286
Fruit )	1,700	2.84	0	1,748
Tree nuts )				
Potatoes, etc. )	2,627	1.50	0	2,666
Dry beans and peas )				
Other vegetables )				
Soybeans.....	2,432	1.56	-13.5	2,136
Peanuts.....	279	.47	0	280
Other oils.....	63	.51	0	63
Sugar.....	386	.08	0	386
Hay.....	578	2.76	-13.5	513
Tobacco.....	1,392	.00	0	1,392
Cotton.....	1,107	.00	0	1,107
Seed.....	99	.00	0	99
All other crops.....	1,299	.00	0	1,299
<b>Total.....</b>	<b>18,220</b>	<b>--</b>	<b>--</b>	<b>17,484</b>
<b>Total, all commodities.....</b>	<b>42,585</b>	<b>--</b>	<b>--</b>	<b>42,553</b>

<sup>1</sup>Actual receipts adjusted for production and price changes.

### Food Consumption to Maintain Farm Income

The question, "How much new buying power at retail markets would be needed to get \$3 billion back in net farm income?", remains to be analyzed. We approach this question by assuming first that prices received by farmers do not change.

Using 1967 as a base, total farm output and marketings would have to increase over 20 percent to hold net farm income at the \$14.2 billion received in 1967 (table 5). An increase of this amount is needed because additional inputs and expenses are required to bring forth the additional output. This increase in output would have to be absorbed by a comparable increase in demand for food at retail.

Table 4.--Actual net income and estimated net income with \$3.3 billion increase in food program, 1967

[48 States]

Item	1967 actual	1967 estimated
	<i>Million dollars</i>	<i>Million dollars</i>
Cash receipts:		
Crops.....	18,220	17,484
Livestock.....	24,365	25,069
Total.....	42,585	42,553
Value of home consumption	744	744
Rental value.....	2,441	2,441
Government payments.....	3,070	2,920
Realized gross.....	48,840	48,658
Expenses.....	34,682	34,330
Operators' realized net..	14,158	14,328

On the basis of historical relationships, a 20 percent increase in farm output implies that domestic food consumption would need to increase 26 percent. Although consumer expen-

ditures for food historically have risen faster than food consumption, we assumed that a 1 percent increase in food expenditures at retail in constant prices would accompany a 1 percent increase in demand for farm food products. This increase in terms of consumer food expenditures would amount to about \$25 billion above that spent in 1967 and about \$21 billion in addition to the highest expenditure increase considered in the above analysis of food programs.

This route to higher farm incomes appears quite unreasonable. It would cost too much. It is worth noting, however, that the \$25 billion increase in food consumption at retail would be required to use up potential feed supplies. These feed supplies, as noted, would provide for about a 25 percent increase in livestock output.

It does not appear to be feasible to eliminate direct payments to farmers and to maintain farm income through the market unless prices are raised. But prices cannot be raised by expanding demand alone. Production would still need to be constrained, even with optimistic and large increases in food consumption.

Table 5.--Estimated changes in food expenditures and farm output needed to replace Government payments to farmers

Item	1967	Percentage change <sup>1</sup>	Estimated 1967
	<i>Bil. dol.</i>	<i>Percent</i>	<i>Bil. dol.</i>
Food expenditures <sup>2</sup> .....	94.9	26.0	119.6
Total food consumption <sup>3</sup> .....	28.8	26.0	36.3
Food from domestic sources <sup>3</sup> .....	25.3	26.0	31.9
Gross farm output <sup>3</sup> .....	43.4	20.6	52.3
Cash receipts.....	42.8	20.6	51.6
Expenses.....	34.8	16.5	40.5
Net income from receipts.....	8.0	39.2	11.1
Rental value of dwelling and home consumption....	3.1	---	3.1
Net income.....	11.1	27.9	14.2
Government payments.....	3.1	-100.0	---
Realized net income.....	14.2	---	14.2

<sup>1</sup> Assumes no changes in prices. <sup>2</sup> Consumer expenditures, U.S. Department of Commerce.

<sup>3</sup> Valued using 1957-59 prices received by farmers, Supply and Utilization Index.



## Summary and Conclusion

Again and again someone proposes income supplements to poor people in the United States as a way of solving the farm problem. At first glance, this proposal sounds reasonable and, of course, it is humanitarian. But invariably the conclusion is the same: The unsatisfied demand for food in the United States is much less than agriculture's capacity to produce.

The analysis supporting the results presented in this paper is admittedly crude. However, in a qualitative sense, we believe the following conclusions are valid.

An income supplement of approximately \$20 billion would be needed to increase food expenditures of the poor by \$3.3 billion (roughly the amount of direct Government payments received by farmers in 1967) if the income recipients were allowed to spend their income at will. On the other hand, if the Food Stamp Program funds were increased by \$3.3 billion, most of this presumably would result in increased expenditures for food as the program is now operated.

An increase of \$3.3 billion in food expenditures represents less than 2 percent in food consumption and total farm output as of 1967. This 2 percent increase in farm output would still leave a large part of agriculture's productive capacity unused. Potential feed concentrate supplies could support, if forages and other inputs were available, a 25 percent increase in livestock products. Food grain supplies, too, could readily be expanded about 15 percent. But the demand for food grains decreases when low-income people obtain more food purchasing power. Thus, the excess ca-

capacity problem for food grains would be aggravated rather than ameliorated.

The changes in food consumption patterns that would result from an increase of \$3.3 billion in food expenditures by the poor would do much to improve the adequacy of their diets as measured by nutritional standards. The result would remain far from the standards, however. The consumption patterns of the affluent miss the mark by quite a bit too. As long as people have a choice in selecting the foods they eat, discrepancies will likely persist. A vigorous educational program would help to close nutritional gaps. But nutritional standards may never be met because they incorporate safety factors to insure that virtually all segments of the population would receive sufficient food. At these levels, many people would be getting more food than they wanted or needed.

An increase in food consumption of at least 25 percent would be needed to maintain farm prices and incomes if farm productive capacity were turned loose. It is unlikely that people would eat this much additional, regardless of the incentives. Food expenditures would have to increase about \$25 billion to expand demand for farm output sufficiently to replace, through the market, the \$3 billion farmers now receive in direct payments.

If present cropland diversion programs and direct payments were discontinued, the only practical way of maintaining farm income would be to raise farm prices. And, aside from an expensive price support program, prices could only be raised by mandatory restriction of supplies. Such controls, except for a few crops, seem to be out of the question at the present time. Moreover, should farm prices increase, food programs would become more costly.

## Effects of Specials on Composite Meat Prices

By Lawrence A. Duewer

Retail grocery stores usually advertise and sell a selected group of meat and other items at special reduced prices each week. The purpose of the study reported here was to determine the effect that these specials have on the average composite price paid by consumers for beef and for pork. The term composite refers to the value or average price of the entire carcass at retail; it represents the combined contributions of all the individual retail cuts from the carcass that are purchased by consumers. Specifically, specials decrease the retail price, and the effect of specials sought in this study is the decrease in the composite price paid by the consumer as a result of specializing practices.

Concern about the effect of specials has been mounting. Questions involved are directed at how large the effect of specials actually is and whether published price series are accurately and adequately reflecting this lowered composite price resulting from meat specials. Retailers feel published prices are too high, causing the wholesale-retail price spread imputed to retailers to be overstated. The National Commission on Food Marketing examined this question and concluded that USDA overstated the average retail price of Choice beef by 7.0 cents per pound and pork by 4.1 cents per pound in 1964.<sup>1</sup>

This paper describes procedures for arriving at volume-weighted composite prices for beef and pork. Similar procedures may be applicable to specializing of other products and to obtaining accurate yearly average prices for seasonal products. For example, some fruits and vegetables carry lower prices and sell in greater volume when in seasonally heavy supply. A

weighting of price by volume each month would give a more accurate average price for the year than just an average of the monthly prices.

