Economic Trends in U.S. Agriculture and Food Systems Since World War II

Milton C. Hallberg

Iowa State University Press / Ames

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Milton C. Hallberg is professor emeritus of agricultural economics at Pennsylvania State University. His research focuses on public policy issues in U.S. agriculture, including the role and impact of nonfarm income in farm families; biotechnologies' ethical, technical, and market consequences; and changing trade relationships with the European Union, Canada, and Latin America.

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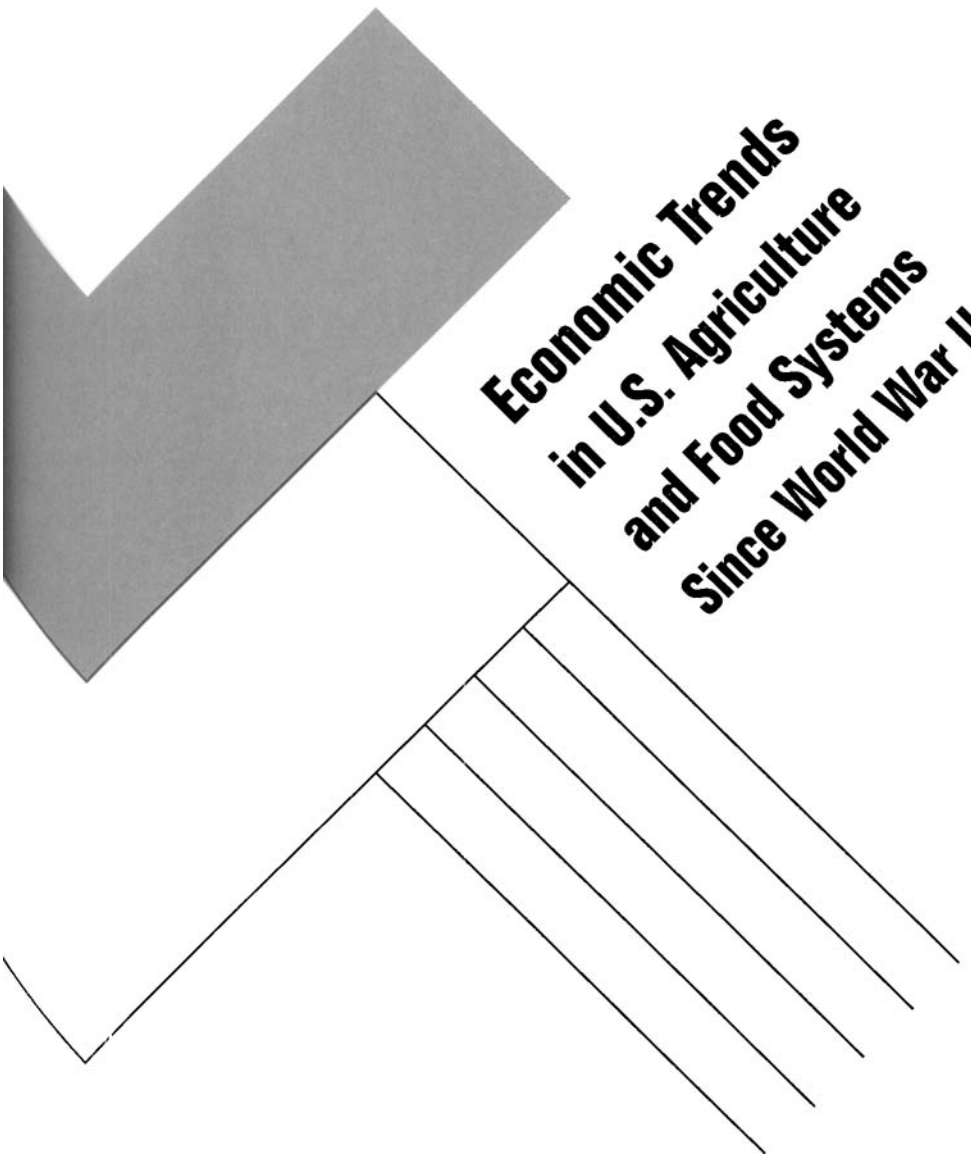
Preface

To thoroughly comprehend the subject matter of agricultural policy, one must become familiar with a host of relationships as well as with how these relationships have changed over the years. Some of the relationships of interest concern farm numbers, land use, asset values and farm debt, farm ownership and tenancy, farm income and expenses, resource use and enterprise mix, farm commodity and farm input prices, agricultural productivity, agricultural exports and imports, food consumption and consumer behavior, and food marketing costs.

