

WHEAT ACREAGE SHIFTS IN MICHIGAN
AND THE IMPLICATIONS

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AND THE IMPLICATIONS

By

Eber W. Eldridge

A THESIS

Submitted to the College of Agriculture, Michigan
State University of Agriculture and Applied
Sciences in partial fulfillment of
the requirements for
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MASTER OF SCIENCE

Department of Agricultural Economics

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Approved

Lawrence Witt

ABSTRACT

The records of 978 farms in four areas of southern Michigan were compiled and examined. This data was made available through the cooperation of the county ASC offices. The wheat acreage from 1951 through 1957 and the farm allotments from 1954 through 1957 were examined as a basis for supporting the hypotheses; (1) Since the use of marketing quotas a greater percentage of the wheat acres are located in farms with 15-acre allotments and less, and (2) Wheat acres are shifting from areas of specialized wheat production to areas of less specialized wheat production as a result of the acreage allotment and marketing quota program.

Three types of shifts are occurring:

1. There is a shift of wheat acres away from the larger farms to the smaller farms. Farms of over 180 acres had wheat acreage curtailed by 46 per cent from their 1951-1953 average. Farms 70 acres and under have been curtailed only 19 percent.

2. There is a shift in wheat acres from one area in Michigan to another. Kalamazoo and Livingston counties have been increasing wheat acres slowly but have not exceeded their allotment in any year since marketing quotas were applied. Sanilac and Gratiot-Isabella have increased their planting at a much more rapid rate. The former exceeded its allotment by 10 percent in 1957 while the latter exceeded its allotment by 24 percent the same year.

3. There appears to be a relative shift in wheat acres harvested from the specialized wheat regions to the less specialized wheat regions in the United States.

During the last three years Kansas harvested 75 percent of the state's allotment while Michigan was harvesting 102 percent. During the same period the four states, Ohio, Indiana, Illinois, and Michigan, harvested 78 percent of their pre-quota 10-year average while Kansas, Nebraska, North Dakota, and Oklahoma were harvesting 65 percent of their 10-year pre-quota average.

These shifts have implied effects on income distribution and efficiency. Income distribution is likely to shift in the same direction as the shift in wheat acres. The degree of this income shifting will depend on the availability of alternative crops and the use of new technology.

Specialization has been curtailed on the larger farms, while the smaller farms are able to gain in their competitive position relative to large farms. The control program may change the comparative efficiencies of the large and small farms.

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CHAPTER I

INTRODUCTION

Considering the Problem

Farmers in the United States who are less than 50 years of age have never operated a farm in an unsupported market. Price supports and their companion feature, production controls, have become nearly as much a part of American agriculture as tilling the soil.

Society believes these programs are necessary because of the "problems" in agriculture. Basic agricultural imbalances can be placed into three broad categories:¹

1. The low income farmer situation, or income distribution problem
2. Producing the wrong combination of farm products
3. Too many total resources devoted to agriculture (too much total production for the prices farmers want to receive)

From 1951 until the present, 1957, the general price level has been remarkably stable. Non-farm incomes have been rising steadily (about 12 per cent since 1951). The Gross National Product has been steadily increasing: 1954, \$359 billion; 1955, \$387 billion; 1956, \$415 billion. Against this framework of prosperity, farm prices declined 19 per cent between 1951 and 1956. In spite of the 11 billion

¹Wallace Ogg, "The Farm Situation", Farm Policy Forum, (Summer, 1956), pp. 2-4.

dollars worth of farm commodities purchased by the government, farm income declined from 14 billion in 1951 to 10.7 billion in 1955.

In the attempt to alleviate the income situation, allotments and marketing quotas are the most widely used instruments of United States price policy. These programs, chiefly emphasizing acreage allotments but sometimes augmented by marketing quotas and marketing agreements, have been applied to the politically designated "basic crops"--wheat, corn, cotton, tobacco, peanuts, and rice.

Curtailling output below the level of normal supply will result in a larger total revenue because of the inelastic demand of most agricultural commodities.

The success of production controls in utilizing this principle depends on the effectiveness with which supply can be regulated by controlling acreage.

However, because of the elasticity of supply and advances in technology, the production often exceeded that which was expected at a fixed price. If the demand for a farm product is quite inelastic, a small reduction in output will result in a large increase in price with a gain in total revenue. If the supply curve is relatively elastic, pegging prices above the equilibrium level will call forth a huge surplus.

In 1957 our agricultural price policies are receiving a more thorough scrutiny than ever before. This is being done by legislators, farm organizations, administrators, economists, and the general public. "Are these programs doing what we want done?" is the big question.

Before the answer to this question can be approached an attempt

must be made to determine the goals of society toward which these programs are directed. In this study a belief regarding these goals and values will be expressed and discussed.

The second part of the answer involves the actual results of price programs. Do production controls control the supply of the commodity? Do controls have any effect in total agricultural production? Do they change the pattern of production which exists?

This study will be devoted to the effects of marketing quota-acreage allotment in the production pattern of wheat as indicated by a study of 978 Michigan farms.

With the present marketing quota regulation on wheat, every farmer can grow a minimum of 15 acres of wheat without penalty. This is not expected to have much effect in a specialized wheat state such as Kansas. But how much effect will it have in Michigan where 84 percent of the farms plant 15 acres or less?²

Are these farms under 15 acres growing the maximum? If so, does this increase nullify the reduction on farms with more than 15 acre allotments? It is the purpose of this study to examine this problem.

Objectives

The primary objective of this study is to examine the shifts of wheat acres between 1951 and 1957 in four areas of southern Michigan with particular emphasis on comparing those farms under 15 acres allotment with those farms over 15 acres allotment.

²Commodity Stabilization Service, USDA. For the year, 1955. Letter from Raymond J. Pellock, Director, Grain Division. See appendix.

From this examination an attempt will be made to draw conclusions regarding:

- (1) the effect of the 15 acre minimum on causing wheat acres to shift in Michigan
- (2) the possibility of acreage allotment-marketing quota programs causing:
 - a. a shift in wheat acres from larger farms to smaller farms in Michigan
 - b. a shift in wheat acres from areas of specialized wheat farms to areas of less specialized wheat farms, such as the shift from Kansas to Michigan
- (3) the effect of marketing quota-acreage allotment programs on income distribution and efficiency.

An attempt will be made to relate the possibility of these programs causing income shifts within Michigan and income shifts between regions of the United States.

The Hypothesis

If relatively high price supports (in terms of percentage of parity) continue and if the prices of other farm produced commodities remain in approximately the same price position relative to wheat, and if marketing quota-acreage allotments remain in effect with 15 acre minimum on wheat, a greater percentage of the wheat acres will be located on farms with less than 15 acre allotments.

The assumption will be made in this study that the farms with the larger wheat acreages are more specialized in the production of wheat. With this assumption in mind it can be hypothesized that wheat acres are shifting from the areas with farms of more specialized wheat production to areas with farms of less specialized wheat production as a result of the marketing quota-acreage allotment program.

Importance of Wheat in Michigan³

Michigan farmers in 1955 produced 27,966,000 bushels of wheat on 948,000 acres. This gave Michigan a rank of ninth in the United States in production and twelfth in total acres of winter wheat. Within the state wheat ranked second to corn with a total value of 54,534,000 dollars.

Michigan wheat acreage went up 50 per cent from 1946 to 1947 and more than doubled from 1942 to 1952. In cash receipts from farm marketings, wheat ranked first in the state and approximately double the receipts of dry beans and corn. Wheat accounts for approximately 25 per cent of the cash receipts from crops and 10 per cent of total cash receipts. Cash receipts from livestock and livestock products are about 50 per cent larger than cash receipts from all crops.

Wheat makes an important contribution to the income of the Michigan farmer.

³Michigan Agricultural Statistics, Michigan Department of Agriculture, July, 1956, pp. 5-6.

CHAPTER II

BACKGROUND INFORMATION

Problems Arising from a Supported Price Program

Public information sources make frequent reference to the "farm problem". The "farm problem" actually consists of a series of very complicated problems all interwoven to some degree. Some of these farm problems are said to be caused by government programs that were installed to alleviate the agricultural situation. Problems which arise from marketing quota-acreage allotment programs are quite uniformly recognized. J. K. Galbraith states:

There are four faults to the old program which were of commanding importance. I venture to suggest that there would be considerable measure of agreement on the list as follows:

1. the surplus problem
2. the control problem
3. the trade problem
4. the discrimination problem⁴

The surplus problem.-War speeded our shift to mechanization and stimulated adoption of improved technology with marked effects on productivity and output. This trend has continued unabated. War expansion improved productivity, and coupled with the rather prompt recovery of European agriculture from the disruptions of war, meant a

⁴J. K. Galbraith, "Farm Policy, the Current Position", Journal of Farm Economics, XXXVII(May, 1955) p. 293.

return of surpluses in the late 1940's. Korea interrupted this, but only temporarily. By 1952 we again were piling up stocks under the price support program. Although the foreign demand for our agricultural commodities decreased sharply when foreign countries rebuilt production, there was no decrease in production in the United States. Our agricultural production continued to increase under the stimulation from incentive price support programs.

In two years, from the 1951 Korean export peak to 1953, the United States lost foreign outlets for the output of 22 million acres. The result was a large accumulation of surpluses.

Without numerous subsidized export programs United States exports would have remained low and our surplus stock would have continued to increase. If price supports had been removed and the surpluses thrown on the market, prices would have declined drastically with harmful effects on the incomes of producers both in the United States and other countries.

Because of the numerous export programs and resulting increase in shippings abroad, a general increase in surpluses has been prevented even though production has remained at high levels. For some commodities, rice and cotton for example, stocks are being reduced but for others, notably wheat, feed grains, and tobacco, excess stocks are practically as great as they were when export programs were launched.

The excess supply of wheat has not been reduced materially despite the fact that wheat is the most widely used commodity in the special export programs. The carry-over into the 1956-1957 crop was more than 1 billion bushels. Exports are markedly higher this year than last but the prospects are that total domestic consumption plus

exports will not be large enough to appreciably reduce the surplus. Thus the carry-over into the 1957-1958 crop year is expected to remain close to 1 billion bushels.

For feed grains, the supply, crop, and carry-over this year is greater than probable domestic consumptions and exports.

The problems caused by surpluses are difficult for many people to understand. As stated by Lawrence Witt:

Farm people in particular believe the ample food and a full stomach must somehow be a definite benefit to international good will. They fail to recognize that food exports can also create problems.⁵

The trade problem.-The rapidly increasing surpluses naturally threw the spotlight on exports in the hope that they might provide an easy way out of the dilemma. This is especially so for such products as cotton, wheat, tobacco, rice, fats and oils, and some fruits and vegetables which we have been accustomed to exporting.

The United States was unable to maintain a competitive position in world agricultural trade partly because of United States price supports but also because of dollar shortages, import restrictions, bi-lateral trading arrangements and numerous other barriers to trade in United States farm products. Special types of programs to stimulate exports of United States agricultural products have therefore been undertaken. In three fiscal years, 1954-1956, these programs moved over 3 billion dollars of farm products into export channels. This amounted to 40 per cent of the total agricultural exports.

⁵Lawrence Witt, "What Are Our Alternatives?", Farm Policy Forum (Spring, 1957), p. 27.

The ambitious government sponsored export programs have marked effects and consequences not only here in the United States but also in the receiving countries and in other agricultural exporting countries. They have affected the general pattern of world trade in agricultural products and they have had an impact on the relations between the United States and many foreign countries.

Well over half of the record level of exports in 1956-1957 were made under the special disposal programs of Public Law 480, section 402 of the Mutual Security Act, and sales at competitive prices by the Commodity Credit Corporation. In 1955-1956 shipments under Public Law 480 and section 402 accounted for approximately 70 per cent of the exports of wheat and dairy products and approximately 60 per cent of the exports of coarse grains, cotton, and rice.

Howard R. Tolley of the National Planning Association reports:

The export drive has brought an increase in the United States' share of total world trade in several commodities. On the other hand available statistics indicate that to date exports from other countries have not declined seriously and world prices have been relatively stable. For example, world trade in wheat exports has increased from about 25 per cent in 1953-1954 to more than 35 per cent in the current year, 1956-1957. During this period, Canadian exports have held about even. Similarly world trade in rice has risen each year since 1953. Our rice exports and our share in world trade declined from 53 to 56, but in the current year our exports have shown a marked increase.⁶

The problem in connection with trade is this: rapidly mounting surpluses held by the Commodity Credit Corporation have had an unsettling effect upon foreign governments. It is feared that we might

⁶Howard R. Tolley, "Results of Our Farm Export Programs", Farm Policy Forum (Spring, 1957), p. 20.

someday find the surpluses intolerable and launch an all-out dumping program to get rid of them. This sense of uneasiness is shared by agricultural producers in the United States and abroad who have no way of knowing what the ultimate solution will be or how their operations will be affected.

It is feared that our increasing emphasis on exports will displace the exports from some of the foreign countries. Great harm can be done to the economies of friendly and neutral countries if we deprive them of important export markets, or if through miscalculations we should materially reduce world commodity prices. These dangers should not be discounted merely because they have been avoided thus far; continued caution will be required in the future.