### Data Available

Retail meat price sources commonly used are the prices of individual cuts published by the Bureau of Labor Statistics (BLS) and the beef and pork composite Market Basket prices published by the USDA. As BLS prices are used in the Market Basket computations, considerable attention has been directed to determining the accuracy of the BLS figures. Through pricing a larger proportion of chainstores on Thursday, BLS has been able to reflect more special prices than it formerly did.

A retail meat price survey conducted by the Marketing Economics Division (MED) of the Economic Research Service collects both regular and special prices on a weekly basis. This survey includes about 40 retail chain divisions throughout the United States.

Both the BLS and the MED surveys, however, collect only prices. Neither gives any indication of the effect that the proportion of volume sold of an item while on special has on the composite meat price.

A study of the food chains in the Washington, D.C., area completed by MED personnel for the National Commission on Food Marketing provided both volume and price data for beef.<sup>2</sup> Further analyses of these data, collected during 1965, provided valuable information regarding how the total effect of specials can be separated into two effects.

<sup>1</sup> National Commission on Food Marketing, Cost Components of Farm-Retail Price Spreads for Foods, Tech. Study No. 9, Washington, D.C., June 1966, pp. 5-6.

<sup>2</sup> National Commission on Food Marketing, Organization and Competition in the Livestock and Meat Industry, Tech. Study No. 1, Washington, D.C., June 1966, p. 73.



## Theory of the Effects of Specials

Measurement of the total decrease in the average composite price of beef and of pork sold due to specials involves both a price and a volume influence. The price effect is the decrease in the composite value due to special prices, disregarding any changes in the volume moved due to specials. The volume effect is the additional decrease in value resulting from the greater-than-usual sales volume of a cut when on special.

Existence of the price effect is apparent immediately as the average price logically decreases when prices of some cuts are lowered. The volume effect is less obvious and requires some explanation. When a store places a particular cut on sale, the store may sell three, four, or even 20 times the volume it would have sold if the cut had remained at its regular price. As a result, during a specific week a particular store may not sell items in the proportion found in the carcass. Even if we assumed that all stores combined over time must sell in carcass proportions, we could not obtain an accurate composite price because we would not know what price to use. In fact, this is essentially the price we are seeking, but it can be obtained only by taking volume of movement into account. It is true that if stores never specialized meat items the regular prices of the various meat cuts might be somewhat different, but this study was undertaken because stores do use specials.

Retailers are able to make available larger quantities of a cut on special by buying an extra volume of the primal cut producing the particular cut or cuts they are specializing. Table 1 illustrates the existence of both a price and volume effect by using primal cuts in an example. The regular price composite value of \$69.32 per hundredweight is computed using carcass cutting test proportions and regular prices. The composite value of \$60.45 accounts for the total effect of specials by multiplying the regular and special prices by the percentages sold at each price. The bottom portion of the table indicates possible specializing plans of three firms and how a specials-included composite (\$64.88) can be calculated using only price information (assigning equal weight to each store) and the proportion each cut is of

the carcass. In this example, the total sold by the three firms is in carcass proportion and the true composite value obtained was \$60.45 per hundredweight. The price effect was \$4.44 per hundredweight and the volume effect \$4.43. In this example an \$8.87 per hundredweight decrease in the composite price resulted due to specials.

Data from the Washington study conducted for the National Commission on Food Marketing were used to obtain composite prices for beef similar to those in table 1: a regular composite, a specials-included composite, and a volume-weighted composite. The price effect contributed 4.08 cents and the volume effect 4.15 cents of the 8.2-cent-per-pound total effect of specials reported by the Commission (see footnote 2).

Replications of the Washington study in other areas and for pork were deemed necessary before any revisions were made in the procedures for calculating composite retail prices of beef and pork. This report indicates the procedures used and results obtained in this expanded study.

## Procedures

The five cities used in the expanded study were selected to reflect geographic variation, a sizable block of population, and centers of varying sizes. Cities selected were Philadelphia, Detroit, Chicago, Denver, and San Francisco.

All the large retail chains in each city were asked to cooperate. Only two firms that conducted a sizable portion of trade in their respective cities declined. Only one of the 12 largest chains in the United States declined to participate; three of these firms, however, were not asked to participate since they do not operate stores in the cities studied. A total of 20 chain divisions participated--three in Philadelphia, five in Detroit, five in Chicago, two in Denver, and five in San Francisco.

A period of 6 months was selected to gather data. This period was long enough to eliminate abnormalities in data caused by holidays or unusual special programs, without overburdening participating firms. Data were collected in Philadelphia from October 1967 through April 1968, and in the other cities from November

Table 1.--Example of volume effect of specials

Item	Proportion of carcass	Regular price	Value if sold in carcass proportions	Total specials effect of all meat sold				
				% sold on special	% sold regular	Special price	Total value special	Total value regular
	<i>Percent</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Percent</i>	<i>Percent</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Round.....	16.6	.90	14.94	14.0	2.6	.70	9.80	2.34
Rump.....	6.9	.70	4.83	3.0	3.9	.55	1.65	2.73
Sirloin.....	11.4	1.00	11.40	10.0	1.4	.75	7.50	1.40
Flank.....	2.8	.65	1.82	--	2.8	--	--	1.82
Short loin.....	8.5	.85	7.22	2.0	6.5	.75	1.50	5.52
Short plate.....	7.8	.35	2.73	--	7.8	--	--	2.73
Rib.....	9.2	.80	7.36	6.0	3.2	.65	3.90	2.56
Brisket.....	5.1	.45	2.30	--	5.1	--	--	2.30
Shank.....	3.6	.35	1.26	--	3.6	--	--	1.26
Sq. cut chk. ....	28.1	.55	15.46	20.1	8.0	.45	9.04	4.40
Total.....			69.32				33.39	27.06
True composite..							60.45	
Total sold could be divided among three firms specializing as follows:								
	Firm #1	Firm #2	Firm #3	Specials-included			Value with carcass proportions <sup>a</sup>	
				How obtained		Price		
Round.....	Special	Regular	Regular	.70 +	.90 +	.90 ÷ 3 =	.83	13.78
Rump.....	Regular	Special	Regular	.70 +	.55 +	.70 ÷ 3 =	.65	4.48
Sirloin.....	Regular	Regular	Special	1.00 +	1.00 +	.75 ÷ 3 =	.92	10.49
Flank.....	Regular	Regular	Regular	.65 +	.65 +	.65 ÷ 3 =	.65	1.82
Short loin.....	Special	Regular	Regular	.75 +	.85 +	.85 ÷ 3 =	.82	6.97
Short plate.....	Regular	Regular	Regular	.35 +	.35 +	.35 ÷ 3 =	.35	2.73
Rib.....	Regular	Special	Special	.80 +	.65 +	.65 ÷ 3 =	.70	6.44
Brisket.....	Regular	Regular	Regular	.45 +	.45 +	.45 ÷ 3 =	.45	2.30
Shank.....	Regular	Regular	Regular	.35 +	.35 +	.35 ÷ 3 =	.35	1.26
Sq. cut chk. ....	Regular	Special	Regular	.55 +	.45 +	.55 ÷ 3 =	.52	14.61
Total.....								64.88

<sup>a</sup> Percent of carcass X specials-included price.

69.32-60.45 = 8.87--Total effect  
 69.32-64.88 = 4.44--Price effect  
 64.88-60.45 = 4.43--Volume effect



1967 through May 1968. Philadelphia was started a month earlier to provide a test of procedures and methods.