To gain a familiarity with these relationships and with how they have changed over time is not easy. Several good historical references are available, but few are up-to-date or cover the material in the most helpful manner. Good textbooks also exist, but there is seldom enough space in textbooks to cover the essential analytical material let alone historical relationships and trends. My objective in preparing this book is to provide a short reference that goes a substantial way toward meeting this need.

In this book, I provide a graphical display and short discussion of those relationships and trends I have found to be essential to the understanding of agricultural policy, based on the courses and seminars I have offered over the past several years. While this book is targeted at the undergraduate and graduate student in agricultural economics, it will also be of value to individuals with a general interest in the character and evolution of the agriculture and food system in the United States, and to individuals actively engaged in the agricultural policy process.

I owe a debt of gratitude to the many individuals who contributed to the completion of this work. First are my students, who forced me to sharpen my thoughts and classroom presentations. They are my greatest inspiration. My colleagues in the Department of Agricultural Economics and Rural Sociology at Pennsylvania State University also contributed by helping me uncover data sources and clarify my explanation of key concepts. Phillip Eberle of the Department of Agribusiness Economics at Southern Illinois University read the manuscript and made valuable suggestions. I am also greatly indebted to Alden Manchester of Economic Research Service, USDA, who reviewed the manuscript and provided input that improved my presentation and interpretation of the data.


Economic Trends
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Since World War II

1. Introduction

The agriculture and food system in the United States has sustained many changes since colonial times, but perhaps none have been as dramatic as those that have occurred since the end of World War II. It is instructive to review these changes in some detail in order to gain a better understanding of the development and character of the entire agriculture and food system, and of the events that have helped shape this system during the past fifty years. Many of us have a nostalgic interest in the historical path of the American agricultural sector–going back to before World War II. My purpose here, however, is much broader. Specifically, my aim is to provide important and necessary background to help us all understand the likely future path of this sector and to help prepare us for debating future policy choices for this sector.

This historical review starts with 1950, a year that marks the beginning of a period of rapid technological advance in agriculture. It also marks the beginning of a period when agricultural surpluses in the United States became burdensome, some postwar international trade and development organizations began operation,[1] and the U.S. Congress and various administrations struggled to develop postwar policies directed toward easing the pains of a troubled sector.

Much of the structure and content of this book has evolved from material I have distributed to students in the graduate and undergraduate courses on agricultural policy I have taught over the course of the past several years.[2] I firmly believe that a thorough understanding of the character of the agriculture and food system is essential not only for understanding how and why actual policy has evolved for this system, but also for assessing the adequacy or appropriateness of past, current, and future policy choices for this system. There is no substitute for good research using modern tools of analysis. But that research must be built upon a solid understanding of how the system works, what the key relationships are, how these relationships have changed over time, and what the likely consequences of changes in the variables of these relationships are. There is also no substitute for a thorough training in the basics of economic analysis. Thus, this book is intended to supplement, not replace, basic texts and exercise manuals for courses in agricultural policy.

If the scope of an historical analysis such as this is sufficiently broad and encompassing, it can help us visualize the whole picture more clearly than if we were to con-

centrate on isolated phenomena of the past. This book, then, should also help the student of agriculture and food policy obtain a clearer perception of the totality of the system, and thus be guided toward more rational insights and conclusions concerning its workings and future. As such, the book should contribute to increasing our general understanding of the U.S. agriculture and food system. This is all the more important as we continue on a path toward government policy for agriculture based on freer international trade and greater market orientation as a result of policy directions promised with the new (1995) accord on the General Agreement on Tariffs and Trade (GATT), and with the passage by the U.S. Congress of the Federal Agriculture Improvement and Reform (FAIR) Act of 1996.

This book offers graphic and tabular presentations of data felt to be most appropriate to the above aims, along with brief discussions of these data and their implications. In general, the data presented cover the 1950–98 period. My primary focus is on identifying and highlighting trends in and relationships among these data rather than on offering detailed interpretations or explanations. This book provides hypotheses of relationships rather than tests of hypotheses about these relationships, although I have carefully avoided presenting new and untested ideas about these relationships. This book not only should be informative to students, researchers, and policy makers, but also should stimulate deeper explorations and analyses.