Another problem is the cost. The cost of the program to the government is large. Commodities acquired at price support levels and held in storage for varying periods are sold at competitive prices. Sales for foreign currencies and barter transactions are made at export market value. The Commodity Credit Corporation incurs substantial losses for storage and transportation. Cash subsidies are paid on exports under the International Wheat Agreement. The government receives no payment for grants, for emergency relief or donations to voluntary agencies for needy persons abroad.

The vigorous export program is playing an important role in disposing of surpluses. Even if continued for a period of years it alone cannot be expected to solve the surplus problem. The problem of balancing agricultural production with consumption can be solved by a many sided approach including significant adjustments in the production of many

commodities.

Production control problems.-When an agricultural crop is supported at a price above the equilibrium price for that commodity, too many resources will be devoted to the production of that crop. As a result more of that crop is produced than society wishes to consume at the established price. This has caused the surplus problem and brought to attention the various means of controlling production. The customary way of controlling production has been to limit the use of one of the resources used in production of that particular agricultural crop, namely land.

There are two ways of looking at control programs: (1) the effectiveness in controlling acres, and (2) the effectiveness in controlling total production.

The extent to which acreages are reduced depends upon compliance with the program. According to a report of the North Central Farm Management Committee:

The proportion of wheat producers who complied with their wheat acreage allotments varied greatly among the six states studied. Compliance by the farmers in Kansas who were interviewed was virtually complete, 99 per cent complied. The lowest percentages of compliance were in Indiana and Michigan where only slightly more than half of the wheat producers complied with their allotments.⁷

Compliance with programs is closely associated with penalties involved and the number of alternative crops available. In the case

⁷"Farmers' Reaction to Acreage Allotments", A report by the Subcommittee on Diverted Acres, North Central Farm Management Research Committee, December, 1955. (Lexington, Kentucky: Kentucky Agriculture Experiment Station), p. 6.

of wheat, the marketing quota-acreage allotment program reduced the harvested acreage 30 per cent between 1953 and 1955. Large reductions in acreages of wheat were made in all of the specialized wheat areas as a result of the control program.

Although acreages have been successfully controlled on a single crop, this has had very little effect on total agricultural production because the diverted acres have been employed effectively to produce other agricultural commodities. According to the Department of Agriculture report:

Despite important shifts in acreage of individual crops, allotment programs have affected major uses of land very little. The total planted acreage of all field crops decreased only 1 per cent from 1953 to 1955. Relatively little land was shifted from harvested acres to pasture.⁸

As a result of acreage controls the uses of land changed. Acres devoted to particular crops were reduced, but total agricultural acres for agricultural production was not significantly decreased.

It becomes evident that one must look at the control problem not from acres alone but from a standpoint of total production. Allotment programs that control acreage do not always control production to the same degree which acreage is reduced even in a particular crop.⁹

⁸"Effects of Acreage Allotment Programs, 1954 and 1955", Summary Report, Production Research Report No. 3, United States Department of Agriculture, Agricultural Research Service (June, 1956), p. 6.

⁹Research evaluating the effectiveness of production controls includes T. W. Schultz and O. H. Brownlee, "Effects of Crop Acreage Control Features of AAA on Feed Production in Eleven Midwest States", Agricultural Experiment Station Research Bulletin No. 298 (Ames, Iowa: April, 1942); G. E. Brandow and E. W. Lurne, "The Effects of the 1954 Acreage Restrictions on Crop Production in Southeastern Pennsylvania", Progress Report No. 128 (State College of Pennsylvania: Agricultural Experiment Station, December, 1954); and, Dale E. Hathaway, "The Effects of Agricultural Production Controls in 1954 on Four Michigan

With acreage restricted producers tend to step up the use of fertilizer and other yield-increasing practices. Yields of wheat increased by 15 per cent and yields of cotton by 28 per cent between 1953 and 1955. Much of this increase in yield probably would have been accomplished without acreage allotments but the allotment programs undoubtedly accelerated the use of yield-increasing practices.

Between 1953 and 1955 the production of the four allotment crops, corn, wheat, cotton, and rice, decreased 8 per cent. However, the production of seven non-allotment crops increased by 23 per cent. The result of combining the 11 crops was an increase of 1 per cent in total agricultural production in spite of marketing quotas and acreage allotments.

The problem of controlling production was described by J. K. Galbraith as follows:

Either the controls were politically acceptable and not very effective or they were effective and politically disagreeable. The recent experience with controls over diverted acreage and its abandonment during the election campaign suggests the nature of this difficulty.¹⁰

The discrimination problem.-(or the transfer of income and assets)
The free market is generally considered an allocator of income and assets between individuals and groups. Occasionally society has decided through the democratic process that the resulting allocation was not equitable. Consequently, measures were taken to change this distribution. One of these measures is the agricultural price support program.

Farming Areas", Quarterly Bulletin, Michigan Agricultural Experiment Station (May, 1955), pp. 565-573.

¹⁰J. K. Galbraith, op. cit.

During the year ending June 30, 1957, 3.3 billion dollars¹¹ were spent supporting agricultural commodities in the United States. This money, collected from tax sources, is an obvious redistribution of income from the non-farm sector to the farm sector of our economy. This is done because of a valuation that all sectors of our economy should share relatively equally and the belief that the farm sector of the economy was not sharing in this manner. Along with price supports we have production controls for certain crops. According to Dale Hathaway:

The major reason for production controls on certain crops seems to be to keep the income transfers from the non-farm economy within the bounds of political feasibility. Occasionally this is not possible and the support program is ended, as was the potato program.¹²

In addition to the transfer from tax sources, there is another element of transfer from the non-farm to the farm economy resulting from production controls. This is true only if the production controls actually result in reducing total production. As a result of reduced total production, higher prices will be paid at the market place by purchasers of agricultural commodities.

Non-farm to farm transfers.- Transfers from the non-farm sector to the farm sector are one type of transfer. There are also elements of income and asset transfers within agriculture that are inherent in the production control programs. These can be into region-to-region transfers and farm-to-farm transfers. One of the elements in the region-to-region

¹¹Quoted in U. S. News and World Report, August 23, 1957, from U. S. Treasury and USDA sources.

¹²Dale E. Hathaway, "The Impact of Agricultural Production Controls on the Income and Asset Distribution Within Agriculture", unpublished article, Michigan State University.

transfer is the way in which allotments themselves are distributed.

According to Dale Hathaway:

An outstanding example is offered in the case of cotton in 1954. One of the more spectacular features in United States cotton production has been the increase in production in the west. Irrigation, technology that made possible the mechanization of cotton production, and relatively favorable prices brought a sharp increase in cotton acreage, particularly since World War II. Since total cotton acreage in the United States has had a downward trend since 1930, the western region has increased its percentage of total acreage even more sharply. Most of this increase in percentage came at the expense of the southeast region.

Thus it would appear to be something more than coincidence that Congress provided that in voting on marketing quotas for the 1950 crop growers must have been producing cotton in 1948, thereby excluding some of the growers in the western region who might otherwise have voted down the marketing quotas rather than have their rapidly expanding acreage cut back. It is not surprising to expect that growers in the West might have objected, since they were receiving a substantially larger cut (36 per cent) than most other regions. In any case the quota was approved and the Southeast and Delta regions' percentage of the reduced acreage increased.¹³

When it became apparent in the case of cotton that allotments and marketing quotas would be required on the 1954 crop, a struggle took place in Congress between the Western and Southeastern cotton areas. This trouble hinged primarily on the income distribution aspects of these allotments. The existing law declared a historical average would be the preceding five years excluding 1949.

Including 1947 instead of 1949 had significant implications regarding income distribution. In 1947, historical acreage for the West was only 57 per cent of its 1949 acreage. The Western region in 1949 reached its highest percentage of the national acreage and a new high for the West. Including 1949 in the historical average would have given the Western region a higher percentage of the allotment.

¹³Ibid.

The issue was finally resolved in Congress in a conference committee by increasing the total national allotment, granting special additional acreage to the Western region, and by specifying that this special additional acreage would not count in future historical allocations. The resulting reductions remained substantially against the Western regions and continued in 1955 and 1956 crops.

Another element to be considered is the availability of new technology in varying degrees to the different regions. There exists between areas a difference in the possibilities for application of new technology. Cotton will again serve as an illustration for this type of shift. A Southeastern region received a revised allotment for the 1954 crop which amounted to 85 per cent of the acreage planted in 1952, while the Western regions were allotted 74 per cent of their 1952 acreage. Although the Eastern states produced only 77 per cent as much cotton as they had in 1952, the Western states produced 88 per cent as much cotton in 1954 on 74 per cent of their 1952 acreage and the Southwestern regions exceeded their 1952 production.

A similar shift is taking place in the wheat producing areas. Twenty-three wheat producing states east of the Mississippi seeded 17.5 per cent of the wheat in 1952 and produced 23 per cent of the wheat harvested from that crop. These same states received 17.3 per cent of the total acreage allotted to wheat in 1954 and produced 30 per cent of the crop.

There is a third element in the region-to-region shift. Not all regions have equal possibilities of falling back on alternative crops in case marketing quota-acreage allotments are applied. In some of the

specialized wheat areas in western Kansas hardly any alternative crops exist. A severe cut in acreage allotments means a severe cut in farm income at a fixed price. In areas where numerous alternative crops exist, any one of which would produce approximately the same income as the wheat crop, marketing quotas and acreage allotment reductions in wheat would not as severely affect the farm income.

Farm-to-farm transfers.-There is abundant evidence to prove a wide variation in the amount of benefit the farmers receive from price support. Fifty-one per cent of the wheat that was sold in Nebraska in 1949 was produced by 19 per cent of the wheat farmers. Forty-nine per cent of the wheat that was sold in Kansas in 1949 was sold by 18 per cent of the wheat farmers. A small producer does not benefit from the price support program on a scale that approaches the benefit received by the large producers. The many producers who raise none of the price supported commodities for sale receive no benefit at all.

Many agricultural commodities are not supported in any way. One could argue that the livestock producer is actually penalized by buying supported feed and selling an unsupported product. Therefore, it can be argued that the non-farm sector of the economy as well as a large portion of the agricultural sector are paying taxes for which a few agricultural producers receive the benefits.

Another redistribution of income that occurs under production control is due to the original provision of minimum acreages below which producers cannot be cut. The greater the number of years that a given production control program is in effect with yearly reductions and allotments, the more difficult this aspect of the program becomes.

The burley tobacco program is a good illustration of what happens

with minimum acreage provisions. The yield of burley has been increasing steadily from 1940 on. Because of this increase in yield, it has been necessary to continually decrease the acreage allotments for tobacco. In 1954, burley tobacco yields increased to an extent that it was found necessary to request Congress to authorize an additional reduction in the acreage for 1955. At that time the minimum acreage below which a grower could not be cut was .7 acres.

It was pointed out that 60 per cent of the growers were already at the minimum; therefore, the other growers would be required to bear the entire burden of the additional 25 per cent **reduction in acreage** that was being proposed.

There are incidents in cotton which illustrate the ultimate effects of minimum acreages. In North Carolina in 1954 only 20 out of 77 counties with cotton allotments had acreage remaining after establishing minimum allotments. In 1954 one county in Alabama used all of their allotments to establish a minimum leaving one grower who had 750 acres in 1953 with a five acre allotment in 1954. In 1955 the cotton production control law was changed and county committees were given the authority to disregard acreage minimums.

It is one of the purposes of this study to ascertain whether or not a similar trend exists in the wheat situation.

Another important factor in income distribution is the possibility that an allotment might become capitalized into the value of the farm. Before the allotment can become an asset of significant value, it must be an accepted fact that the program is of long duration. The price of the supported crop must be such that it would greatly increase the farm's income and few alternative crops would be available. Here again

the burley tobacco control program gives the best examples. A case has been cited where the use of burley base for one year was offered to the highest bidder and the bids ranged from \$100 to \$176 per acre.¹⁴

Not all of this figure is the asset value of the allotment, but certainly some of it is implied. It should not be assumed that all acreage allotments have asset value. There is little evidence of any capitalization into the value of the farm for many of the supported commodities.

At any rate there is sufficient evidence that with one particular supported commodity, burley tobacco, the value of the allotment is an asset which affects the income transfer between farms.

Legislative Background

Most legislation that provides for price supports also provides for production controls. In the case of wheat, a national acreage allotment was required by law in the Agricultural Act of 1938, and was therein designated as:

...That acreage which the Secretary determines will, on the basis of the national average yield for wheat, produce an amount thereof adequate together with an estimated carry-over at the beginning of the marketing year for such crops and imports, to make available a supply for such marketing year equal to a normal year's domestic consumption and exports plus thirty per cent thereof. The national acreage allotment for any year shall not be less than 55 million acres.¹⁵

¹⁴G. L. Johnson and C. B. Haver, "Decision Making Principles and Farm Management", Bulletin 593, Kentucky Agricultural Experiment Station (1953), p. 31.

¹⁵The national acreage allotment for wheat for 1938 was set at 62,500,000 acres; special legislation provided a minimum of 62 million acres for 1954 only. The allotment for 1955 and 1956 was 55 million acres.

The Secretary was directed to ascertain and proclaim, not later than July 15 of each marketing year, the total supply and normal supply of wheat for the marketing year and to proclaim the national acreage allotment for wheat.¹⁶

Acreage allotments for wheat have been in effect for the crop years 1938 through 1943 inclusive, and for years 1950, 1951, 1954, 1955, 1956, and 1957. The 1951 allotments were terminated in January, 1951, and the 1955, 1956, and 1957 allotments were made inoperative in the noncommercial states.