Each cooperating firm supplied cutting tests used (percentages of each cut in the carcass), regular prices for each week, special prices for each week, and volume of movement each week. The specific method of providing this information varied somewhat from firm to firm in relation to their normal accounting procedures. In all cases, however, the information desired was available from material supplied. Pork cutting tests supplied were usually limited to ham and loin tests; the remainder of the cutting test percentages used were uniform for all firms.

Data used from each firm consisted of prices and volume of movement for fresh beef, which in most cases was Choice grade, and fresh and smoked pork. Canned pork was not included; however, prepackaged smoked pork items were included.

Regular and special prices could be used directly as supplied. Volume figures had to be divided into individual cut amounts from the pounds of carcasses or primals and other cuts purchased by the firm. Thus, the carcass cutting tests supplied by each firm were used in two ways. First, the firm's overall beef and overall pork cutting tests were determined for use in obtaining the regular and specials-included composites. Individual breakdowns of each primal or cut purchased were needed in addition to the overall or carcass cutting tests to obtain the volume moved of each cut. If a firm purchased 1,000 pounds of round as an extra primal, this had to be divided among the round cuts in addition to the pounds of these cuts obtained from halves and quarters.

Tables 2 and 3 are examples of the worksheets used for beef and pork to summarize data for each firm each week. These tables show calculations for one firm for one week. The regular prices are as quoted for that week by that firm. The regular and special prices column was obtained by listing special prices for all items specialied that week by the firm, and then filling in the regular prices for all nonspecialied items. The sum of the multiplication of each item in the regular price column by the corresponding value in the carcass

weights column (the overall cutting test) provides the regular composite value entered at the bottom of the regular price column. A similar computation using the regular and special prices column and the carcass weights column provides the specials-included composite value entered at the bottom of the regular and special prices column. The volume-weighted composite listed at the bottom of the actual pounds sold column is obtained by dividing the sum of the products obtained by the multiplication of regular and special prices and the actual pounds sold (table 2--119,260.26) by the total pounds sold (table 2--172,123).

Procedures differ in converting the composite values of beef and pork to a price per pound sold at retail. For beef, the cutting tests assign the weight of fat, bones, and waste to their respective categories, and carcass composite values are obtained which have to be converted to a retail weight equivalent. This conversion procedure is outlined at the bottom of table 2. In the case of pork, the weight of fat, bone, and shrink are not included in the total pounds figure, and the composite values are computed directly on a retail weight basis. This difference in procedure resulted because retailers can sell the fat and bones from beef for 3 cents and 1 cent per pound, while pork fat and bones have no value. The percentage loss of weight in pork at retail for these items in most cases is quite small. The main poundage loss in pork occurs prior to the retail level since retailers buy pork already divided into parts of the carcass.

Price and volume effect computations are also shown in tables 2 and 3. The price effect is obtained by subtracting the specials-included composite from the regular composite. This difference is always positive, except that it is zero when there are no specials. The volume effect is obtained by subtracting the volume-weighted composite from the specials-included composite. This difference is usually positive, but not necessarily. If a high-priced cut is on special and a large amount is sold, the volume effect may be negative. Also, if a store ordinarily sells a greater proportion of high-priced cuts (bought as primals), the volume-weighted composite may be higher than the specials-included composite.

Table 2.--Example of beef worksheet for a specific store for a specific week

Item	Item code	Regular price	Regular and special prices	Carcass weights	Actual pounds sold
		\$ per lb.	\$ per lb.	Cutting test %	Lb.
Porterhouse, BI	101	1.47	1.47	4.7	5609
Club, BI	102				
Club, BO	103				
T-Bone, BI	104	1.39	1.39	2.8	3286
Sirloin, BI	105	1.28	1.28	8.4	10028
Round fullcut, BI	106	1.08	1.08	4.7	7059
Round top, BO	107	1.28	1.28	1.2	1733
Round bottom, BO	108	1.28	.98	1.2	1796
Chuck, steak, BI	109	.78	.78	2.3	3683
Rib, BI	110	1.18	1.18	2.7	5023
Flank, BO	111	1.38	1.38	0.5	1299
Rib, roast, BI	112	1.18	1.18	3.8	7066
Rib, rolled, BO	113				
Chuck blade, BI	114	.69	.59	5.9	9458
Chuck arm, BI	115	.85	.69	3.0	4771
Chuck roast, BO	116	.89	.78	5.0	8119
Sirloin/round tip, BO	117	1.48	1.48	3.2	4385
Eye round, BO	118	1.48	1.48	0.9	1363
Rump, BO	119	1.18	.98	3.4	5105
Rump, BI	120				
Plate, BI	121	.49	.49	1.6	2511
Short rib, BI	122	.59	.59	1.6	2696
Brisket, BO	123	1.08	1.08	2.0	3424
Brisket, BI	124				
Ground beef	125	.59	.48	12.5	40522
Ground chuck	126	.88	.88	1.4	2260
Stew, BO	127	.89	.89	3.1	4941
Shin or shank, BO	128				
Shin or shank, BI	129	.69	.69	1.1	1760
Kidney	130	.39	.39	0.2	330
Fat and suet	231	003	003	12.0	17235
Bones	232	001	001	9.5	14831
Shrink and waste	233	000	000	1.3	1830
Composites	<del>X</del>	Cents per lb.	Cents per lb.	lb.	Cents per lb.
		77.552	73.517	172,123	69,288
		Regular	Specials- included	Total pounds	Volume weighted

These statistics are on a carcass weight basis:

To convert to retail pounds

Weights for fat, bones and shrink are added

(12.0 + 9.5 + 1.3 = 22.8) and subtracted from 100 (77.2).

Then 100 = 1.30 which is used as the conversion factor. Thus,

77.2

$77.552 \times 1.30 = 100.8$   
 $73.517 \times 1.30 = 95.6$   
 $69.288 \times 1.30 = 90.1$

Retail  
 composites

Price effect  $100.8 - 95.6 =$

5.2 cents per lb.

Volume effect  $95.6 - 90.1 =$

5.5 cents per lb.



Table 3.--Example of pork worksheet for a specific store for a specific week

Item	Item code	Regular price	Regular and special prices	Carcass weights	Actual pounds sold
		\$ per lb.	\$ per lb.	Cutting test %	Lb.
Loin, Ctr. Chops	101	1.19	1.19	2.4	4907
Loin, Ctr. Rib Chops	102	1.03	1.03	3.2	6556
Loin, Ctr. Cut Chop	103	1.09	1.09	3.0	6125
Loin roast, rib end	104	.63	.63	4.5	9187
Loin roast, loin end	105	.69	.69	4.1	8402
No. 2 Chops	106	.67	.67	1.2	2473
Tenderloin	107	1.39	1.39	0.8	1649
Fat, bones, and shrink	108	000	000		
Ham, butt end	209	.69	.69	6.5	13563
Ham, shank ends	210	.59	.59	9.7	20248
Ham, center slices	211	1.29	1.29	3.5	7314
Fat, trim and waste	212	000	000		
Whole ham	313	.69	.69	3.5	7314
Butts	414	.59	.49	9.7	38242
Spareribs	415	.69	.69	3.1	5674
Sausage	416	.59	.59	5.7	10176
Neckbones	417	.27	.27	2.0	3962
Pigs feet	418	.29	.29	2.0	4127
Tails	419	.29	.29	0.2	468
Picnics	420	.49	.39	12.1	33330
Bacon, sliced	421	.83	.75	19.2	46215
Bacon, sq.	422	.59	.59	3.6	6174
Bones, shrink, and waste	423	000	000		
Composites		Cents per lb.	Cents per lb.	lb.	Cents per lb.
		70.532	66.816	236,106	64.781
		Regular	Specials-	Total	Volume
			included	pounds	weighted
				152,951.36	
				Total:	
				lb. x vol.	

Price Effect  $70.532 - 66.816 = 3.7$  cents per lb.  
 Volume Effect  $66.816 - 64.781 = 2.0$  cents per lb.