An extensive data set for the entire 1950–98 period is provided in appendix 2. Several additional variables not charted or only referenced in the text are also included there. The data in appendix 2 are provided in raw form or in ratio or percentage form in an attempt to offer the reader more insight than could be gleaned from standard statistical compendia.

Finally, appendix 1 contains a brief chronology of events impacting the U.S. agriculture and food system since 1950. This appendix contains special events related to the overall farm economy, farm technology, crop and livestock sectors, transportation, agricultural trade, life on the farm, farm organizations, agricultural education and extension, and government policy.

Data Sources

The majority of the data contained in this book was obtained from the following publications of the U.S. Department of Agriculture: *Agricultural Statistics*, National Agricultural Statistics Service (various annual issues); *Food Consumption, Prices, and Expenditures*, Economic Research Service (various annual issues); *Economic Indicators of the Farming Sector*, Economic Research Service (various annual issues); and *Agricultural Outlook*, Economic Research Service (various monthly issues). A number of "Situation," "Outlook," and other special reports published by the Economic Research Service or National Agricultural Statistics Service, USDA, were used to update various data series as necessary. Data on population, households, and money income of households were obtained from the U.S. Department of Commerce's *Current Population Reports*, Bureau of the Census (various annual issues) and *Historical Statistics of the United States: Colonial*

Times to 1970, Bureau of the Census, Bicentennial Edition, 1975. Data describing economic activity in the food processing, agricultural input industries, and food retailing and wholesaling sectors were obtained from the U.S. Department of Commerce's *Census of Manufactures*, *Census of Retail Trade*, and *Census of Wholesale Trade*, Bureau of the Census, and U.S. Treasury Department, *Statistics of Income: Corporation Income Tax Returns*, Internal Revenue Service. Data relating to the general economy were obtained from U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States* (various annual issues), Office of Management and Budget, Council of Economic Advisers, *Economic Report of the President* (various annual issues), and U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business* (various monthly issues). Some of the data recorded for 1998 are preliminary or projected and are subject to subsequent revision. Further, some of the data will subsequently be revised by the appropriate agency in light of new information provided by the 1997 censuses.

Definitions

Agriculture is generally used to denote all of that activity associated directly with **farming**. Thus **agriculture** and **farming** might be used as synonyms as will be done throughout this book. The more inclusive **agriculture and food system**, however, will be used in this book to refer to all the activity associated with farm production, food processing, food retailing, and food wholesaling, as well as the production, sale, and distribution of inputs needed by these sectors.

A **farm**, according to the 1978 *Census of Agriculture* is "any place that has $1,000 or more of gross sales of farm products per year." Prior to 1978, a farm was defined as "any place with less than ten acres from which $250 or more of agricultural products were sold or normally would have been sold during the census year, or any place of ten acres or more from which $50 or more of agricultural products were sold or normally would have been sold during the census year." The new definition of a farm was used by the Bureau of the Census to revise its data on number of farms back to 1974. It is important to keep this change of definition in mind when examining some of the graphical and numerical data presented in this book. For example, this change in definition resulted in a marked reduction in the number of farms in the United States following 1974, and had significant consequences on some other variables relating to the number of farms, for example, land in farms, acres per farm, and farm population.

To help put in perspective how much agricultural activity is implied by $1,000 of gross sales of farm products per year, it is useful to consider a few examples. Assuming average animal and crop yields and prices received by farmers in 1998, one dairy cow would have generated $2,635 in gross income, five acres of corn would have generated $1,479 in gross income, 100 layers would have generated $1,394 in gross income, and ten acres of wheat would have generated $1,258 in gross income in 1998. Quite clearly, a farm grossing a mere $1,000 in 1998 was an incredibly small farm!

A **family farm** is a term that is quite often used in political discussions but with no

clarity of meaning either for policy discussions or statistical analyses. The following definition of a **family farm** presented in the U.S. Department of Agriculture's *Agriculture Fact Book 1998* makes the elusiveness of this term quite poignant: "An agricultural business which (1) produces agricultural commodities for sale in such quantities so as to be recognized as a farm rather than a rural residence; (2) produces enough income (including off-farm employment) to pay family and farm operating expenses, to pay debts, and to maintain the property; (3) is managed by the operator; (4) has a substantial amount of labor provided by the operator and family; and (5) may use seasonal labor during peak periods and a reasonable amount of full-time hired labor." Because of the elusiveness of this term, it **will not** be used in this book.