As specified in the law of 1938, the national marketing quota for wheat consists of a normal year's domestic consumption and exports plus 30 per cent, less (1) the sum of the carry-over at the beginning of the marketing year, and (2) estimated amount which will be used on farms as seed or livestock feed during that year.

Marketing quotas for wheat are required under the law, as of 1954, whenever (1) the total supply exceeds the normal supply by more than 20 per cent, or (2) the total supply for the marketing year is not less than the normal supply and the average farm price for three successive months of the marketing year has not exceeded 66 per cent of the parity price. Marketing quota provisions do not apply to any farm on which the acreage planted to wheat does not exceed 15 acres or the normal production of the acreage planted to wheat is less than 200 bushels.

¹⁶In the Agricultural Act of 1954, Section 332 of the Agricultural Act of 1938 was amended to read "not later than May 15."

Marketing quotas were in effect for wheat in the crop years 1941, 1942, 1943, and in 1954 through 1957. They have been proclaimed for 1958. The quotas for 1943 were set, but the restrictions were removed before they could be applied.

The national wheat acreage allotment is allocated to states and the state allotment to counties according to the average wheat acreage in each state and county for the 10 years immediately preceding the year in which the allotment is decided.¹⁷ That is, the 1956 allotment was computed in 1955 according to statistics from 1945-1954. Adjustments are made for abnormal weather, for trends in acreage, and for diversion under previous allotment programs. The state reserve for new farms is approximately 1000 acres. The Michigan 1958 allotment available for apportionment to counties is 965,008 acres. The following procedure was used in apportioning this state allotment to counties:

- (1) The wheat history data used were the combination of Agricultural Marketing Service official estimates and wheat acreage data obtained by Agricultural Stabilization Conservation committees,

¹⁷For example, the national wheat acreage allotment for 1956 was determined by the following formula:

Beginning stocks, July 1, 1956	950 m. bu.
Imports	3 m. bu.
Available without 1956 crop production	953 m. bu.
Normal year's domestic consumption and exports plus 30 per cent*	1241 m. bu.
Available stocks, July 1, 1956	- 953 m. bu.
Needed from 1956 crop	288 m. bu.
288 m. bu. ÷ 15.5 (national average yield) =	
18,580,645 acres needed.	

*Normal year's domestic consumption	675 m. bu.
Normal year's exports	280 m. bu.
Total	955 m. bu.
Plus 30 per cent	286 m. bu.
	1241 m. bu.

Agriculture Stabilization and Conservation Office, February 28, 1956.

- (2) Adjustments were made for abnormal weather, war crop credit, and diversion under previous allotment programs,
- (3) An average was obtained of the five-year, 1952-1956, and two-year, 1955-1956, acreages of wheat seeded in each county,
- (4) A preliminary base acreage was established by adjusting, when necessary, the 10 year adjusted average acreage to within 98 per cent and 102 per cent of the 5 year plus 2 year average acreage, and
- (5) Adjustments of not more than 2 per cent were made from the preliminary base acreage for some counties by the State Committee.

The total of the 1958 county base acreages established was 1,419,198 acres. The state scaling factor was obtained by dividing the state allotment available for apportionment to counties by the total of the county base acreages. This scaling factor, applied to each county base acreage to obtain the 1958 county allotment, was a .679967248 (this factor $\times$ the county base acreage = the current county allotment). By the use of the above formula, the average 1958 county allotment is 68 per cent of the county adjusted base for the farms in the county on which allotments were required for the 1958 crop of wheat.¹⁸

The county wheat acreage allotment is divided among the farms in the county with each farm allotment based primarily on the farm's wheat history during the past four years.

Marketing quotas are based on the acreage allotments. Quotas apply to all farms with more than 15 acres of wheat, in the commercial wheat states, since quotas were approved in the July referendum. (The law requires the Secretary to proclaim marketing quotas and hold a referendum when the total supply of wheat exceeds the normal supply by more than 20 per cent). A penalty of 45 per cent of the parity price,

¹⁸USDA, Part VIII, Letter No. 6, 1956. Wheat Acreage Allotments, State Administrative Officer, Wendell Becraft to county ASC officers, (Kansas). Method described herein is used with Michigan statistics supplied.

as of May 1, 1956, was assessed against any excess wheat produced on a farm.¹⁹ The penalty rate on the 1957 crop excess wheat was \$1.12 per bushel. Farmers with a 1957 wheat acreage in excess of their farm wheat allotment were given until June 1, 1957, to adjust their acreage into compliance. The excess wheat acreage could be plowed under as green manure, pastured, or cut for hay. All of these methods used to reduce the wheat acreage are required to be carried out in such a way that the wheat does not reach maturity.

There are certain circumstances under which a grower may avoid the payment of the 45 per cent of parity penalty in the event he has overseeded his quota of wheat.

Excess wheat produced in 1957 may be stored, at the producer's expense, and by doing so the producer will be allowed to postpone or to avoid the payment of the penalty. Excess wheat which is stored to postpone or avoid payment of the penalty must be kept in a place adapted to the storage of wheat and may be inspected at any time by officers or employees of the United States Department of Agriculture or members, officers, or employees of the State or County Committee.

There are two conditions under which a producer may later remove all or a portion of his marketing excess from storage without penalty: (1) By underplanting the farm acreage allotment for a subsequent crop, and (2) by producing a subsequent crop which is less than the normal production of the farm's acreage allotment. Under these circumstances a producer may remove from the storage without payment of penalty that

¹⁹As specified in the Act of 1938, the penalty for noncompliance under acreage allotments was loss of the price support. Under marketing quotas producers were to be penalized with a fine for marketing or feeding products in excess of their quotas.

quantity of wheat which represents the difference between normal production for farm acreage allotment and the actual production in any subsequent year.

In the past, county normal yields have been determined on the basis of the yield per acre seeded for harvest as grain, with adjustments for abnormal weather conditions and trends in yields.

For the 1957 and 1958 marketing quota yields, the determinations have been made on the basis of the yield per harvested acre for the 10 year period, 1947-1956, inclusive, with appropriate adjustments for abnormal weather conditions and trends in yields. It has been determined that a yield per harvested acre is more reasonable and more accurate, since the amendment to the Agricultural Adjustment Act of 1938, as amended, adopted in 1954, provides that marketing quota penalties shall in effect be determined basically on the wheat acreage harvested.

Harvested yields per acre also are considered to be more reliable than yields per acre seeded for harvest as grain in most areas of the country and their use in determining county normal yields will help eliminate the wide fluctuations between counties and also tend to stabilize yields between years.

In determining the county normal yields, the Act specifies that adjustments shall be made for abnormal weather conditions and trends in yields.....

Trend adjustments have been made by averaging the adjusted 10 year average yield with the adjusted five-year (1952-1956) average yield giving equal weight to each. The adjustment for trend has not been made in those counties in which it has been determined that due to abnormally unfavorable weather conditions it is impossible to determine if there has been any trend in the county.²⁰

Excerpts from Related Studies

The following are selected quotations from studies related to the hypothesis presented herein. All are concerned with the question, "What acreage shifts are associated with acreage allotments, and marketing quotas?"

²⁰Quoted from a letter to the chairman of the Michigan ASC State Committee from Assistant Deputy Administrator, Production Adjustment, USDA, 1957.

One research study has investigated this question for burley tobacco:

The larger part of the burley legislation approved during the years 1933 to 1950 which affected the distribution of the allotments directly increased or maintained small allotments and indirectly redistributed acreage to the sparse, outlying areas where allotments had been predominantly small. This tendency was carried over into the administration of the programs. Outstanding legislative provisions for maintaining and expanding small allotments were: (1) minimum allotment sizes prescribed in legislation of 1943 and 1944, (2) limits on reduction of small allotments prescribed in legislation in 1940 and 1946, and (3) extra acreages or poundage quotas for distribution to smaller allotment holders prescribed in the legislation of 1934, 1938, and 1940. However, any measure which tended to increase or maintain burley prices joined with large technological advances to enable land formerly submarginal for burley production to be used to grow burley profitably. Many acreage histories, eventually resulting in new farm allotments, were established on land of this kind especially in 1934, 1935, and 1937 and during the war years.²¹

Another study, regarding cotton, was undertaken by the California Agricultural Experiment Station:

By 1955, the allotment program had reduced California cotton acreage from its 1953 level by about 45 per cent. The statutes and regulations were such that these cuts may be somewhat less severe for farmers producing fewer than 15 acres of cotton before allotments. Often no cut at all was required for the farmers who previously had produced not to exceed 5 acres of cotton. Otherwise, available data would indicate that percentage cuts in cotton acres were fairly uniform among farms of varying size.

A large proportion, about 65 per cent, or the total cotton allotments in the San Joaquin Valley, east side, went to operators on farms with 60 acres or less of open cropland. Many of these small growers also produce grapes or tree fruit. For such operators, the cotton crop may be of secondary importance and represent primarily a source of

²¹James F. Thompson, "Inter-farm and Inner-area Shifts in Burley Tobacco Acreages Under Government Control Programs, 1930-1950" (Lexington, Kentucky: Kentucky Agricultural Experiment Station, University of Kentucky), p. 66 (Summary).

supplementary income. Usually the grower is interested chiefly in the fruit enterprise and gives it most of his attention. The effects of cotton allotments on such farms might vary considerably from those on the larger and more specialized field crop farms in other portions of the San Joaquin Valley. If so, it is important to discover what these differences are and specifically to evaluate the effects of cotton allotment programs on the small grape-cotton farmers.²²

In still another study, made jointly by 6 states (Ohio, Indiana, Michigan, Kentucky, Iowa, and Kansas), these paragraphs appear:

There is wide-spread interest in how north central farmers reacted to the programs. How many complied with corn and wheat allotments? What were their reasons for complying and not complying? How did they change their acreage of corn and wheat and their production practices?

The proportion of wheat producers who complied with their wheat acreage allotments varied greatly among the six states. Compliance by the farmers in Kansas who were interviewed was virtually complete--99 per cent complied. The lowest percentages of compliance were in Indiana and Michigan where only slightly more than half of the wheat producers complied with their allotments.....

The reasons given by the farmers for not complying with their allotments also differed among the states. In Ohio, Indiana, and Michigan a number of farmers said they did not comply because they did not wish to disrupt established rotations or because their allotments were too small. In Ohio, Indiana, and Michigan many other farmers indicated they did not comply because they used their wheat for feed. Many farmers who did not comply produced fewer than 15 acres of wheat; hence, they were not subject to penalty payments for non-compliance.....

In general, compliance with 1954 wheat allotments and the reasons given were closely related to the types of farming operations carried out in the areas. In the general farming areas, compliance was lower because acreages often were small and some farmers felt that continuation of established rotations and livestock programs were more important to them than eligibility for price supports. In the specialized wheat

²²D. C. Athanassatos and Trimble R. Hedges, "Farm Adjustments and Earnings Under 1955 Cotton Acreage Allotments", California Agricultural Experiment Station, Giannini Foundation of Agricultural Economics, in cooperation with the Production Economics Research Branch, Agricultural Research Service, USDA, mimeograph report No. 194, (May, 1957), p. 3.

area in Kansas, the one case of non-compliance was due to inadequate information at planting time as to the allotment.²³

²³"Farmers' Reaction to Acreage Allotments", op. cit., pp. 6, 7, and 8.

CHAPTER III

PROCEDURES

The Sample

The sample used in this study was selected for a personal interview survey in 1954.²⁴

The sampled area covered 4 different types of farming areas in the lower peninsula of Michigan. (See Figure 1, Appendix B). This selection was made for two important reasons: (1) to select farms with different types of production decisions and alternatives which were typical of the decisions being made in the commercial farming areas in Michigan, and (2) to obtain a random sample within counties in these types of farming areas. This sample does not represent all Michigan farmers. In the original randomly selected sample 1, 142 farms were

²⁴The following studies were made from this survey: Hsiang Hsing Yeh, "Estimating Input-Output Relationships for Wheat in Michigan Using Sampling Data, 1952-54" (Master's Thesis, Michigan State University, East Lansing, Michigan, 1955). William Delmar Murphy, "Attitudes of Michigan Farmers Toward Government Production Control Programs as Shown in a 1954 Survey" (Master's Thesis, Michigan State University, East Lansing, Michigan, 1955). Myron Eugene Wirth, "Production Responses to Agricultural Controls in Four Michigan Farming Areas in 1954" (Master's Thesis, Michigan State University, East Lansing, Michigan, 1956). Dale E. Hathaway, "The Effects of Agricultural Production Controls in 1954 on Four Michigan Farming Areas", op. cit. Lawrence Witt and Dale E. Hathaway, "Farmers' Plans to Change Livestock Numbers as Related to Agricultural Production Controls", Quarterly Bulletin (East Lansing, Michigan: Michigan State University, May, 1956), Vol. 38, No. 4, pp. 511-519. Charles Beer, (a study in process), "A Study of the Effects of Price Supports and Acreage Controls Upon Farm Operations in Michigan", Michigan State University, East Lansing, Michigan.

included. The counties covered were Kalamazoo, Livingston, Sanilac, Gratiot, Isabella, with Gratiot and Isabella considered as one area. Since this particular study covered the period from 1951 to 1957 it was necessary to have complete data on the farms for that entire period. It was necessary to eliminate 164 of the original sample because of incomplete data for the period. This left 978 farms which are included in this study.