The total effect of specials on the composite beef price in the table 2 example is a decrease of 10.7 cents per pound. In the table 3 example for pork the total effect of specials on the composite price was a decrease of 5.7 cents per pound.

### Results of the Expanded Study

Price and volume effects for both beef and pork were computed each week for each firm. Large variations occurred from week to week in each firm due to the number of items placed on special, the depth of the price cut used, the

relative price of the item or items on special, and the purchase response by the consumer. Average price and volume effects for the period studied were calculated for each firm for both beef and pork. These provided an average or usual level of the price and volume effects for the firm. The levels obtained for different firms varied as expected, but this variation was less than the variation among weeks for the same firm. For instance, the beef volume effect for one firm for different weeks varied from -11.8 to +13.4 cents per pound while the range of variation among firms for the beef volume effect was -1.75 to +7.65.

Citywide price and volume effects were computed by weighting each firm by its share of the total sales in the city made by the firms studied.<sup>3</sup> These city averages are presented in table 4. Variation among cities is much smaller than among firms. The fact that some variation exists indicates why several cities with different characteristics were utilized in the study. An average of the cities provides a statistic that is expected to be reasonably accurate.

Overall study results are also presented in table 4. The total effect of specials on the composite value of beef for the study was 5.97 cents per pound with 60 percent contributed by the price effect and 40 percent by the volume effect. The volume effect was 0.65 times as large as the price effect. The total effect of

specials for pork in the study was 4.88 cents per pound. The price effect contributed 66 percent and the volume effect 34 percent of the total effect. The volume effect was 0.52 times as large as the price effect.

### Use of Results

Determination of the relative size of price and volume effects for beef and pork was the major goal of the study. The continuing survey conducted by MED determines the price effect of specials each week and each month. With the results of this study the volume-weighted composite can now be estimated. If the price effect for beef for a given period was 4.2 cents, it can now be multiplied by 0.65 to obtain a volume effect of 2.7. If the price (4.2) and volume (2.7) effects are added and subtracted from the regular composite the volume-weighted composite is obtained. For pork the value 0.52 is used.

<sup>3</sup> Sales volume percentages per firm were computed from data obtained from Grocery Distribution Analysis and Guide, Metro Market Studies, Inc., Greenwich, Conn., 1968.

Table 4.--Results of specials study

Item	Beef		Pork	
	Price effect	Volume effect	Price effect	Volume effect
	-----Cents per pound-----			
Philadelphia.....	5.07	2.75	2.87	1.49
Detroit.....	3.35	2.41	2.47	0.45
Chicago.....	3.94	1.15	2.95	1.83
San Francisco.....	2.22	1.57	4.68	3.54
Denver.....	(a)	(a)	(a)	(a)
Average, 5 cities.....	3.61	2.36	3.22	1.66
Volume effect/Price effect.....	0.65		0.52	
Total effect.....	5.97		4.88	
	-----Percent-----			
Percentage of total effect.....	60	40	66	34

<sup>a</sup> Only two firms cooperated in Denver.



## Problems Encountered

As in all research, this study encountered several problems and/or technicalities which had to be solved through assumptions or development of guidelines and procedures to handle specific situations. This does not mean the results obtained are inaccurate or in any sense less valuable. In practice, the shortcomings may well be offsetting.

Due to the use of only one cutting test per primal per store, a smaller-than-actual volume of movement might have been used when only one or two cuts per primal were specialied. A firm might well cut more steaks and fewer roasts from a round when steaks are specialied.

Some firms consistently sold a larger proportion of higher or lower priced primals regardless of specialing programs. As pork is almost never purchased in carcass form, firms can easily adjust volumes of different cuts to demands. Pork is further complicated due to the exclusion of canned products in the study. In many cases, firms bought boneless beef to make additional hamburger. Relative prices may also allow the use of other-than-usual trim to be ground for pork sausage. This is probably often true of picnics. The other-than-carcass-percentage volumes found for some firms were assumed to balance out as the values obtained for the different firms were combined.

Data obtained from some firms were more detailed than from others. Some firms sold cuts that were not included on their cutting tests (for example, family steaks, "his and her" steaks, etc.). Some firms provided week-end inventories and for others we had to assume inventories were the same each week. Some firms indicated first and end-of-week sales volumes and some did not. Firms may also have had distress specials in some stores and data on these were not provided.

Branded items, such as bacon, are sold at different prices and some brands may be on special and some not. A procedure for using

price differences for these branded items had to be developed. Again, some firms gave volumes by brand and some did not.

## Implications and Conclusions

Results obtained definitely indicated that specials have a significant effect on composite meat prices of beef and of pork. The total effect of specials found in this study was a decrease of 5.97 cents per pound in the beef composite price and a decrease of 4.88 cents per pound in the pork composite price. Included in this decrease in value is a decrease resulting from the greater volume of movement when cuts are specialied. As a result, a specials-included price by itself does not reflect the total effect of specials. Thus, even if BLS collected all special prices (which is unlikely), they still would not reflect the total effect of specials. Similarly, the MED survey does not presently reflect the total effect of specials, but data computed can be used with results reported in this study to obtain an estimated volume-weighted price.

An important verification of this study is that a volume effect does exist over time for all stores combined. Since net volume effects over time are not zero, present published series are not accurate in that they do not reflect the volume-weighted or actual price paid by the consumer and received by the retailer.

Results indicate that the ratio of the volume effect over the price effect is smaller for pork than for beef. This does not necessarily imply that the volume response to pork specials is smaller than for beef specials, although this may be the case. The fact that most pork specials are on the higher priced cuts may have a tendency to raise, rather than lower, the volume-weighted composite in more cases than for beef.

Considering the various effects that the problems mentioned might have had on the results, it seems more likely that the size of the volume effect is understated rather than overstated.

# A Framework for Analysis of Agricultural Marketing Systems in Developing Countries

By Norris T. Pritchard

Many developing countries urgently need improvements in their agricultural marketing systems to keep pace with expansion in agriculture and industry. The changes in technology, consumer demand for farm products, farmer demand for farm supplies, and the growing interdependence of farming and marketing during development are other stimuli for modernization. Although modernization and expansion of agricultural marketing systems are now underway in developing countries, progress generally is slow. It is visible mainly as small, but important, islands of modern marketing in the midst of now antiquated systems inherited from past generations.

Accordingly, many developing countries are eager to hasten expansion and change in their agricultural marketing systems. But to formulate effective improvement programs they need comprehensive economic analyses of agricultural marketing in the context of economic growth, as well as studies of specific marketing operations. The purpose of this paper is to outline some of the broad elements in such an analytical framework. A total-systems research approach can help policy and program officials to identify present and emerging marketing problems and to understand the intricate, changing linkages binding agriculture and marketing together. It will further aid in setting policy priorities, selecting areas for specific action, and hastening agricultural and general economic development.

## The Research Framework

A comprehensive analysis of agricultural marketing systems requires a broad analytical framework to supply essential operational

research questions and to indicate appropriate research methods. A key element in this construction is the theory of market structure-conduct-performance analysis, using a broad definition of structure. A second major part of the framework is a set of widely known economic theories relevant to marketing. These include the principles of consumption, demand, production, economies of scale, pricing, marketing information, firm behavior, and business management. A third key feature is the theory of effective competition as a dynamic process. A fourth major element is the general theory of economic growth. Growth concepts are especially important because the research, by definition, encompasses agricultural marketing in growing economies now in early stages of development. The main thread binding the theories into a useful framework is the concept of agricultural marketing as an organized, operating behavior system within the national economy. Completion of the analytical framework further requires definition of agricultural marketing, and recognition of basic economic, technological, and social restraints in the environment in which marketing systems function and change.