Commercial farm is also a fairly elusive term. However, it is generally used to refer to an agricultural business that produces enough income from the production of agricultural commodities that it fully employs the farm operator and his/her family and is capable of generating enough income to sustain the farm family at a "reasonable" level without relying primarily on off-farm income. This term **will be** used on occasion in this book.

Notes

1. The International Monetary Fund, the World Bank, and the General Agreement on Tariffs and Trade now known as the World Trade Organization.

2. This book is a substantial revision of an earlier report containing many of the same data series and much of the same discussion: see Milton C. Hallberg, *The U.S. Agricultural and Food System: A Postwar Historical Perspective,* The Northeast Regional Center for Rural Development, The Pennsylvania State University, Publication Number 55, October 1988.

2. Agriculture's Importance in the National Economy and Political Climate

The proportion of the nation's income originating in agriculture has declined steadily over the past five decades as has farm population as a percentage of total U.S. population and as has farm employment as a percentage of total U.S. employment (Fig. 2.1). In fact, these proportions have been declining since 1800 as Table 2.1 highlights, and probably since this nation was born.

In the formative years of this nation, most of its people were farmers engaged in the production of food and fiber for domestic consumption and for a small amount of export. These farmers did more than just produce meat, milk, grain, and fiber. They grew or fabricated on their farms most of the inputs needed to produce these products. They processed farm products into a form that could be used by human beings: livestock and poultry into meat, grain into flour, flour into bread, fibers into cloth, hides into leather, trees into farm buildings and fencing, and so on. They packaged their produce consistent

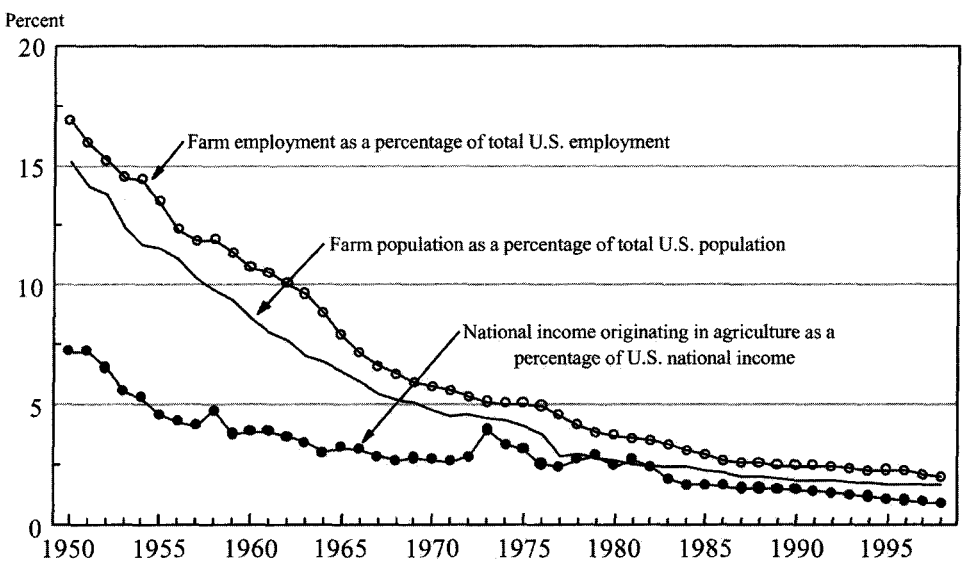

Figure 2.1 Relative importance of agriculture to the U.S. national economy, 1950–98.

Table 2.1 National Income Originating in Agriculture as a Percentage of Total U.S. National Income, Farm Employment as a Percentage of Total U.S. Employment, and Farm Population as a Percentage of Total U.S. Population, 1800–1998.