The counties were selected to represent four types of farming areas in the most commercial farming sectors of Michigan.²⁵

Kalamazoo County is designated as a dairy, livestock and corn area. Sources of farm incomes are approximately equally divided between these enterprises. The 1950 Census classified this area as about 29 per cent dairy, 24 per cent general farms, 15 per cent as cash grain, and 14 per cent as livestock other than poultry. From 1940 to 1950 the wheat acreage increased about 65 per cent.

The second area studied was Livingston County, considered to be a dairy and general farming area. The 1950 Census classified 38 per cent of the farms in this area as dairy, 15 per cent as cash grain, 11 per cent as livestock other than dairy or poultry, and 18 per cent as general farms. From 1940 to 1950 this area increased its wheat acreage 100 per cent.

The third area considered in this survey was Sanilac County, classified as a dairy and cash crop area. The 1950 Census classified 42 per cent of the farms as cash grain farms, 28 per cent as dairy farms,

²⁵E. B. Hill and Russell J. Mawby, "Types of Farming in Michigan", Special Bulletin 206 (East Lansing, Michigan: Michigan State Agricultural Experiment Station, September, 1954).

22 per cent as general farms, and 2 per cent as livestock farms other than dairy. This area also increased its wheat acreage by about 100 per cent. Dry field beans, wheat, and sugar beets are the major cash crops.

The fourth area sampled consisted of segments of two counties, Gratiot and Isabella, both of which represent a cash crop and dairy type of farming area. The 1950 Census classified 20 per cent of the farms in this area as cash grain, 30 per cent as dairy, 5 per cent as livestock other than dairy or poultry, and 22 per cent as general farms. This area increased wheat acreage by more than $2\frac{1}{2}$ times from 1940 to 1950, and during this same period production increased by more than 4 times.

Within each county townships were selected by considering soil maps in an attempt to select townships of consistent soil types. For the fourth area, Gratiot-Isabella, it was necessary to select townships from both counties in order to accomplish this purpose.

Selection of the townships was further restricted by eliminating all those that had been in a similar survey in 1952 or where township agent programs were in progress. It was felt that this restriction would reduce dual enumeration by Michigan State University.

For each township a random sample was drawn from the wheat listing sheets of County Agricultural Stabilization and Conservation Committee. When this sample was taken in 1954, the wheat acres were recorded for the selected sample from 1951 to 1954 and the 1954 allotment was also recorded. In order to bring the information up to date the County Agricultural Stabilization and Conservation Committee Offices of these counties were revisited in 1957 and wheat acres and wheat

allotments for 1955, 1956, and 1957 were recorded.

The 1957 wheat acreage figures were made after measurements of the farms had been completed. However, it is possible that some of the farms over 15 acres in allotment might have destroyed wheat acres after the recording in order to comply with their allotment. Since there were very few of these, it is not expected that this slight difference in wheat acres would affect the conclusions.

It is, of course, possible that the farms dropped from the study because of incomplete data might cause some bias in the study. In examining the areas it appears that there is little significant difference in the number of farms dropped between the four areas studied. In Kalamazoo 14 per cent were dropped because of incomplete data; in Livingston, 15 per cent; in Sanilac, 10 per cent; and in Gratiot-Isabella, 17 per cent. It is necessary to assume that those dropped from the study are random in effect and will not significantly bias the results.

There were three principal reasons which appeared for disappearance of a farm from the ASC records. One of the most important was the failure to grow any wheat for three consecutive years. If a farm grew no wheat, regardless of the size of their allotment, for three consecutive years they were dropped from the records and their allotment was given to someone else.

Reconstitution was a frequent occurrence in this period. This means that the acreage was combined with another purchased or rented tract of land and a new allotment assigned to the farm.

Farm-splitting was a frequent occurrence. Part of the farm was sold and a part of the was retained; in many cases this involved a split or disappearance of the wheat allotment on that farm.

Framework of assumptions

American agriculture has been advancing rapidly in technology and efficiency of production. The influence of specialization, mechanization, and new production tools and techniques permitted an increase in production of nearly 40 per cent between 1930 and 1955 while the farm labor force was decreasing by approximately 40 per cent.

An advance such as this has a twofold effect with a competitive price mechanism. The lower cost, more efficient farms increase production and gain in comparative income. This increase in production, which results from greater efficiency and specialization, causes a shift to the right in the commodities aggregate supply function. Lower prices are the result of this shift. The lower prices cause lower incomes to the less efficient operators since their production has not increased. Therefore, the less efficient operators lose in comparative income and are under pressure to shift to other crops, leave agriculture, or reduce their level of living.

With a price support program the benefits of technology still go to the more efficient operator. However, marketing quota-acreage allotments might curtail further specialization, especially on the larger farms.

The greatest difference is in the effect upon the less technologically advanced farmer. The higher support prices insure that the later adopters of new technology also have a margin which permits the accumulation of capital and the possibility of investing in further technological advances. Price security will encourage these investments.

Within this framework at least two values become important--equity

and efficiency. The American society (and the farmer, too) is interested in productivity and efficiency. A number of programs, both government and private, are devoted to advancing efficiency. The results have been phenomenal. In 1920 one farmer produced enough food for six people. He now produces enough food for 19 people.

The increase has been larger than society is willing to purchase at acceptable prices to the farmer. In this way the equity value has come into focus. Society has indicated that competitive prices bring incomes to agriculture which are too low compared with other sectors of the society. Various measures have been adopted which limit the price reducing effects of advancing production. By supporting prices above the equilibrium level and by establishing marketing quota-acreage allotments a redistribution of income has been achieved.

While these two values are held by farmers and society there is a lack of understanding regarding the means to these ends. Frequently, the means are employed which conflict with a prominent value of society in an attempt to attain a different goal. In this study the shifts in wheat acres resulting from marketing quota-acreage allotments will be related to: (1) effects on income distribution, and (2) effects on efficiency.

No attempt is made to ascertain what changes would have taken place without marketing quota-acreage allotments. It is assumed that any trend which existed prior to marketing quota-acreage allotments would have continued. Therefore, any slowing, stopping, or reversal of these trends will be considered as the influence of the control program when logic indicates this possibility.

Only the marketing quota-acreage allotment program is considered.

The related effects of programs such as the soil bank are not within the scope of this study.

CHAPTER IV

POSSIBLE EFFECTS OF SUPPORT AND CONTROL PROGRAMS

One of the prominent values held by the people of the United States is that a free competitive market system should decide the income and asset redistribution.

Apparently, however, this value is held in prominence only when all sectors of the economy are prosperous and enjoying a "fair share" of the national income. When income of one sector declines or is under pressure (as in the case of agriculture) society appears to give more prominence to another value--that gross inequalities of income should be mitigated.²⁶ Actually, this value was being largely attained through the price system, but when this means is not fully satisfactory other techniques are brought into operation.

Society was willing through the political process to employ the resources of the national government to achieve this goal.

Another value that is held by agriculture and society in general is that more efficiency and more productivity are desirable. This value has sparked our nation into becoming productively efficient. This has taken place in agriculture as well as in industry.

²⁶Dale E. Hathaway, "Agricultural Policy and Farmer's Freedom", Journal of Farm Economics (November, 1953), pp. 496-511.

Both of these prominent values of our society are closely related to our farm programs. If the farm programs are to be considered means to a desired end, then all farm programs should be analyzed on the basis of their probability of contributing to these ends.

In order to understand the significance of the data presented in the next chapter the possible effects of support and control programs on income distribution and efficiency will be discussed.

Possible Effects on Income Distribution

Since this was discussed in some detail in Chapter II only a brief summary will be given here.

- (1) Income transfer from non-farm sectors to the farm sector of the economy is one of the primary purposes of a support and control program.

This is accomplished in two ways. First, agricultural support programs are financed by taxing the entire society for the benefit of one sector, agricultural sector. The more costly the program the greater is the transfer of income. Although this study is devoted to control and support programs it should be noted that income transfer is taking place in the education, conservation, and credit programs designed for agriculture.

Second, control of acres is designed to control the supply. If supply of the commodity is successfully controlled, the consumer must pay a higher price in the market place for the controlled commodity. This higher price is also a form of income transfer from the consumer to the producer.

If payments are made for supporting price and if supply is controlled income is transferred from the non-farm sector into agriculture.

- (2) The income transfer often overlooked is the one which takes place within agriculture.

First, there is a vast difference between regions in their ability to make use of technology. Cotton production in the West compared with the Southeast is an example. If one area can make more use of technology it can continue to increase production relatively by increasing yield even though acreages remain constant. This results in a gain in wheat income in one region relative to the other.

There is another side to this situation, however. If one region is slow in adopting new techniques, marketing quota-acreage allotments can keep this region in production despite competition from the more progressive regions.

The control program might give the less progressive regions time to adopt new technology. This might even permit the development of new techniques which would allow the less progressive region to compete successfully with other regions. Burley tobacco areas offer examples of this.

If capital is the limiting factor in the less progressive region, a supported price above the equilibrium level might alleviate the situation. In an unsupported market the progressive regions increase production first and most rapidly as a result of new technology. The increased supply which results depresses the market price. The less progressive regions suffer a more than proportionate decrease in income because they face the lower price without the benefit of reduced costs and increased production. Therefore, it becomes even more difficult for the less progressive region to invest in new technology.

With a supported price the less progressive regions can secure a margin of profit regardless of the activity of the more progressive regions. If the margin is large enough some capital accumulation is possible. If this capital is invested in technological improvements there tends to be equalization between regions in the extent to which new technology is used. Associated with technological advances is improvement in income.

With production controls the production increases of the more progressive areas are stopped or slowed considerably. If minimum acreages are used production could remain constant or increase in the less

progressive areas. Thus, a further income transfer is encouraged.

Without the price support program the progressive area would continue to increase first and more rapidly than other regions. The least progressive region could be forced out of production entirely or its income severely reduced.

Second, there is a great difference between regions in availability of alternative crops and farm enterprises.

In some areas (such as western Kansas) wheat is the only satisfactory income producing crop. When wheat production is reduced in these areas the obvious effect is a nearly proportionate reduction in income.

In other areas (such as Michigan) alternative crops are available which would produce nearly as much income as wheat. Corn, beans, soybean, barley are examples of these crops. Marketing quota-acreage allotments would have a greatly differing income effect in the two regions.

The alternative crops which are used on the diverted acres can cause an income transfer. Acres taken out of cotton and wheat were planted to feed grains, primarily. This increased the supply of feed and reduced the price with a resulting hardship on the farmers who depend upon feed grains for their major income. It can be argued that an income transfer exists from producers of unsupported commodities to producers of supported crops.

Third, the potential overplanting varies between regions. In regions where small wheat acreages predominate, extensive overplanting is more probable because the minimum acreage provision would permit more overplanting without penalty. In regions of large wheat acreages the penalty for non-compliance over the minimum acreage greatly discourages overplanting.

The state which has a high percentage of small wheat acreages (less than the minimum) can consistently overplant its allotment. A state which is composed of large units is much less likely to overplant in total, and may frequently underplant because of abandonment.

This allows the regions with a high percentage of smaller wheat acreages to gain from the trend adjustment provided in computing allotments.

Fourth, the transfers from farm-to-farm are similar to those taking place between regions. In the surge toward specialization which thrived in the 1940's the marginal producer who found it difficult to specialize was left further and further behind.

Marketing quotas and allotments stopped this trend in the controlled crop. If the program prevented the marginal producer from being eliminated it permitted him to retain a crop income which he would have lost.

If with the use of minimum acres as in wheat many small producers and marginal producers can maintain their normal production while the more specialized are being curtailed, income distribution would definitely be affected. The degree of effect would again depend on the availability of alternative crops.

The farmer who is able to use new technology has an advantage from the standpoint of yield (and income) over one who cannot or will not. The history of new technology has indicated that first users reap the gain. The late adopters are forced to use the new technology without gain or be eliminated.

If the program permits the farmers to retain the gain it will increase farm income.²⁷ By eliminating uncertainty and allowing the marginal producer to adopt more efficient production techniques, the program would affect the distribution of gains from new technology. From the long time point of view this permits the small farm to gain in income relative to the large farm.

(3) Capitalization of allotment.

If the allotment is of a nature that would add value to the farm, the very existence of the allotment is an asset. The amount depends upon the size of the allotment and to the extent which the price exceeds the equilibrium price.

Not all allotments are of this nature, but tobacco is an example of a crop where this has occurred.

Possible Effects on Efficiency

Several concepts of efficiency have been widely discussed. A measure of disagreement exists regarding the presence of specific inefficiencies and the degree of effect. A few of the possible effects on efficiency will be outlined.

- (1) If the supported price is above the equilibrium price a supply of a commodity will be produced which is in excess of the amount demanded at that price. The result is an accumulation of surpluses. If surpluses are present the wrong combination of products are being produced according to the preferences of the consumer. A misallocation of the nation's resources exists.

²⁷G. L. Johnson, "Burley Tobacco Control Programs, Their Overall Effect on Production and Prices, 1933-50", Bulletin 580 (Lexington, Kentucky: Kentucky Agricultural Experiment Station, 1952), pp. 79-80.

If controls successfully reduce total agricultural production by causing a resource to be unused, (such as land) excess capacity is present. These are generally called inefficiencies.