## Definition of Agricultural Marketing

Agricultural marketing is defined here as agriculturally oriented marketing. It embraces all operations and institutions involved in moving farm products from farms to consumers, in providing production and consumption incentives to producers, marketing firms, and consumers, and in distributing farm supplies--feed, seed, fuel, fertilizer, and machinery--to



farmers. Thus, agricultural marketing covers assembling, transporting, processing, storing, packaging, wholesaling, financing, retailing, market information, pricing, market organization, competitive relationships, bargaining, selling, procurement, product and process innovation, and exporting of products of farm origin. It also covers the similar counterflow of farm supplies to farmers. Accordingly, this concept of agricultural marketing embraces the whole of the food, feed, seed, and livestock industries. However, for such other agriculturally oriented industries as textiles, tobacco, chemicals, and farm machinery, the need for holding the research program to manageable size requires restriction of the concept to those marketing operations that involve these other industries in direct contact with farmers as first sellers or final buyers.

## Market Structure Analysis

For a comprehensive analysis of agricultural marketing systems in the context of economic growth, market structure analysis is a valuable, but often neglected, research tool.<sup>1</sup> Whereas much of economic theory abstracts from marketing, market structure analysis postulates causal relations running from industry and market structure through the conduct of marketing firms to their performance, and, at times, from performance back to structure.<sup>2</sup> Market structure analysis is problem oriented. It may be positive or predictive in purpose and either static or dynamic in nature. It is compatible with other economic theory and, in empirical studies, either a broad or a narrow concept of structure may be used. These are important advantages of the theory for studies of marketing in developing countries where (a) industry and market structures are changing and (b) governments are seeking to improve market performance by making specific changes in market organization.

<sup>1</sup> W. F. Mueller, *Some Market Structure Considerations in Economic Development*, Jour. Farm Econ. 41(2), May 1959.

<sup>2</sup> J. S. Bain, *Industrial Organization*, John Wiley and Sons, New York, 1959. Also R. L. Clodius and W. F. Mueller, *Market Structure Analysis as an Orientation for Research in Agricultural Economics*, Jour. Farm Econ. 43(3), August 1961.

In recent years, market structure has become more and more narrowly defined as "those characteristics of the organization of a market that seem to influence strategically the nature of competition and pricing within the market."<sup>3</sup> The strategic characteristics most emphasized are the degree of seller (buyer) concentration as measured by numbers and size distributions of firms, the degree of product and service differentiation among sellers, and the conditions of entry into an industry and its markets.<sup>4</sup> This narrow concept of market structure, however, seems unsatisfactory for agricultural marketing studies in developing countries. The emphasis on only three of the many elements of market structure influencing conduct and performance reflects a consensus on the critical policy issues in marketing in advanced market economies. Indirectly, it suggests that acceptable solutions have been found for the many excluded, more elementary, structural problems of these highly developed marketing systems.<sup>5</sup> But in developing countries, agricultural marketing, like almost everything else, is in early stages of development. The important structural problems are often not well known. They are more numerous, and more elementary. For example, development of a system of uniform weights and measures and a body of law on contracts and business organization may have far more importance for market performance than action to reduce market concentration in economies with fragmented market structures. Also, the limited degree of product differentiation in a developing economy, with its limited outputs of goods and low effective demand, may be less important than deficiencies in structure that reduce productivity.

Although market structure analysis becomes more difficult and complex as the definition of

<sup>3</sup> J. S. Bain, *Barriers to New Competition*, Harvard Univ. Press, Cambridge, 1962, p. 7.

<sup>4</sup> Clodius and Mueller, op. cit.

<sup>5</sup> A few examples of these excluded structural elements include the many organizational variables often referred to as "rules of the game," set by law and business custom; formal and informal contractual arrangements among business firms; the structures of closely related industries such as agriculture; and some basic economic and technological features of products and processes. In all cases, the key requirement is significant influence on business behavior and performance.

structure is broadened, there are offsetting advantages. Chief among these is improvement in the odds for correctly identifying urgent and emerging structure-performance problems and determining causal relationships. These are essential first steps to finding practical means for improving market structures and performance.

Market conduct is "the patterns of behavior that enterprises follow" in marketing.<sup>6</sup> Conduct is what businesses do; it is their policies and strategies. Market performance is the results of market conduct. These include prices, profits and losses, product and service volumes and qualities, product innovation, technical and economic progress, diffusion of benefits of progress, and other events. In market structure analysis these performance variables are related to observed conduct and structural variables to determine lines of causation.<sup>7</sup> The next step, with great interest for developing countries, is estimation of potential improvements in industry and market performance resulting from a specific change in structure, such as a new food processing plant, an improved system of weights and measures, new grading standards, or land reform in agriculture.

## Relevant Economic Theory

Agricultural marketing has no distinct body of theory of its own. Therefore, analytical frameworks for marketing studies are sets of relevant theories drawn from general economics.<sup>8</sup> These

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<sup>6</sup> Bain, *op. cit.*, p. 9.

<sup>7</sup> In practice, it is often both difficult and unnecessary to distinguish between conduct and performance. In these cases, market structure analysis seeks to determine direct structure-performance relationships. Frequently, too, the nature of the conduct variable is obvious from the performance. For example, a firm that markets many new products probably has a strategy of product innovation and a substantial product research and development program. Similarly, it may be as difficult as it is unimportant to distinguish sharply between a market strategy of low prices and the prices.

<sup>8</sup> Relevance is largely determined by the economic functions performed in a marketing system, the nature of the specific marketing problem under study, and the economic forces and restraints in agricultural markets.

include the well-known theories of consumer demand, production, pricing, farmer demand for inputs, market information, behavior of the firm, innovation, storage, transportation, competition, countervailing power, and others. Among these, the theories of consumer and farmer demand for farm products, inputs, and marketing services are especially useful for explaining and predicting how and why the structures of these demands change during development.<sup>9</sup> The theory of production is important since most marketing operations involve the production of goods and services. They require inputs of productive factors. With technological advance in marketing, rising wages, and increases in market size during development, analyses of economies of scale and changes in substitution relationships among productive factors acquire great importance in marketing studies. Economic-engineering analyses, based on the theories of production, firm behavior, and demand, are particularly valuable for estimating the feasibility of the new marketing facilities needed for modernization of agricultural marketing systems in developing countries.

From national income accounting and input-output analysis come useful concepts and information for study of a major growth phenomenon. This is the changing structure of linkages among agriculture, marketing, and other economic sectors. Increasing interdependence of economic sectors, such as agriculture and marketing, is a hallmark of economic development. Other useful economic concepts may be drawn from welfare theory, macroeconomic analysis, and the theory of international trade.

Finally, useful analogies may be drawn from the history of agriculture and agricultural marketing in the developed countries. By current standards all of these countries once were seriously underdeveloped. They also were predominantly agricultural until quite recently.<sup>10</sup> Moreover, some of the advanced

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<sup>9</sup> The static nature of the theory is a complicating factor but does not bar its use.

<sup>10</sup> P. T. Bauer and B. S. Yamey, *The Economics of Under-Developed Countries*. Nisbet and Co., Herts, England, 1963, p. 47.



countries have current growth rates and potentials for future growth so high that they may in this sense be considered relatively undeveloped countries.<sup>11</sup>

## Concepts of Effective Competition

The theory of effective competition as a dynamic process is a third major element of the analytical framework.<sup>12</sup> For comprehensive analyses of agricultural marketing systems in developing economies it has several advantages. Its basic assumptions are more realistic than those of pure competition. As a result, they provide more useful, although less precise, guidelines for empirical study. Unlike the theory of pure competition, the theory of effective competition attempts to establish attainable, as well as desirable, standards of industry and market performance. In view of the high importance of improving market performance in developing countries this realism has great value for researchers, policy officials, and others. Furthermore, it enhances the usefulness of market structure analysis with which the theory of effective competition is highly compatible.<sup>13</sup> Another advantage of the theory is that it expressly allows for dynamic economic conditions by viewing competition as a dynamic process rather than as a static, equilibrium-seeking activity. The main disadvantage of the theory of effective competition as a guide to empirical research is its lack of refinement and precision. Its main principles cannot be expressed in the language of mathematics. As a result, quantitatively precise research results are not easily generated. Nevertheless, in the

<sup>11</sup> Students of marketing are also aware that useful insights on marketing systems and operations can be gained from several other disciplines. These include geography, political science, philosophy, sociology, anthropology, and social psychology. Economics, of course, remains the foremost discipline necessary for marketing studies, including comparative analyses of marketing systems. See: David Carson, *International Marketing: A Comparative System Approach*. John Wiley and Sons, New York, 1967, p. 495.