Year	National income originating in agriculture	Farm employment	Farm population
	(%)	(%)	(%)
1800	39.5	71.6	65.9
1820	34.4	71.9	65.1
1840	34.6	68.6	57.8
1860	30.8	59.0	52.0
1880	20.7	49.3	43.8
1900	20.9	37.7	39.3
1920	12.3	25.7	30.2
1940	6.4	16.9	23.2
1960	3.9	10.7	8.7
1980	2.4	3.7	2.7
1990	1.4	2.5	1.8
1998	0.9	2.2	1.7

Source: U.S. Department of Commerce, Bureau of the Census, Historical Statistics of the United States: Colonial Times to 1970; and U.S. Department of Agriculture, Agricultural Statistics (various annual issues).

with the needs of consumers as, for example, animal carcasses, which needed to be cut up into forms that could easily be used by the household. They cured the meat and processed the milk so it could be stored for future consumption (in earlier times using only natural refrigeration). They transported farm produce to the villages or to loading docks for export. They sought out buyers for surplus produce and personally saw to all of the financial matters involved in transferring ownership of their produce.

As the nation matured and expanded westward, as farmers and nonfarmers alike developed and applied new technologies, and as its people carved out areas of economic specialization, it became physically impossible for farmers to perform some of these functions, and economically infeasible for farmers to perform others. Specialists evolved to provide building supplies, to provide machinery and tools, to process and package food, to transport both raw and finished goods, to provide short- and long-term capital, to develop new and improved varieties of seeds and animals, and to buy and sell farm produce. These specialists were not only more efficient at performing such tasks than were most farmers, they could capitalize on the economies of large-scale operations. Farmers also became more efficient at producing the raw material from which food is manufactured since they no longer had to divide managerial and operational skills between farming and a host of other activities now performed by the more formal marketing sector.

In the early days, farmers captured almost all of the consumer's food dollar, but the food was quite expensive because farmers were not very efficient at providing all of the

marketing functions in addition to producing the raw material. Today, farmers capture twenty-two cents of the consumer's food dollar while those who can more efficiently process, package, transport, and store food and raw materials capture the remainder. Collectively, though, the price of food and all of the services that the marketing sector adds is less than it would be without the specialized marketing agents of today. Furthermore, since the collective price of food and of the services attached thereto is lower than it would be without these specialized marketing agents, farmers sell more produce. In the end, everyone gains! Consumers have access to a greater quantity and variety of food and fiber products at a lower per-unit cost. Farmers are able to sell more farm produce and concentrate their energies on what they do best—produce commodities. The marketing sector is able to employ more people because the increased demand for food and fiber (and the services embodied in food and fiber products) requires more workers to produce.

Thus, as the nation's farmers became more specialized and took advantage of newer technologies, as specialized industries developed in the nonfarm economy, and in general as the overall economy matured, nonfarm industries developed to employ the expanding labor force. This in turn meant that a declining proportion of workers were needed on farms, and the proportion of the national income generated by the nonfarm sectors of the economy increased.

In the early stages of the development of the United States, agriculture was the dominant industry. By the turn of the nineteenth century, as development of lands west of the Atlantic seaboard was just beginning, 72 percent of the gainfully employed workers in the nation were employed in farming, and 40 percent of the national income originated in farming. Today, a little more than 2 percent of the gainfully employed workers in the United States are employed in agriculture, and only about 1 percent of the national income originates in agriculture. Similarly, farm population has declined from 66 percent of the U.S. population in 1800 to 23 percent in 1940 and to less than 2 percent in 1998 (Table 2.1). While agriculture is unquestionably an important sector supplying food to consumers at home and abroad, it is no longer the most important sector economically and no longer the hub of economic activity in this nation.

Consequences for the Rural Community

The trends noted here are decried by some, but they are not particularly surprising. Nevertheless, the declining relative importance of agriculture in the United States has significant consequences for U.S. farmers and farm families. The decline in farm population in many areas, for example, has put great strains on the rural community. As the number of farm people diminishes and as farms become more specialized, the density of production of enterprises typical of the remaining, and mostly smaller, farms decreases. The lower production density threatens the existence of these smaller, farms as total production in the area falls below critical levels required to sustain markets and needed support services. Further, as this happens, unless nonfarm job opportunities are available in the