- (2) Certain regions seem to be adapted to specialization of a particular commodity. Capital is available, natural advantages exist, and new technology is used quickly and effectively. These regions tend to increase production, increase size of operation, and reduce costs below other regions. They become highly efficient.

In this particular region and on these specific farms if a control program stops this trend toward more specialization it is causing a curtailment of potential efficiency. If the trend is reversed inefficiency is promoted.

However, outside the region of specialization, efficiency in the production of that commodity may be encouraged by the curtailment of the specialized region. Without a support or control program the specialized region could increase the production, depress the price, and force less specialized regions out of production. (See item 2, Effects on Income Distribution).

The control program would stop or slow down the increase in production in the specialized region, and with minimum acreages the less specialized might gain relatively. The supported price would allow a margin of profit in the less specialized region. This could result in capital accumulation which might be invested in new technology. As a result, instead of being forced out of production the less specialized region may become adequately efficient enough to permit competing successfully even without controls. Thus, support and control programs may discourage efficiency in some ways, and encourage it in other ways.

In Chapter V, the data collected on 978 Michigan farms will be presented. The concepts of income distribution and efficiency outlined in this chapter will be used as a basis for drawing conclusions from the data. These questions will be asked:

- (1) Is there evidence of the movement of wheat acres from large specialized farms to the smaller less specialized farms?
- (2) Is there evidence of the movement of wheat acres from one area in Michigan to another?
- (3) Is there evidence of the movement in wheat acres from more specialized regions of production such as Kansas to less specialized regions as Michigan?
- (4) If these movements exist what is the probable effect on efficiency and income distribution?

CHAPTER V

THE DATA

In preceding chapters an explanation was given of four problems confronting agriculture. The surplus problem, the trade problem, the production control problem, and the discrimination problem. It was suggested that these are problems resulting from government support and control programs. A brief explanation was given of studies conducted in other areas in an attempt to find answers to some of these problems. Frequent reference was made to the cotton and tobacco marketing quota and acreage control programs.

This study is primarily devoted to the discrimination problem. In this chapter the data collected from 978 Michigan farms will be examined. Conclusions will be drawn from this data regarding shifts that are taking place in wheat acreages in Michigan as a result of the marketing quota-acreage allotment program. A brief look will be taken at the wheat situation in the corn belt and western regions to see if the same shifts are taking place between regions that are apparent within the state of Michigan.

The trends, or shifts, that are observed will be analyzed in terms of their probable effect on income distribution and efficiency.

Shifts In Acreage Prior to Allotments

It has been suspected that farmers anticipated the establishment of marketing quotas in 1954 in time to build up their historical wheat acreage base. An examination of Table 1 shows no evidence that this has happened. All areas increased their wheat acreage in each succeeding year prior to allotments.

TABLE 1.-Shifts in acreage prior to allotments--All sample farms

Totals for farms in sample					Totals for counties		
Area	1951 wheat acres	1952 wheat acres	1953 wheat acres	% 1953 acres of 1951 acres	County acres 1940	County acres 1950	% 1950 acres of 1940 acres
Kalamazoo	4433	4528	4882	110%	19,119	31,139	163%
Livingston	4429	4627	4628	105%	12,306	20,471	166%
Sanilac	3638	4648	4981	137%	34,245	60,657	177%
Gratiot- Isabella	5814	5907	6432	111%	24,655	58,938	239%
Total (all areas)	18,314	19,710	20,923	114%	90,285	171,205	190%

Michigan 1953 acres 123% of 1951 acres.

On first inspection this appears to be evidence of an attempt to build up allotments. However, consideration must be given to the trend that existed in Michigan prior to 1951. In the 10-year period from 1940-1950 the four areas in the sample increased their wheat acres by 90 per cent. During this period the entire state of Michigan increased its wheat acreage by 50 per cent. The increase in acreages that took place in 1951, 1952, and 1953 were merely continuations of a trend that had existed for the previous ten years. If anything, the trend showed signs of slowing down during the years preceding allotments.

For the state of Michigan as a whole the 1953 acres were 123 per

cent of the 1951 acreage. In the four areas studied the 1953 acreage was 114 per cent of the 1951 acreage. These areas at least increased their acreage at a slower rate than the state of Michigan as a whole, unless new wheat acres account for the difference.

The sample farms in Sanilac county increased acreage 137 per cent from 1951 to 1953. This is a cash grain area that has been expanding wheat production very rapidly, partly due to drainage projects.

When the farms were divided into two categories, those with 15 acres and under of wheat and those over 15 acres, a slight difference can be observed regarding their activity prior to allotments. (See Table 2).

TABLE 2.-Comparison of wheat acreage changes on farms with 15 acres and under of wheat with farms of over 15 acres of wheat prior to allotments

	1952	1953	1954
Percent of sample farms increasing			
15 wheat acres and under	30%	33%	17%
Over 15 wheat acres	55%	57%	5%
Wheat acres percent of previous year			
15 wheat acres and under	98%	99%	156%*
Over 15 wheat acres	110%	108%	39%*

*Many farms moved from over 15 wheat acres category to the 15 wheat acres and under category.

The farms possessing over 15 acres of wheat appeared to be expanding wheat acreage at a faster rate than those possessing 15 acres and under. During the years 1952 and 1953 the farms having 15 acres of wheat and under did not increase their total wheat acreage. The farms having over 15 acres of wheat showed a 10 per cent increase in wheat acres over the previous year in both 1952 and 1953.

Conclusion: Examination of the total sample shows no evidence of attempts to build up wheat historical base in anticipation of allotments. The increase which did take place appeared to be continuations of a trend that had existed in the previous ten years.

This greater increase on farms having over 15 acres of wheat could be interpreted as (1) a greater move toward specialization on the larger farms, or (2) it might imply an attempt to build an historical base on the larger farms. This, however, is merely an indication and not evidence that such an attempt actually exists.

Relation of Farm Size to Allotment Size

The two areas classified as dairy and general farming--areas 1 and 2--show larger average size farms than areas 3 and 4 which are classified primarily as cash grain areas. (See Table 3).

There appears to be practically no difference in the percentage of farms 70 acres and under in the four areas. However, the 180 acre division shows considerable difference. In area 1 and area 2 nearly a third of their farms are over 180 acres. There appears to be a marked correlation between the number of farms with 15 acre allotments and under and the size of the farm. Area 1 has an average size farm of 57 acres greater than area 4, and has 30 per cent fewer farms with allotments of 15 acres and under than does area 4.

Conclusion: There is a definite relationship between the size of the farm and the size of the allotment. The smaller the farm the greater the probability of having an allotment under 15 acres. This, of course, is as expected, but it is reassuring to find verification

in the data.

TABLE 3.-Relation of farm size in each area to allotment size (all figures for 1957)

Total Acres in Farms					
Area	Average Farm Size*	% of farms 70 acres and under to (small farms)	% of farms 70.1 acres to 180 acres (medium farms)	% of farms 180.1 acres and over (large farms)	% of farms under 15 acre allotment
1. Kalamazoo Total farms (163)	157	20	49	31	53
2. Livingston Total farms (211)	153	17.5	55	27.5	73
3. Sanilac Total farms (251)	128	18	67	15	80
4. Gratiot-Isabella Total farms (353)	100	20	72	8	83

*Total acres.

Shifts in Wheat Acres

Each of the three size groups were increasing in the average wheat acres from 1951 to 1953. (See Table 4).

The decrease in wheat acres as a result of marketing quotas in 1954 was approximately 40 per cent in each of the three size-of-farm groups. However, since 1955 there has been a steady increase in the average wheat acres per farm on the small and medium farms while on the large farms

there has been a decrease in average wheat acres per farm.

TABLE 4.-Shifts in wheat acres related to farm size by years

	1951	1952	1953	1954	1955	1956	1957	Percent decrease in 1957 from 1951-53 average
Sample farms 70 acres and under*								
Number of farms--403								
Total wheat acres=	4310	4644	5264	3185	2962	3337	3833	
Average wheat acres	10.7	11.5	13.0	7.9	7.3	8.3	9.5	19%
Sample farms 70.1 to 180 acres								
Number of farms--486								
Total wheat acres=	9653	10,593	11,017	6725	6085	6446	6966	
Average wheat acres	19.9	21.8	22.7	13.8	12.5	13.3	14.3	33%
Sample farms 180.1 acres and over								
Number of farms--89								
Total wheat acres=	4351	4471	4642	2814	2550	2617	2451	
Average wheat acres	48.9	50.2	52.1	31.6	28.6	29.4	27.5	46%

*Crop acres

Wheat acres (when referring to the sample) are less than planted acres and more than harvested acres. These are the June 1 acres after wheat has been destroyed in order to comply with allotments.

It is significant to note that in 1957 the small farms are only 19 per cent under their 1951-1953 average wheat acres. The medium farms

are 33 per cent below their 1951-1953 average wheat acres. The large farms are 46 per cent below their 1951-53 wheat acres.

Table 5 shows that wheat acres were increasing in all areas in 1951, 1952, and 1953. Marketing quotas were applied in 1954 with a

TABLE 5.-Shifts in wheat acres and allotment by area

	Number of farms	1951	1952	1953	1954	1955	1956	1957
Kalamazoo Acres	163	4433	4528	4882	2911	2791	2856	2925
Allotment					3151	2926	2895	2971
Livingston Acres	211	4429	4627	4628	2707	2490	2476	2623
Allotment					3008	2816	2594	2662
Sanilac Acres	251	3638	4648	4981	3113	2562	3054	3224
Allotment					3295	2947	2832	2931
Gratiot-Isabella Acres	353	5814	5967	6432	3993	3754	4018	4478
Allotment					4167	3673	3572	3623
Total (all areas) (acres)	978	18319	19710	20923	12724	11600	12404	13250
Total allotment					13621	12363	11893	12187

resulting 40 per cent decrease in wheat acres. From 1955 to the present, wheat acres have again been increasing in each of the areas even though acreage allotments and marketing quotas have not been increased.

Table 6 shows that areas 3 and 4 have been increasing wheat acres per farm more rapidly than areas 1 and 2. In 1957 area 3 and 4 both signifi-

cantly exceeded their allotment while areas 1 and 2 were complying with their allotments.

TABLE 6.--Comparison by area--wheat acres percentage of allotment, 1954-57

All Sample Farms	Number of Farms				
		1954	1955	1956	1957
1. Kalamazoo	163				
% of allotment planted		92	95	98	98
% of farms overplanting		15	21	26	28
2. Livingston	211				
% of allotment planted		90	88	95	99
% of farms overplanting		25	29	32	44
3. Sanilac	251				
% of allotment planted		94	86	108	110
% of farms overplanting		29	32	50	63
4. Gratiot-Isabella	353				
% of allotment planted		96	102	112	124
% of farms overplanting		27	45	50	64
Total--% of allotment planted		93	94	104	109
% of overplanting		26	34	42	53

Entire sample exceeded 1957 wheat allotment by 9% (acres planted)

Entire **state** of Michigan exceeded 1957 wheat allotment by 8% (acres harvested)

Area 1 and area 2 are increasing their acreages but the trend is at a slower rate. If the trend continues, areas 1 and 2 are likely to exceed their allotments in 1958.

In 1957 over half of the farms in areas 3 and 4 are overplanting their allotments. Considering all four areas together the entire sample exceeded the wheat allotment in 1957 by 9 per cent. When considering the state of Michigan as a whole, the 1957 allotment was exceeded by

8 per cent.

Conclusions: (1) Areas 3 and 4 have gained in wheat acreages relative to areas 1 and 2 with the result that a greater percentage of the wheat acreage exists in these two areas than was the case prior to allotments. There are two possible reasons for this; first, areas 3 and 4 have more small farms. With the 15 acre minimum established for acreage allotment and marketing quotas, these two areas have more farms able to take advantage of the minimum law. Second, areas 3 and 4 are cash grain areas where wheat at present prices is a more attractive crop relative to other alternatives. (2) The trend toward increasing wheat acres in each area since 1955 is apparent. There appears to be no reason why this trend should not continue until the maximum wheat acres under marketing quota-acreage allotments are produced in Michigan. This trend indicates two things. First, more farmers are becoming aware of the opportunities under the 15 acre minimum. Second, wheat is continuing its increase in popularity as a cash crop in Michigan.

The wheat production on the larger farms is being curtailed to a much greater degree than the wheat acreage on the smaller farms. The implications involved are: (1) a transfer of income from the larger farms to the smaller farms, (2) a stopping or reversal of the trend towards specialization, and (3) with the assumption that the larger farms are more efficient, this means sacrificing efficiency of production.²⁸

²⁸See Chapter IV for a discussion of the income transfer specialization and efficiency aspects.

Overplanting

The small farms began exceeding their allotments in 1955, only one year after marketing quotas were installed. In 1957 68 per cent of these farms overplanted. As a result, all small farms in the sample exceeded their allotment by 39 per cent. (See Table 7).

TABLE 7.- Comparison of overplanting on sample farms of the three size groups

	Small farms 70 acres and under		Medium farms 70.1 to 180 A.		Large farms 180.1 and over	
	% of farms	% of allotment	% of farms	% of allotment	% of farms	% of allotment
1954	32	96	24	94	6	90
1955	45	104	30	95	10	88
1956	56	123	37	102	6	91
1957	68	139	50	109	5	85

The medium farms began exceeding their allotments one year later than the smaller farms. In 1957 this group of farms exceeded its allotment by 9 per cent.