<sup>12</sup> For a detailed discussion of the theoretical concepts see: J. M. Clark, *Competition as a Dynamic Process*. The Brookings Institution, Washington, D.C., 1961.

<sup>13</sup> Clodius and Mueller, *op. cit.*

resulting choice between more realism with less precision and the opposite, pragmatism strongly favors realism.

## Theory of Economic Growth

Economic growth is a major national goal in all countries and a significant fact of modern life. It may be defined as a significant, sustained increase in real output per capita, or in total, as measured in national income accounts.<sup>14</sup> Growth always involves sweeping changes in technology, economic and social institutions, structures of production, industries, markets and demand, and modes of life and work.<sup>15</sup> Significant increases in real output per capita are on the order of 15 percent, and more, per decade. Sustained growth is expansion of real outputs and consumption over long time periods, usually several decades, with allowance for short-run variations in rates.<sup>16</sup>

In recent decades, many attempts have been made to develop mathematical models of the growth process. So far, however, the models are not particularly useful for empirical studies of development. Most are far too simple in design, with only one or two independent variables, for a process as complex as economic growth. More importantly, the basic assumptions built into the models have little relevance to the real world.<sup>17</sup> As a result, the research

<sup>14</sup> Simon Kuznets, *Modern Economic Growth*, Yale Univ. Press, London, 1966.

<sup>15</sup> The increases in population that usually accompany economic growth probably are not an essential condition.

<sup>16</sup> National income accounting generally understates true increases in levels of living during growth. No values can be given to the increases in leisure time, the reduced drudgery of work, the greater economic freedom provided by rising incomes, and the improvements in product quality, health, and nutrition not fully reflected in their costs.

<sup>17</sup> F. H. Han and R. C. O. Matthews, *The Theory of Economic Growth: A Survey*. Surveys of Economic Theory, vol. II, Macmillan Co., New York, 1966. The authors reviewed growth models developed since the late 1930's. More specifically, Schultz writes: "... growth economists have been producing an abundant crop of macro-models that are ... neither relevant ... nor useful in examining the empirical behavior of agriculture as a source of growth." T. W. Schultz, *Transforming Traditional Agriculture*, Yale Univ. Press, New Haven, 1964.

economist must be content with some qualitative concepts of the development process.

Economic growth has many origins. The obvious sources are increases in the supply of productive resources--labor, land, and investments in human and physical capital. But in most countries, the primary source of economic growth per capita is improvements in the quality of resources.<sup>18</sup> Quality means efficiency in terms of output per unit of input. Increases in efficiency come mainly from technological advance in production, marketing, and business management, from improvements in resource use through changes in industry structure, and from increases in scale of economic units. Scientific research, education, and communication are the foundation of technological advance. Indeed, a hallmark of modern economic growth is the increasing application of science and technology to production, marketing, and business management. Increases in scale of economic units are made both necessary and possible by advances in technology and in the economic size of markets. Changes in industry structure that increase efficiency include transfer of labor out of agriculture, increases in the size of businesses, and decreases in most types of self-employment.

Economic growth is a pervasive force. This is assured by intricate economic linkages among sectors and industries, by the nearly universal nature of science, knowledge, technology, and management, and by other socioeconomic forces. Except in primitive societies, all economic sectors are so interdependent that a change originating in one, sooner or later, induces changes in others. For example, an increase in farm outputs usually expands volumes of products moving through marketing channels. This affects costs, prices, incomes, and employment in assembly, processing, transportation, and distribution. There are also third and fourth order impacts on suppliers of fuel, packaging materials, and capital goods.

Improvements in the quality of the products of one industry often increase efficiency in others, especially when the outputs of one are the inputs of others. Examples include the

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<sup>18</sup> E. F. Denison, *Why Growth Rates Differ*, The Brookings Institution, Washington, D.C., 1967.

farm and food machinery industries, transportation, communication, business machines, packaging, and others. The "spin-off" of civilian products and processes from military and space research has received much publicity. Moreover, as economic growth moves the economy toward ever more specialization and commercialization, the interdependence of economic sectors and the pervasiveness of growth forces become more intense. Increasing interdependence during growth is especially pronounced in agriculture and agricultural marketing.<sup>19</sup>

In a growing economy, consumer demand rises and its structure changes significantly. Pronounced shifts in consumer expenditure patterns result mainly from important differences in income elasticities of demand for different goods and services.<sup>20</sup> For example, food expenditures, even in low income countries, rise in value but fall as a share of consumer incomes because of generally low income elasticities of food demand. Among foods, income elasticity differences promote continuing change in food consumption patterns. Also during growth there is an expansion of knowledge which brings an awareness of new things and new concepts of living. New products give consumers more consumption alternatives and the growing economy becomes increasingly market oriented. These changes have high significance for agriculture, agricultural marketing, and national policy for food and agriculture.

On the supply side, economic growth is marked by significant increases in the economy's productive capacity and by equally important changes in the structure of production, industries, and markets. Technological advance provides more efficient production and marketing processes and new products. These are needed to satisfy consumer demand for greater diversity in consumption and to stimulate demand enough to assure full use of the economy's

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<sup>19</sup> A. R. Ayazi, *Interrelationships Between Agriculture and Other Sectors and Their Implications in Terms of Planning*. FAO, Monthly Bul. Agr. Econ. and Statis., October 1968, Rome, p. 1-9.

<sup>20</sup> Price elasticities among different goods and services also vary greatly. During growth technological progress and rising wages alter relative production and marketing costs and prices of most things. Thus, price elasticities may accentuate, or offset, income effects on consumption.



expanding capacity to produce. Most new technology reduces the need for unskilled labor, raises demands for skilled workers, scientists, and executives, decreases the drudgery of work, and permits real wages to rise. It makes old plants and equipment obsolete, increases capital investments per worker, raises the scale of producing and marketing units, increases the share of fixed costs in the cost structures of most firms, makes production and marketing more complex, and lengthens production planning periods. Numbers of large production and marketing organizations increase while many small, family enterprises disappear.

Emphasis on marketing increases in growing economies. Profitable utilization of larger producing and distributing units depends on high sales volumes. Accordingly, marketing firms have increasing need for influencing consumer behavior and for control over supplies of basic products. Farmers come under increasing pressure to improve delivery schedules and the level and uniformity of quality of outputs. The multiple, circular flows of goods, services, and credits linking agriculture, agricultural marketing and other sectors become stronger and more complex during growth. There are also rising pressures on national governments for effective policies of full employment and economic stability to maintain consumer purchasing power, enterprise profits, and a satisfactory rate of economic growth. Growth further stimulates urbanization of the population, places greater demands on capital and product markets, and induces significant changes in educational and political institutions and in ways of living.<sup>21</sup>

### Special Conditions in Agriculture

The facts of economic development differ markedly among countries, regions, and economic sectors but the fundamental nature of the growth process is universal. The basic socioeconomic trends in all growing economies are strikingly similar.<sup>22</sup> These facts largely

<sup>21</sup> Kuznets, *op. cit.* Clark, *op. cit.* Also: J. K. Galbraith, *The New Industrial State*. Houghton Mifflin Co., Boston, 1967.