The large farms have not exceeded their total allotment since marketing quotas were applied. These farms have actually been underplanting their allotments by approximately 10 per cent.

Fifty-three per cent of all farms included in the sample overplanted in 1957. Table 8 shows that areas 3 and 4 had the most overplanting with over half of the farms committing the practice. When isolating these farms that overplanted and considering them separately, it appears that they are planting about the same wheat acreage as they had planted on the average in the years 1951-53, prior to allotments.

TABLE 8.-Comparison of percentage of 1957 wheat acres to their 1951-53 average wheat acres on farms that overplanted in 1957

Area	% of farms overplanting 1957	1951-53 average acres	1957 acres	% of 1951-53 average
1. Kalamazoo	28	511	522	102
2. Livingston	44	1,268	1,207	95
3. Sanilac	63	2,251	2,092	93
4. Gratiot- Isabella	64	2,762	2,766	100
Total(all areas)	53	6,792	6,587	97

53 per cent of farms overplanted in 1957.

These farms exceeded their allotment by 68 per cent.

In 1957, 76 per cent of the farms in the sample had 15 acres allotment or less. These farms operated 58 per cent of the wheat acreage included in the sample. (See Table 10b). Over half of the farms with 15 acres of allotment and under are overplanting in each of the four areas in 1957. (See Table 9).

There appears to be more room for expansion in wheat acres in areas 1 and 2 since three-fourths of the farms in areas 3 and 4 are now overplanting. However, the potential excess of allotment is greater in areas 3 and 4. (See Table 13).

The rate of overplanting has increased much more rapidly in areas 3 and 4. There could be several reasons for this. First, there are more small farms with a greater potential for increase with a 15 acre minimum of wheat.

TABLE 9.-Overplanting on farms 15 acres allotment and under (sample farms)

Area	1954	1955	1956	1957
1. Kalamazoo				
% farms overplanting	29	38	48	51
% of their allotment	173	160	179	172
% of allotment--all farms under 15 A.	97	108	118	121
2. Livingston				
% farms overplanting	36	39	43	56
% of their allotment	185	157	180	176
% of allotment--all farms under 15 A.	102	99	107	120
3. Sanilac				
% farms overplanting	37	40	61	74
% of their allotment	152	156	163	173
% of allotment--all farms under 15 A.	100	94	120	139
4. Gratiot-Isabella				
% farms overplanting	36	51	60	75
% of their allotment	173	174	178	181
% of allotment--all farms under 15 A.	106	113	128	148
Total				
% farms overplanting	35	44	55	68
% of their allotment	169	165	174	177
% of allotment--all farms under 15 A.	102	104	120	136
Overplanting on farms with over 15 acre allotment				
Total				
% farms overplanted	11	9	4	6
% of their allotment (all farms over 15 acre allotment).	96	93	94	99

Second, areas 3 and 4 are cash grain areas. With the recent improvements in technology (small combines, use of fertilizers, etc.) wheat has become a more attractive crop in this area with the present supported price.

With a high support price it becomes preferred to corn, dry beans, oats, or barley, which are alternative crops for areas 3 and 4. In a cash grain area a rapid change can be made from one crop to another.

Third, areas 1 and 2 are primarily dairy and livestock areas. These areas are more stable and do not change as quickly because of the investment in the livestock enterprises. Although these areas can raise high yielding wheat, this crop is not as likely to be a determining factor in the farm planning.

The farms that are overplanting appear to be doing so in about the same degree in each area. These farms are exceeding their allotments approximately 75 per cent. The difference between areas is largely due to the number of farms that are overplanting.

Because there is this difference in number, areas 3 and 4 are approaching the point where all farms under 15 acres are exceeding their allotment by nearly 50 per cent, whereas areas 1 and 2 are exceeding allotments by approximately 20 per cent.

When looking at the farms divided into two groups, 15 acres and under allotment, and over 15 acres allotment, it becomes apparent that the farms in the smaller group are increasing their wheat acreage relative to the larger. In the four-year period, the number of farms in the smaller group has increased from 686 to 734. (See Appendix, page 77). The per cent of overplanting has increased steadily as well as the degree to which the group exceeds its allotment. In 1957 the smaller group exceeded its total allotment by 36 per cent, with 68 per cent of the farms in this group overplanting.

For the group with over 15 acres allotment there has been no increase in overplanting and a slight decrease seems apparent. Never

has this group exceeded its allotment although in 1957 it planted 99 per cent of the specified allotment.

Conclusions: Areas 3 and 4 have exceeded their allotments to a greater degree and have shown a more rapid increase in overplanting. Second, apparently the farms with over 15 acre allotments are held in check by penalties. Third, the number of farms with 15 acre allotments and under that overplant their allotments are increasing each year. It appears that more farmers either are becoming aware of the 15 acre minimum privilege or are becoming able to take advantage of this privilege. Fourth, it appears that farmers believe that compliance for the purposes of price support is less important each succeeding year. Fifth, it appears that the smaller the farm the greater the percentage of farms overplanting, and the larger the percentage that these farms exceed their allotments. The larger farm groups have not exceeded their allotments but have consistently underplanted. With the exception of the larger group of farms, it seems that the degree of overplanting is increasing each successive year. As would be expected, as the degree of overplanting increases, the percentage that the group exceeds their allotment also increases. Sixth, over half of the farms in the sample are overplanting their allotments, and are planting about the same acreage as they did prior to allotments. The overplanting is the most severe in areas 3 and 4, the cash grain areas.

1957 Acres Compared With Preallotment Acres

Table 10a is concerned with farms that had 15 acres of wheat and under as an average for '51, '52, and '53. There has been an increase in the disparity between areas regarding the percentage of farms under

15 acres. (See Table 10b). This indicates that there were more farms on the 15 acre border in area 4. These farms dropped below the

TABLE 10a.-Sample farms with less than 15 acres of wheat, 1951-53 average, compared with the 1957 wheat acreage of the same farms

	Number of sample farms 15 acres and less	% of farms 15 wheat acres and under 1951-1953 (average)	1951 to 1953 average wheat acres	1957 wheat acres	% 1957 wheat acres is of 1951-53 average wheat acres
1. Kalamazoo	62	38	534	498	93
2. Livingston	101	48	975	859	88
3. Sanilac	137	55	1,279	1,369	107
4. Gratiot- Isabella	196	55	1,911	2,126	111
Total (all areas)	496	51	4,699	4,852	103.5

15 acre mark when allotments were applied. Table 10a indicates that the farms that were under 15 acres in '51, '52, and '53 have changed their production patterns very little. In 1957 they were planting approximately the same acres as they were in 1951-53. Areas 1 and 2 were slightly under the 1951-53 average while areas 3 and 4 were exceeding their 1951-53 average by approximately 10 per cent. The entire sample exceeds its 1951-53 average slightly, by approximately 4 per cent.

Conclusion: The farms that had small wheat acreage in 1951 and 1953 are planting approximately the same wheat acreage in 1957 under marketing quotas. The cash grain areas, 3 and 4, again show the greatest increase.

TABLE 10b.-Comparison of percentage of sample farms with 15 wheat acres and under for 1951-53 (average), 1954, and 1957

Area	1951-53 (average) % of farms with 15 wheat acres and under	1954 % of farms with 15 wheat acres and under	1957 % of farms with 15 wheat acres and under	% of sample total wheat acres on these farms in 1957
1. Kalamazoo	38	51	52	39
2. Livingston	48	68	73	54
3. Sanilac	55	73	80	68
4. Gratiot-Isabella	55	78	83	72
Total for area	51	70	76	58

Trends in Allotment Size

Those farms in each area that had exceeded allotments for each of the four consecutive years were separated and examined. (See Table 11, Part A). Nearly one-fourth of the farms in area 4 had exceeded their allotment every year since marketing quotas were applied. However, there was no apparent indication from the 1954-57 data that allotments were being increased as a result of building a larger historical base.

In the allotments given the areas for 1958 there appears to be indications of redistribution of allotments. (See Table 11, Part C).

Area 1 received a very slight increase, and area 2 was decreased. However, area 3 received a 2.5 per cent increase while area 4 received a significant 9 per cent increase.

This corresponds with the degree of overplanting allotments. Area 1 and 2 have not exceeded their allotments. Area 3 has exceeded its allotment by approximately 10 per cent for two years. Area 4, which received the significant 9 per cent increase in 1958 allotments, has exceeded its allotment for the last three years, reaching a 24 per

TABLE 11.-Trends in Allotment Size

	Number of farms	1954 allotment	1955 allotment	1956 allotment	1957 allotment	1958 allotment	Wheat Acres % of allotment 1956
<u>*Farms exceeding allot-</u> <u>ment 4 consecutive years</u>							
Part A	Area 1	19	106	106	106	106	201
	Area 2	21	165	142	148	148	168
	Area 3	44	241	238	233	233	209
	Area 4	82	499	469	480	480	198
<u>Entire sample allotment</u>							
Part B	Area 1	163	2,926	2,895	2,971	2,971	98
	Area 2	211	2,816	2,594	2,662	2,662	99
	Area 3	251	2,947	2,832	2,931	2,931	110
	Area 4	353	3,673	3,572	3,623	3,623	124
	Total	978	12,362	11,893	12,187	12,187	108
<u>Total county allotment</u>							
Part C	Area 1	25,302	23,520	23,310	23,255	23,500	1
	Area 2	22,261	21,142	19,243	19,755	19,315	- 1
	Area 3	58,489	52,642	49,850	48,295	49,520	2.5
	Area 4	48,164	45,057	44,288	41,581	45,287	9
Part D	Michigan	1,093,618	1,004,750	969,478	957,020	965,008	108**
	Kansas	11,874,832	10,504,278	10,587,206	10,615,188	10,638,208	87 **

*These are farms that have exceeded their allotment every year.

**These compare wheat acres in 1956 with the allotment for 1956.

cent excess in 1957.

Allotment information for 1958 was not available for the farms included in Part A, Table 11, when the data was collected. In view of the apparent redistribution of the allotments exhibited in 1958 for these counties, it is possible that the farms included in Part A (those which exceeded their allotment every year) benefited more than the entire group in area 3 and area 4 where allotments were increased.

There appears to be no shift in allotments relative to the states, Michigan and Kansas.

Conclusions: The first four years of marketing quotas on wheat gave no conclusive demonstration that allotments are being changed by building larger historical bases through overplanting. In 1958, however, this evidence appears to exist. The redistribution of allotments in 1958 coincides with the extent of overplanting in the counties included in this study. This is an indication that similar redistribution of allotments will extend to the individual farms and to the regions of wheat production if there is a large difference in the relative rate of overplanting.

Regional Comparisons of Wheat Acreage Shifts

The data collected from the 978 farms in Michigan provide abundant evidence that wheat acres are shifting from the large farm to the small farm, and from areas of larger farms (which by assumption we said are more specialized) to the areas of smaller, less specialized farms.

Since this is actually happening in Michigan, it can be expected to take place between regions.

Table 12 shows that the specialized wheat states (Kansas, North

Dakota, Nebraska, and Oklahoma are the four largest wheat producing states) are receiving an allotment which is a higher percentage of the historical base than are the corn belt states.

TABLE 12.-Comparison of regional harvested acreage and allotments

States	Per cent of farms 15 A. and under 1955	Per cent 1958 allotment is of 1945-54 wheat acres	Per cent Harvested acres for 1955-56 and '57 is of allotment for the same years	Per cent harvested for '55, '56 and '57 (acres) is of '45 to '54 average
Michigan	84	79	102	82
Kansas	22	83	74.5	81
Ohio, Indiana	81, 77	77	100	78
Illinois, Michigan	70, 84			
Kansas, N. Dakota	22, 3	81	81	65
Nebraska, Oklahoma	26, 23			

In spite of this the corn belt states have harvested 100 per cent of the allotment or more for the past three years on an average. The wheat states have a higher degree of abandonment and the harvested acreage falls considerably short of the allotment. As a result the corn belt states are growing a significantly higher percentage of their historical base than are the specialized wheat states.

For the past three years Kansas has harvested approximately 75 per cent of the states allotment. This amounts to 2,659,552 acres lost on the basis of 1958 allotments. The acres abandoned in Kansas are nearly three times the Michigan allotment.

However, this has not been reflected in the size of the allotments to the states because the 10 year historical average is based on seeded acres. Table 12 is computed from harvested acres.

If actual production in bushels was used, the difference would be even greater. The less specialized wheat states have been increasing yields more rapidly than the wheat belt states. Michigan's average production for the 1954-1956 period was 132 per cent (not shown in the table) of the 10 year period prior to 1954. During the same three year period Kansas produced only 79 per cent of the 10 year pre-quota period.

If planted acres are used for computation, the difference between the state's percentages disappears. (See appendix, page 74). Allotments are approximately 75 per cent of the ten year pre-quota planted acre base for all states. All of the states included in Table 12 planted approximately 100 per cent of their allotment (99-101) in the three year period, 1954-1956.

Conclusions: Since marketing quotas in 1954, a higher percentage of the wheat produced in the United States is being produced in the less specialized wheat states. There are probably several reasons for the higher percentage of acres harvested in the less specialized states:

- (1) There has been a much higher degree of abandonment in the wheat belt states.
- (2) A trend toward rapidly increasing wheat acres existed in most of the less specialized states before 1954.
- (3) The less specialized states have more farms under 15 acres. These states have more potential for percentage increases due to legal overplanting under the minimum acre provision.