<sup>22</sup> The growing volume of literature on agricultural development and general economic growth continues to confirm this universality.

explain the absence of special theories of growth for agriculture, marketing, and economies in early stages of development.<sup>23</sup> Nevertheless, there are important practical reasons for considering the development of agriculture and agricultural marketing as distinct fields of study linked to the study of economic growth.

First, agriculture in nearly all countries is the largest industry. In developing countries this superiority is overwhelming. In many, agriculture requires more than half of the total labor force and food expenditures are more than half of all consumer expenditures. Much of industry and commerce is strongly oriented to agriculture as a source of raw materials and as a market for manufactured products. For example, in most developing countries, from half to two-thirds of all manufacturing involves the processing of farm products.<sup>24</sup> Commerce probably is even more dependent on agriculture. Thus, the development of agriculture and its marketing system, in developing countries, is at the heart of the growth process.

Second, agricultural production is almost exclusively a biological process. From this fact flows a variety of special technological, educational, and economic problems important to agricultural and marketing development. Third, most farm products are subject to much lower income and price elasticities of demand than most nonfarm products and services. Accordingly, general economic growth means that a declining share of the national income is spent for food and that the share of the gross domestic product originating in agriculture falls. From this comes the necessity to transfer resources, especially labor, out of agriculture. Fourth, this essential outmigration of people is fraught with more complexities, hardships, and restraints of an economic, technical, educational, social, and political nature than those prevailing in most nonfarm sectors of the economy. Finally, agriculture, more than any other economic sector, is the bastion of small-scale, family enterprise. This has much importance for methods and problems of stimulating and

<sup>23</sup> "There are no special economic theories or methods of analysis fashioned uniquely for the study of the underdeveloped world," Bauer and Yamey, *op. cit.*, p. 8.

<sup>24</sup> FAO, *Agriculture and Industrialization, The State of Food and Agriculture 1966*, Rome, 1967, pp. 75-121.

sustaining growth and adjustment in agriculture and marketing.

## The Functionally Complete Structure

At this point the research framework lacks the appearance of the functionally complete theoretical structure that is desired. It seems more like a collection of essential building materials and tools that clearly are relevant to analysis of agricultural marketing systems and operations in developing countries. Relevance, however, is one of the basic tests of a useful theory. The other requirement is enough consistency among the several elements of the framework to provide, in a practical sense, a coordinated, if not actually an integrated, analytical framework.<sup>25</sup> This essential coordination is provided by several strong threads that, although not immediately obvious, link the several theories into a loosely fitted, but workable, research framework.

First, there is the economist's basic concept of the economy as an organized, operating behavior system. Agricultural marketing, as defined above, is an important subsystem in the economy. Like all operating systems it has institutions, participants, functions, inputs, outputs, behavior patterns, and complex linkages among the variables. This concept of a functioning system in the process of growth naturally leads to substantial synthesis of the principles of growth, changing structure-conduct-performance relationships, dynamic competition, and changing inputs, outputs, functions, and technology.<sup>26</sup> That is, the basic concept of agricultural marketing as a functioning system provides needed unity to the research framework and, therefore, to the empirical research it serves as an analytical tool.

Second, there is the coordination provided by the primary purpose of the research and its pragmatic orientation. The research is concerned with identifying and evaluating practical

means of modernizing (improving) functioning agricultural marketing systems in developing countries to meet their needs for expansion coupled with higher performance. The sole purpose of the analytical framework is to provide useful guidelines to empirical study. Accordingly, in practice, the purpose and orientation of the analytical framework and the research provide much needed unity of direction and content.

Finally, the principal elements of the theoretical structure have substantial mutual compatibility. Therefore, they are easily fitted together provided that the requirement for consistency is not applied too rigorously. For example, market structure analysis is easily harnessed with growth theory in developing useful research questions about the nature of the structural changes required in agricultural markets to promote growth and improved performance. The theory of effective competition as a dynamic process is closely related to, and even incorporates aspects of, market structure and growth theory. Even the normally static theories of consumer demand, production, price, and firm behavior can be used, with some difficulty, in harness with the other theoretical elements to provide useful research questions. In short, it seems evident that the set of relevant economic theories described briefly in this paper forms a loosely fitted, but functional, analytical framework for empirical study of agricultural marketing systems and operations in developing countries.

## Some Further Observations

There are several reasons for thinking that the need for an analytical framework for study of agricultural marketing systems and operations may be even more urgent in developing than in advanced countries. These reasons include the more limited knowledge of marketing in developing countries, severe deficiencies in essential statistics, a paucity of published research, higher costs of conducting research, and more urgency for finding practical means of promoting improved marketing performance. For the marketing expert from a developed country the wide gulf between the system that is

<sup>25</sup> Wroe Alderson, *Marketing Behavior and Executive Action*, Richard D. Irvin, Homewood, Ill., 1957, ch. I.

<sup>26</sup> *Ibid.*



familiar to him and one in early stages of development is another compelling reason for an analytical framework that emphasizes basic theory. These factors, moreover, have significant impacts on the nature of the research approach and program and on research techniques.

Because so little is known about agricultural marketing systems and operations in most developing countries the first need is to describe accurately and meaningfully the systems that exist. Description must precede essential evaluation of marketing structures and performance, major forces responsible for changing structure-performance relationships during development, the changing strategic role of marketing during growth, the impacts of development on marketing, and related factors. These analyses are required for identification and evaluation of priorities among marketing problems and for subsequent determination of practical means for improving agricultural marketing systems and operations.

Given these research requirements, the limitations on essential information, and the qualitative nature of some key variables in marketing, much reliance must be put on description as the main research method. Descriptive research, unfortunately, has a strong tendency to be superficial although the need clearly is for analytical description. The difference is substantial. Analytical description is description at its best--rigorous and firmly grounded on, and guided by, relevant economic theory. That is, analytical description requires a carefully constructed theoretical framework.

For the marketing researcher from a developed country responsible for analysis of agricultural marketing in developing countries an analytical framework seems indispensable. There is a wide gap separating marketing systems in early stages of development and the complex, sophisticated system he knows so

well. Many familiar landmarks, the historical record, and the large body of completed research are generally absent. The developing marketing system functions in a different environment, must meet different standards of performance, and may be faced with rather elementary problems. These problems may even be unfamiliar to this marketing expert because they were reasonably well solved in his native land long before he began his career. As agricultural production experts have learned, the conditions and problem of a developing country's agriculture often differ so much from those in other developing and advanced countries that common ground is not established without returning to elementary principles. The difficulties of transferring marketing institutions, methods, and experience from one country to another generally are conceded to be even greater than those of transferring farming methods. Accordingly, research must start from a firm foundation of relevant theory. It is an incomplete, but essential, chart for sailing in unfamiliar waters. Later, as empirical studies develop essential statistics, other descriptive information, and analyses of marketing in developing countries, the research framework can be more explicit, complete, and otherwise improved.

Finally, analytical description is by no means the only suitable research technique for these analyses. Analysis of the marketing problems identified in the early stages of the studies may require, at one time or another, the whole range of research tools economists employ, including economic-engineering and econometric studies. But regardless of method, the major objective remains unchanged. It is to determine practical means of improving agricultural marketing structures and performance in developing countries in the larger interest of accelerating agricultural, marketing, and total economic development.

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# Book Reviews

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## *Economics of Food Retailing*

By Daniel I. Padberg. Cornell University, Ithaca. 292 pages. 1968.

This book by Daniel Padberg uses much of the data assembled by the National Commission on Food Marketing, but as the author states, the economic data are carried on through to conclusions on industry performance.