Potential Wheat Increases in Michigan

Michigan was rapidly increasing wheat acreage prior to allotments.

The collected sample provides evidence that the trend **still** exists. The trend prior to allotments was on the larger farms (see Table 2), but since marketing quotas the smaller farms have been taking advantage of the 15 acre minimum to a greater extent each successive year.

This raises the question as to how far this trend can go before it is stopped by 15 acre limitation. Table 13 shows that the entire sample could exceed its 1957 allotment by 36 per cent before reaching the limit.

TABLE 13.-Potential increase in wheat acres under 15 acre and 30 acre minimum acreage

	Area 1	Area 2	Area 3	Area 4	Total sample
Maximum possible percentage of 1957 allotments if all farms with 15 acres and under allotment grew 15 acres of wheat	114	133	137	156	136
Percentage of harvested acres in 1957 is of 1957 allotments	98	99	110	124	109
Maximum possible percentage of 1957 allotments if all farms 30 acres and under grew 30 acres with the 30 acre minimum.	172	243	260	286	245
Percentage of 1957 allotment if all farms with 30 acres allotment and under returned to their 1951-53 average wheat acres with a 30 acre minimum.	137	162	147	162	152

The farms in the sample have an upper limit of 16,574 acres. Thirteen thousand two hundred and fifty acres of wheat are now being harvested (1957). In 1951, 18,314 acres were harvested.

Extending these same percentages to the state indicated that Michigan has the possibility of exceeding its 1957 allotment by 344,527 acres.

This would give a possible 1,291,547 acres compared with the 1945-54 **average** of 1,208,000 acres.

The 344,527 acres represent an increase of 36 per cent over the 1957 wheat allotment in Michigan. This, however, would only be 3.5 per cent of the Kansas allotment.

Table 13 shows considerable difference in the potential increase between areas of Michigan. While area 1 has the possibility of increasing by 14 per cent, area 4 has a 56 per cent potential increase of the 1957 allotment.

This potential increase computed in Table 13 assumes that allotments will remain the same. If one area or region builds a larger historical base it can increase its potential relative to other areas.

A bill designed to curtail this latter shift was introduced in 1957. It was considered but not adopted.²⁹ By not permitting this build up of a historical base a relative gain in allotments would be prevented.

However, another bill (likely to have the opposite effect) did receive favorable action from the 1957 Congress.

USDA outlined general provisions of recent legislation permitting farmers whose wheat acreage allotment is less than 30 acres to grow up to 30 acres of wheat for use exclusively on the farm where produced.³⁰

Although none of the wheat could be sold off the farm under the 30 acre minimum provision, it offers a greater potential for overplanting and is likely to accentuate the shifts between areas. It is impossible to know the upper limits because the amount of wheat that could be used

²⁹A bill providing that wheat acres planted in excess of allotments not be counted in setting future allotments will be considered by a House Agriculture subcommittee next month. It is by Aufuso (D., N. Y.), Washington Farm Reporter, Report no. 679, May 25, 1957.

³⁰"The Daily Summary", USDA, August 30, 1957.

on the farm cannot be ascertained. Table 13 shows that Michigan would exceed its 1957 allotments by 50 per cent if all farms under 30 acre allotments returned to their 1951-53 average wheat acres.

The maximum potential (which is unlikely due to the feeding limitation) would be 2.5 times the 1957 allotment.

Another way Michigan can increase wheat production is through new farms adding the enterprise to their operations. There are 140,000 farms (approximately) in Michigan, half of which are producing wheat. Many of the non-wheat farms are too small, others do not have soil suited for wheat production. However, these remaining farms offer a source for a great increase in wheat production in Michigan under the 15 acre or 30 acre minimum.

Conclusion: The trend toward overplanting is apparent. More acres are overplanted each year. As overplanting increases, the small farm gains relative to the large farm. The less specialized areas gain relative to the more specialized areas. This gain takes place in two ways: (1) the harvested acres are a higher percentage of allotted acres, and (2) larger historical bases are built and larger relative allotments are received as a result. Michigan and similar states still have a great potential for increasing wheat acres. If the present trend continues more of this potential will be used in the future. There are three ways that Michigan can increase wheat acres under the marketing quota-acreage allotment program: (1) All eligible farms can increase to the 15 acre minimum, (2) low allotment farms able to feed wheat may increase above 15 acres to the 30 acre minimum, and (3) some of the 70,000 farms not producing wheat may start producing under the 15 acre or the 30 acre minimum.

CHAPTER VI

SUMMARY AND CONCLUSIONS

The records of 978 farms in four areas of southern Michigan were compiled and examined. This data was made available through the cooperation of the county ASC offices. The harvested wheat acreage from 1951 through 1957 and the farm allotments from 1954 through 1957, were examined as a basis for supporting the hypothesis: (1) since the use of marketing quotas a greater percentage of the wheat acres are located on farms with less than 15 acre allotments, and (2) wheat acres are shifting from areas of specialized wheat production to areas of less specialized wheat production as a result of the marketing quota-acreage allotment program.

Shifts in Wheat Acres

The evidence presented in Chapter V indicates three types of relative wheat acreage shifts taking place.

Shifts from large to small farms.-There is a shift of wheat acres away from the larger farms to the smaller farms in Michigan. Farms of over 180 acres have had wheat acreage curtailed by 46 per cent from their 1951-53 average. Farms 70 acres and under have been curtailed only 19 per cent. In 1957 the farms 70 acres and under exceeded their allotment by 39 per cent, with 68 per cent of the farms in this category overplanting. The farms over 180 acres underplanted allotments by 15 per cent.

There appears to be several reasons for these shifts. First, because of the production control programs the market price of wheat has been very close to the supported price in recent years. This price has made wheat attractive relative to other crops, and has eliminated an important reason for complying with allotments. In addition the price program has eliminated a degree of uncertainty which has encouraged small farms to undertake the production of wheat.

Second, there appears to be a definite relationship between the size of the farm and the size of the wheat acreage on that farm. Prior to allotments in 1953 the farms 70 acres and under averaged 13 acres of wheat. The farms 70.1 to 180 acres averaged 23 acres while the farms over 180 acres were averaging 52 acres of wheat. The marketing quotas in 1954 and through 1957 have reduced the degree of difference in the size of wheat acreage between the three groups. The farms 70 acres and under averaged 9.5 acres; the farms 70.1 to 180 acres averaged 14.3 acres; and, the farms over 180 acres averaged 27.5 acres in 1957.

Since the small farm has the smallest acreage of wheat it has the most opportunity to take advantage of the 15 acre wheat minimum under the law. In some areas these small farms have greater acreages of wheat than were these same farms prior to allotments. The larger farms have been more severely curtailed by allotments and threat of penalties.

Shifts between areas of Michigan.-There is a shift in wheat acres from one area of Michigan to another. Kalamazoo and Livingston counties have been increasing wheat acres slowly but have not exceeded their allotment in any year since marketing quotas were applied. Sanilac and Gratiot-Isabella have increased their planting at a much more rapid rate.

The former exceeded its allotment by 10 per cent in 1957, while the latter exceeded its allotment by 24 per cent the same year.

There are four possible reasons for these area shifts. First, the shifts taking place between type of farming areas in Michigan are closely related to the number of small farms with under 15 acre allotments in the area. Gratiot-Isabella counties have 83 per cent of the farms with under 15 acre allotments and are planting 124 per cent of their allotment with a potential of 156 per cent. Sanilac county has 80 per cent of its farms under 15 acre allotments and is planting 110 per cent of its area allotment with a potential of 137 per cent. Livingston county has 73 per cent of its farms under 15 acre allotments and is planting 99 per cent of its allotment with a potential of 133 per cent. Kalamazoo has 53 per cent of its farms under 15 acre allotments and is planting 98 per cent of its area allotment with a potential of 114 per cent. The more small farms in the area the greater the potential for acreage shifts because of the 15 acre wheat minimum.

Second, Sanilac and Gratiot-Isabella counties (especially Gratiot-Isabella) are cash grain areas. At the present price of wheat it has become a more attractive cash crop relative to other alternatives in these counties. The cash grain areas are rather flexible in their cropping programs. If the crop appears profitable these areas can shift rapidly into or out of the production of a crop.

Third, Kalamazoo and Livingston counties are dairy and general farming areas primarily. These areas tend to be more stable in their cropping plans. The price of wheat is not as likely to influence them to change their established cropping patterns.

Fourth, it appears that under present conditions, overplanting provides the possibility of an area gaining in allotments relative to other areas. Gratiot-Isabella has an increase of nearly 10 per cent in 1958 allotment over 1957. This is the area that has overplanted to the greatest degree.

Shifts between specialized and non-specialized areas of the United States.-There appears to be a relative shift in wheat acres harvested from the specialized wheat regions to the less specialized wheat regions in the United States. During the last three years Kansas harvested 75 per cent of the states' allotment while Michigan was harvesting 102 per cent. The four states, Ohio, Indiana, Illinois, and Michigan, were harvesting 100 per cent in this same period, while Kansas, Nebraska, North Dakota, and Oklahoma were harvesting 81 per cent. Computed on the basis of the 1945 to 1954 average the harvested wheat acres in Ohio, Indiana, Illinois, and Michigan were 78 per cent of that 10 year base. The harvested acres in this same period in Kansas, Nebraska, North Dakota, and Oklahoma were 65 per cent of the 10 year base.

There are at least three reasons for regional shifts in wheat acres. First, a state such as Michigan has more potential in relation to its allotment than does a state such as Kansas. Michigan has 84 per cent of its farms with 15 acre allotments or under compared with 20 per cent for Kansas. In the sample 76 per cent of the farms had allotments of 15 acres and under. These farms had operating control of 58 per cent of the wheat acres in the entire sample. Because there are many more small farms in Michigan and because a much higher percentage of the total wheat acreage is on these farms, Michigan and similar states have a greater potential for exceeding the state's wheat allotment.

Second, the greater natural hazards in the wheat belt such as drouth, insects, and disease, cause a higher degree of abandonment in the specialized wheat states than in the less specialized wheat states. For the past three years Michigan has harvested very nearly the same number of acres as were planted, while Kansas has averaged only 75 per cent of its allotment harvested. Each year Kansas had planted acres exceeding its allotment.

Third, there is no evidence that Michigan is gaining relative to Kansas in allotted acres. However, this continues to be a possibility and should not be ignored.

These shifts are indicated for 978 identical farms from 1951 through 1957. Since 1951 many new farms have started producing wheat. These farms are not considered in this study. However, it is likely that these new wheat farms would have small wheat acreages which would accentuate the shifts already reported. Therefore, the degree of shifting acres suggested in this study probably is more conservative than the actual changes taking place in Michigan.

Implications of These Shifts

The second objective of this study was to examine the implications of the results on income distribution and efficiency. In Chapter 4 a number of possible effects of production control on income distribution and efficiency were discussed. It is probable that most of these effects exist to some extent as results of production control programs. However, this report proves only that acreage shifts have taken place. Only the income and efficiency effects that are closely related to these acreage shifts will be discussed in concluding this study.

Effects on income distribution.-Wheat acreage shifts depend upon wheat prices remaining high enough to make wheat income attractive relative to alternative crops. Wheat income will shift with the number of wheat acres. The small farmer will gain relative to the large farmer; Sanilac and Gratiot-Isabella counties will gain relative to Kalamazoo and Livingston; and, the less specialized wheat regions will gain relative to the more specialized wheat regions.

The extent of these income shifts depends on the degree to which acreage shifts are taking place (and will take place in the future). In addition, the actual effect on income as a result of these shifts will depend upon several things not specifically covered in this study.

- (1) Even though the wheat acreage shifts, the degree of effect upon the farm income will be related to the availability of alternative crops. If an alternative crop is available to the large farm or the specialized wheat area after it has suffered curtailment in wheat acres, the effect on income will depend on the value of this alternative crop. If it is nearly as profitable as wheat the final effect upon the farm's income will be slight. However, many areas do not have such alternative crops.
- (2) The degree to which the farm income is affected will depend on the ability to use the most effective technology. As an example, fertilizers can be used to increase production in spite of acreage curtailment. Fertilizers are most effective in areas of high moisture. In this particular case the advantage would be with the less specialized states due to generally higher annual rainfall than in the more specialized wheat regions. If technology can be used to alleviate the curtailment in wheat acres, the income change is not as great.
- (3) In some crops, burley tobacco in particular, the allotment has been capitalized into the value of the land. There is no proof that this occurs with wheat allotments.

Income distribution is likely to shift in the same direction as the shift in wheat acres. The degree of this income shifting will depend on a number of things not specifically covered in this study. These are availability of alternative crops and use of technology.

Effects on efficiency.-Many possible effects of support and control programs on efficiency were discussed in Chapter IV. Only those effects that are related to shifts in acreage will be considered here. These effects are primarily concerned with economic efficiency from the viewpoint of society.

Whether or not acreage shifts will affect efficiency will depend on: (1) the degree to which utilization and allocation of resources are affected, (2) the degree to which techniques of production are affected, and (3) the degree to which production is encouraged in low cost farms.