Padberg sets the stage for performance evaluation in the Introduction in relatively uncomplicated language. He recognizes that there are limitations on the ability of economic theory and analysis to discriminate between desirable and nondesirable performance. He attributes some of these to absence of data; some, to the shortcomings of methods of analysis, particularly those involving longer run dynamics; and some, to our basic inability to determine and weight together the views of members of society as to desirable and nondesirable attributes of performance.

Part I of the book deals with the organization of the food retailing industry. Padberg examines concentration in food retailing and in purchasing food products by retailers. He examines several other attributes of organization, including physical efficiency, cost behavior, and scale economies.

In part II, competitive behavior is examined, including the effects of local market concentration on behavior. Part III is devoted entirely to performance and part IV to conclusions. The book is replete with data, containing over 100 tables and 20 or so figures. The treatment of performance as being a flow of results over time is well done, and the historical aspects of behavior and performance are integral elements of Padberg's final assessment of the present state of performance.

There are few analytical points in the book with which this reviewer has any quarrel. Simply

to indicate that there are some weak spots, however, let me cite one example. Charts of composite retail price, by weeks, for three food chains in each of four cities were presented. Following a discussion of the charts, Padberg stated, "The price patterns of Chains B and C in City 3 and City 4, and particularly all chains in City 1 and City 2, represent the more typical price behavior of food chains. Each chain's price level is similar to its competitor's." If data for additional chains and additional cities are available, it would have been more effective and helpful to readers for these data to be presented. As it is, we only have the author's conclusion based on a small sample.

Professor Padberg concludes that "an unsolved problem of the food retailing industry is how to make this generally high level of performance available in low income areas." Yet, I found few indications that the performance of the industry in low income areas was particularly deficient. In fact, we might turn the conclusion around and state that an unsolved problem of society is how to raise low incomes. With this problem solved, the "excellent" performance in the retail selling market could be expected to generate high quality services and goods for all consumers.

This book seems likely to be quoted by members of the economic profession and the food trades for some years into the future. Those having responsibilities for education of industrial organization students or for regulation of the food trades should be aware of Padberg's conclusions. But they should also be aware that there were differences of opinions on the part of the members of the National Commission on Food Marketing as to the validity of the conclusions. Each person must decide for himself if the conclusions are valid.

John O. Gerald



## *Concentration and Price-Cost Margins in Manufacturing Industries*

By Norman R. Collins and Lee E. Preston. University of California Press, Berkeley and Los Angeles. 116 pages. 1968. \$5.75.

Classical economic theory asserts that prices are higher and the gap between prices and costs is wider under monopolistic conditions than under perfect competition. Consequently, interest in concentration--i.e., the degree to which a small number of firms dominate an industry--is largely attributable to the impression that industrial bigness and monopolistic behavior are causally related. Actually characteristics and behavior patterns vary widely and this precludes a blanket acceptance of a direct link between abnormal profits and concentration.

Norman R. Collins and Lee E. Preston of the University of California at Berkeley studied the relationship between concentration and profitability in American manufacturing industries. The results of their efforts approximate the conclusions of a number of past studies examining the industry variability of industry price-cost margins.

The authors examine independent studies conducted by such prominent economists as Bain, Levinson, Fuchs, Weiss, Schwartzman, Stigler, and Sherman. With the exception of Stigler, these economists stated that there is no conclusive indication of any close correlation between industry concentration and profit rates. Collins and Preston conclude that there is a weak statistical association between concentration and profit indicators in manufacturing industries.

The authors' study, based on 1958 concentration data, is a cross-sectional analysis which measures concentration in terms of the share of the four largest firms. The analysis yields diverse results for the 10 major industry groups considered. Margins were loosely associated with concentration in six of the 10 groups. Geographic dispersion was a statistically significant explanatory variable in six of the 10 groups. The capital-output ratio was statistically

significant in only three cases. In short, the results are too varied to draw a single sweeping conclusion. However, it is noted that the measure of percentage of assets or percentage of shareholder equity showed a better relationship than percentage of sales.

As mentioned earlier, the authors used a concentration index as a measure of the degree of concentration. However, the concentration ratio provides only a partial measure of the monopoly power of large firms. This reviewer feels that an important issue of concern for economists studying this area is the efficacy of concentration indexes, particularly as a measure for antitrust actions. Apparently the U.S. Supreme Court, as revealed in recent antitrust decisions, makes almost exclusive use of this measure in deciding the constitutionality of a merger. However, the Court has not made clear at what percentage of market volume a merger is a restraint of trade. For example: the Court decided the merger unconstitutional in the Philadelphia National Bank case because the bank combination would oversee 33 percent of the banking market in the area, while in the Brown Shoe case the merger was declared unconstitutional when only 2.3 percent of the total retail shoe market was involved. Therefore, concentration measures can be expected to provide only a preliminary basis on which resources for further studies should be allocated.

Concentration is more likely than not a significant variable in the analysis of industry profit and price-cost performance, but other variables also are important and sometimes they appear to outweigh or offset completely the effects of concentration.

Despite the fact that the association between concentration and profits observed in this research is neither overwhelming in magnitude nor unvarying in occurrence, the study did reveal in the aggregate a significant misallocation of resources and excessive dollar profits. Thus, it presents good justification for continual examination of this area of economics.

Jack Ben-Rubin

## *The Beginnings of Agriculture in America*

By Lyman Carrier. McGraw Hill Book Company, New York. 323 pages; reprinted by Johnson Reprint Corporation, New York. c. 1923. \$12.50.

Modern technology and the increase in the number of scholarly libraries, particularly in the newly established colleges, has made the reprinting of out-of-print journals and books a flourishing industry. The present volume is one of a series entitled *History of American Economy*, which is made up of reprints of the "important studies and source books relating to the growth of the American economic system." The series is under the general editorship of William N. Parker, Professor of Economics, Yale University.

Carrier, at the time he wrote this volume, was an agronomist in the old Bureau of Plant Industry. He was one of a group of economists, administrators, plant scientists, and others who believed that the historical approach would help in understanding current problems. Members of this group founded the *Agricultural History Society* and wrote many historical books and articles.

While much work has been done in the field of agricultural history since 1923, Carrier's book has never been supplanted. We know enough more about some of the topics he discusses to point out errors of fact and interpretation, yet the volume as a whole stands up remarkably well. It should be in every library, and is recommended to any scholar who is interested in the beginnings of our agriculture, both in farming and in such economic problems as labor and trade.

Wayne D. Rasmussen

## *Ranch Economics*

By James R. Gray. Iowa State University Press, Ames. 534 pages. 1968. \$15.95.

The author states in his preface that ranchers are aware of peculiarities in their business, but that they lack knowledge in economic theory. The position of economists, on the other hand, is reversed. Consequently, this book is designed to help both groups by bridging the gap between ranching and economics.

As often happens in cases of attempting to serve two ends with the same means, the results may not entirely satisfy either. This is especially true from the economic theory standpoint if the book is to be used in classrooms. It is also likely that ranchers will have to draw on other sources for assistance, since most subjects are not treated in depth.

Gray is extremely knowledgeable about the industry from his close work with it for a number of years. However, his competence may have led to the inclusion of an excessive number of subjects, many of which are treated superficially.

The book provides an excellent bibliography of research done primarily on Western ranching. Both ranchers and students will find it a valuable reference source.

Robert L. Rizek



### Suggestions for Submitting Manuscripts for Agricultural Economics Research

Each contributor can expedite reviewing and printing his manuscript by doing these things:

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3. **NUMBER OF COPIES.** Submit one ribbon copy and two additional good copies of the manuscript for review.

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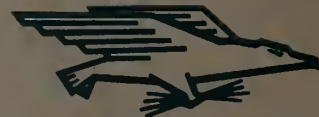
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