Prior to marketing quotas in 1954 a trend toward larger wheat acreages on the larger farms existed. This implies that the larger farms and the larger wheat acreages were becoming more specialized and more efficient in wheat production. Marketing quotas in 1954 and penalties for non-compliance above 15 acres caused a reversal of this trend. The larger farms are becoming less important in the production of wheat and the smaller farms are increasing in importance. The obvious conclusion is that acreage allotments and marketing quotas are interfering with specialization and efficiency.

However, the degree of efficiency is related to the use of the most effective production techniques. In this case no conclusions can be drawn because there is evidence of opposing results. It is believed by some economists that guaranteed profits under high support prices encourages technological inefficiency. On the other hand there is evidence that smaller farms improve efficiency under a support program. The program removes price uncertainties and allows the small farmer to invest in improved production practices with confidence of a stable price for his commodity. Thus, allotments and quotas may change the comparative

efficiencies of large and small farms.

Alternative crops also have a bearing on the degree to which efficiency is affected. If the alternative crop is nearly as profitable as wheat, efficiency is only slightly deterred. However, if there are no alternative crops such as in some areas of western Kansas, the land which was formerly in wheat becomes idle or severely curtailed in productivity. The lack of utilization of this land is economic in efficiency.

Price support and production control programs have been adopted through the democratic process to achieve certain goals held by society. It was assumed in this study that society held these values: (1) income inequalities between sectors of our society should be mitigated, and (2) more efficiency is desirable.

From examination of production controls it appears that income distribution is taking place from the large farmer to the small farmer, from one area of Michigan to another, and from the more specialized wheat regions to the less specialized wheat regions.

The same program which is contributing to one goal, income distribution, is sometimes contrary to another goal, more efficiency.

Must efficiency be sacrificed to achieve income distribution? Can a program be designed to contribute to both goals? These are questions for our future agricultural policy to answer.

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APPENDICES

APPENDIX A

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TABLE B

PERCENT OF FARMS SEEDING 15 ACRES OR LESS OF WHEAT FOR THE 1955 CROP YEAR

New York	82.1
New Jersey	77.0
Pennsylvania	90.4
Ohio	81.1
Indiana	77.0
Illinois	69.6
Michigan	84.4
Wisconsin	96.9
Minnesota	49.6
Iowa	67.3
Missouri	77.8
North Dakota	3.3
South Dakota	12.6
Nebraska	26.4
Kansas	22.2
Delaware	51.5
Maryland	70.2
Virginia	92.6
West Virginia	92.5
North Carolina	95.7
South Carolina	94.5
Georgia	91.0
Kentucky	82.3
Tennessee	91.2
Arkansas	86.3
Oklahoma	23.4
Texas	28.9
Montana	14.0
Idaho	57.1
Wyoming	26.8
Colorado	19.9
New Mexico	36.0
Utah	73.5
Washington	29.6
Oregon	51.7
California	29.5

Source: Commodity Stabilization Service, USDA

TABLE C
SHIFTS IN RELATION TO FARM SIZE ON FARMS OVER 15 ACRES OF WHEAT

	1951	1952	1953	1954	1955	1956	1957
	<u>Farms 70 acres and under*</u>						
Number of farms over 15 acres	90	99	124	24	11	7	15
Total wheat acres	2074	2399	3018	466	189	123	267
Average acres	23	24.2	24.3	19.4	17.2	17.5	17.8
	<u>Farms 70.1 to 180 acres</u>						
Number of farms over 15 acres	275	301	308	153	121	117	150
Total wheat acres	7936	8911	9358	3514	2643	2524	3180
Average acres	28.8	29.6	30.4	22.9	21.8	21.6	21.2
	<u>Farms 180.1 and over</u>						
Number of farms over 15 acres	80	84	84	71	73	71	69
Total Wheat acres	4269	4436	4616	2612	2389	2415	2294
Average acres	53.3	52.8	54.9	36.7	32.7	34.0	33.2
<u>SHIFTS IN RELATION TO FARM SIZE ON FARMS 15 WHEAT ACRES OF LESS</u>							
	<u>Farms 70 acres and under*</u>						
Number of farms 15 acres or less	313	304	279	379	392	396	388
Total acres	2236	2245	2246	2719	2773	3214	3566
Average acres	7	7.4	8.0	7.1	7.1	8.1	9.1
	<u>Farms 70.1 to 180 acres</u>						
Number of farms 15 acres or less	211	185	178	333	365	369	336
Total acres	1717	1684	1659	3211	3442	3922	3786
Average acres	8.1	9.1	9.3	9.6	9.4	10.6	11.2
	<u>Farms 180.1 acres and over</u>						
Number of farms 15 acres or less	9	5	5	18	16	18	20
	82	35	26	202	161	202	157

*Crop acres

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TABLE D
WHEAT ALLOTMENT AND ACRES FOR FARMS 15 ACRES AND UNDER ALLOTMENT BY AREA, 1954-1957

Area	No. of farms		Allot. Acres		No. of farms		Allot. Acres		No. of farms		Allot. Acres	
	1954	1954	1954	1954	1955	1955	1955	1955	1956	1956	1956	1956
1. Kalamazoo												
Farms underplanting allotment	43	404	277		35	324	244		28	246	163	191
Farms complying allotment	17	146	146		19	131	131	1962	17	174	174	208
Farms overplanting allotment	24	142	246		33	222	356		42	258	461	494
Total	84	692	669		87	677	731		87	678	798	832
2. Livingston												
Farms underplanting allotment	68	604	325		67	537	289		70	581	315	144
Farms complying allotment	24	247	247		25	274	274		21	212	212	198
Farms overplanting allotment	51	354	655		60	407	640		68	429	776	1077
Total	143	1205	1227		152	1218	1203		159	1222	1303	1419
3. Sanilac												
Farms underplanting allotment	84	848	583		91	826	417		61	624	409	162
Farms complying allotment	32	270	270		24	202	202		19	168	168	177
Farms overplanting allotment	68	505	769		78	540	845		124	875	1424	1850
Total	184	1623	1622		193	1568	1464		204	1666	2001	2189
4. Gratiot-Isabella												
Farms underplanting allotment	120	986	609		92	815	390		80	735	500	263
Farms complying allotment	55	526	526		51	465	465		39	359	359	325
Farms overplanting allotment	100	690	1192		151	961	1679		176	1083	1931	2624
Total	275	2202	2327		294	2241	2535		295	2177	2790	3212

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	12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TABLE E
WHEAT ACRES ON FARMS 30 ACRES AND LESS ALLOTMENT IN 1957 BY AREAS

Area	Number of farms	1957 wheat acres	1957 wheat allot.	1951-53 average wheat acres
1. Kalamazoo 30 acres and under allotment Over 30 acres allotment	140 23	1962 1002	1949 1063	3132 1541
2. Livingston 30 acres and under allotment Over 30 acres allotment	198 13	2072 521	2134 528	3766 795
3. Sanilac 30 acres and under allotment Over 30 acres allotment	244 7	2963 222	2692 198	4033 331
4. Gratiot-Isabella 30 acres and under allotment Over 30 acres allotment	345 8	4180 287	3313 304	5569 466
Total 30 acres and under allotment Over 30 acres allotment	927 51	11,177 2,032	10,088 2,093	16,500 3,133

TABLE F
WHEAT ACRES FOR 1940 AND 1950 FOR COUNTIES INCLUDED IN THE STUDY

County	1950 number of farms	1940 acres	1950 acres
Kalamazoo	1176	19,119	31,139
Livingston	1046	12,306	20,471
Sanilac	3210	34,245	60,657
Gratiot-Isabella	2478	24,655	58,938

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	12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TABLE G

FARM SIZE, WHEAT ACRES, AND WHEAT ALLOTMENT BY AREAS, 1951 through 1957

Area	No. of farms	Total farms	Ave. farm size	1951	1952	1953	1954	1954	1955	1955	1956	1956	1957	1957
				wheat acres	wheat acres	wheat acres	wheat acres	wheat allot. acres	wheat allot. acres	wheat allot. acres	wheat allot. acres	wheat allot. acres	wheat allot. acres	wheat allot.
1. Kalamazoo	163	25596	157	4433	4528	4882	2911	3151	2791	2926	2852	2895	2925	2971
2. Livingston	211	32239	153	4429	4627	4628	2707	3008	2490	2816	2476	2594	2623	2662
3. Sanilac	251	32173	128	3658	4648	4981	3113	3295	2562	2947	3054	2832	3224	2931
4. Gratiot- Isabella	189 164	13094 18245	96 111	2914 2900	2867 3040	3391 3041	1991 2002	2083 2084	1942 1812	1891 1782	2137 1881	1872 1700	2331 2147	1841 1782
Total farms 978														

TABLE H
NUMBER OF FARMS IN EACH SIZE OF FARM GROUP BY AREAS FOR 1957

Area	Total Acre Divisions									
	0-29	30-49	50-69	70-99	100-139	140-179	180-219	220-259	260-499	Over 500
1. Kalamazoo	2	20	11	30	24	25	14	8	26	3
2. Livingston	7	12	18	40	48	28	15	14	24	5
3. Sanilac	1	35	10	72	58	36	12	8	16	3
4. Gratiot	3	26	14	75	39	22	7	1	2	0
Isabella	0	18	11	53	43	22	6	7	4	0

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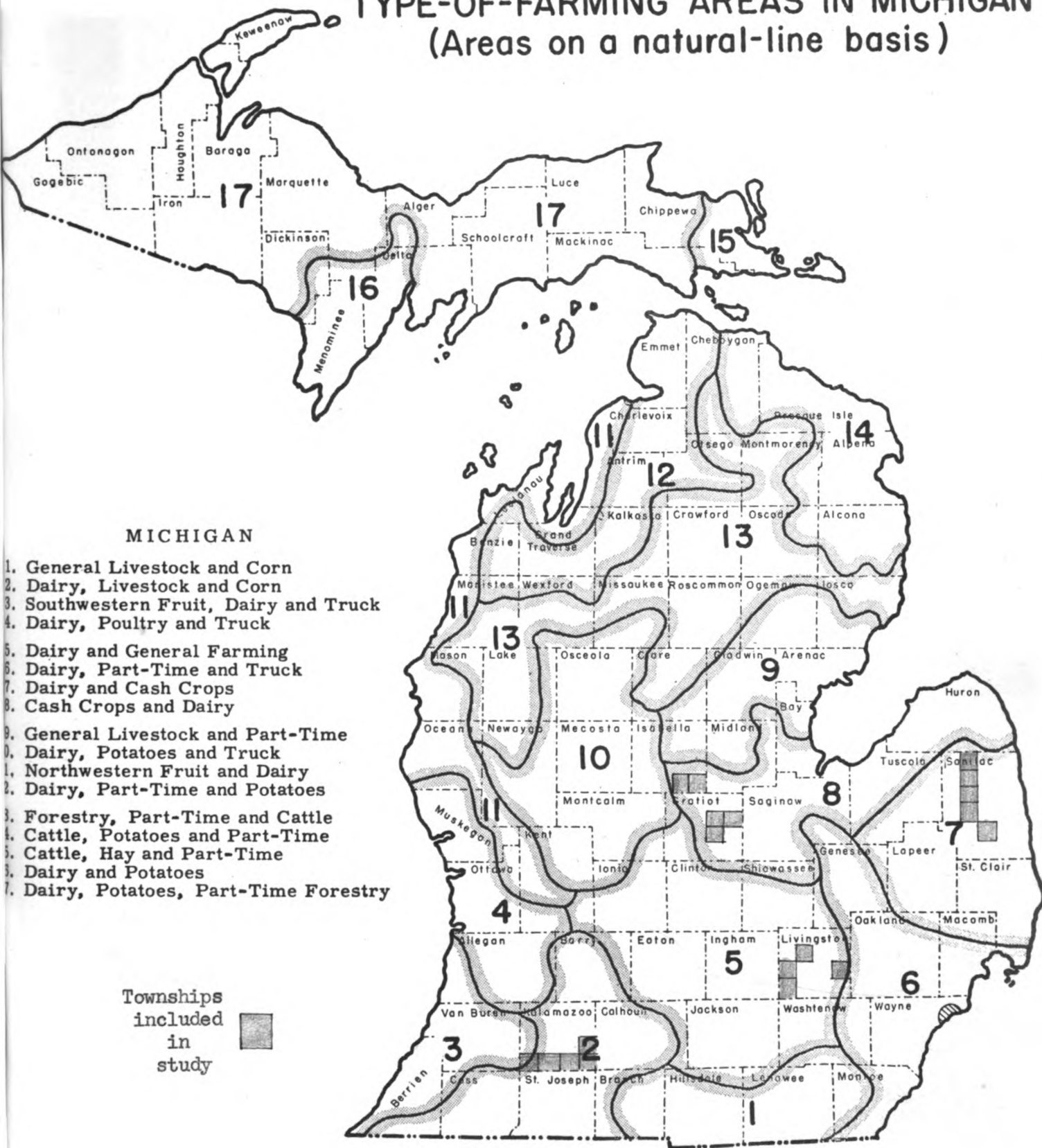
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TYPE-OF-FARMING AREAS IN MICHIGAN (Areas on a natural-line basis)



The 83 counties in Michigan are here grouped into 17 type-of-farming areas as indicated in this map. The "natural" boundaries of these areas do not, however, follow county boundaries, but lines representing the influences of soil, climate and markets.

FIGURE 1.
Location of Townships Used as Sample Areas

ROOM USE ONLY

Date Due[illegible]

Demco-293

MICHIGAN STATE UNIV. LIBRARIES



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