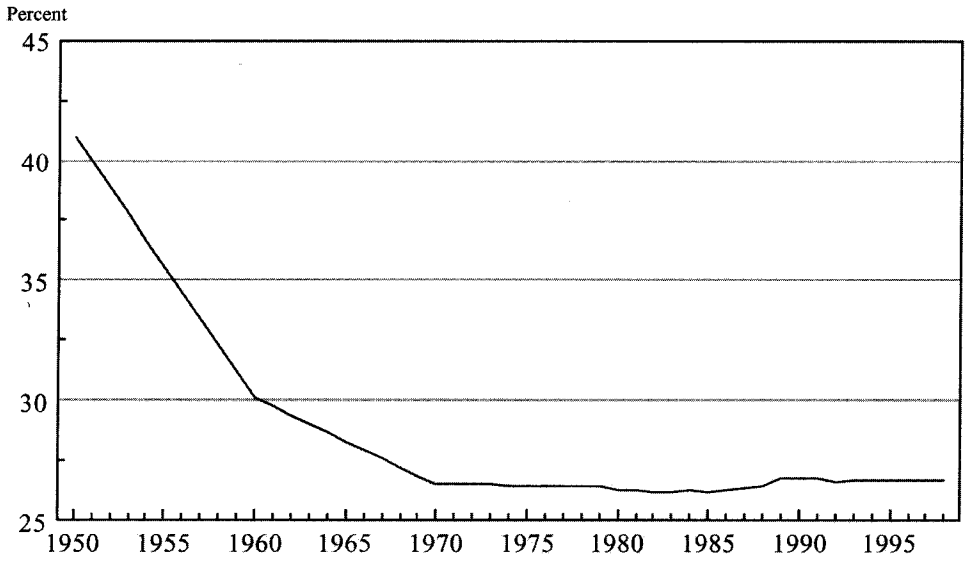

Figure 2.2 Rural population as a percentage of total U.S. population, 1950–98.

rural community, nonfarm people will be forced to leave the rural community as the number of farm service jobs decreases. If rural development efforts are not successful in generating sufficient nonfarm jobs for nonfarm people, the rural community will have great difficulty in surviving. Finally, as we will soon see, many farm people rely on part-time or full-time off-farm jobs for a significant portion of the farm family income. Thus, if sufficient off-farm jobs are not available, the farm itself may be threatened.

Political Consequences

The declining relative importance of agriculture may also be expected to lead to difficulty in pushing legislation through Congress that is favorable to farmers. No one likes to be on a listing ship, for there may come a time when all hope is gone and the ship sinks. To the extent that new legislation for agriculture passed in early 1996 (the FAIR Act of 1996) portends a more market-oriented approach to farm policy in the future, one may conclude that the era of generous support for agriculture is over. But that does not necessarily mean that the "ship" has been abandoned nor that the political power of the agricultural sector has become impotent.

Indeed, the benefits to individual farmers from collective action aimed at seeking legislation favorable to them is still sufficiently great to encourage such collective action. On the other hand, as Mancur Olson[1] points out, it is difficult for large, heterogenous, and widely dispersed groups like consumers to oppose legislation favorable to farmers because the benefits from this kind of collective action offer limited inducement to indi-

vidual consumers to participate. Thus, regardless of the disparity in numbers, farmers retain superior political power.

Furthermore, it should be noted that much of the U.S. population still lives in rural areas even though less than 2 percent of the nation's population lives on farms. In 1950, over 40 percent of the population was classified as rural. This percentage dropped to around twenty-six by the late 1960s and has remained near that level ever since—even increasing slightly in the late 1980s (Fig. 2.2). In many areas, the rural population depends heavily on the farm sector for its economic well-being. If farming were to cease in these areas, the rural community might have difficulty maintaining its current economic health, and the attractiveness of rural life might diminish. Hence, it is easy to see why this portion of the population is generally very interested in seeking the support of legislation that is at least not unfavorable to farmers. Furthermore, much of the urban population still sympathizes with farmers and supports legislation favorable to those who produce the food on which everyone depends. While the latter social value may be less strong in the United States than in Europe, it is still operative in the United States nonetheless.

Note

1. Mancur Olson, "Agricultural Exploitation and Subsidization: There's An Explanation," *Choices*, Fourth Quarter 1990, pp. 8–11.

3. Farm Numbers and Sizes

Number of Farms

The U.S. agricultural sector has made several significant adjustments over the 1950–98 period—perhaps none so striking as the reduction in number of farms. In 1998, there were just over two million farms in the United States—39 percent of the number of farms in 1950 (Fig. 3.1) and 32 percent of the peak number of farms in 1935.[1] Figure 3.1 suggests a sharp decline in the number of farms between 1974 and 1975. This decline is due in large part to the change in the definition of a farm instituted in 1974 as discussed in the introduction.

As is clear from the data charted in Figure 3.2, the vast majority of the farms in the United States are relatively small. This was the case in 1970 (and indeed in earlier years)

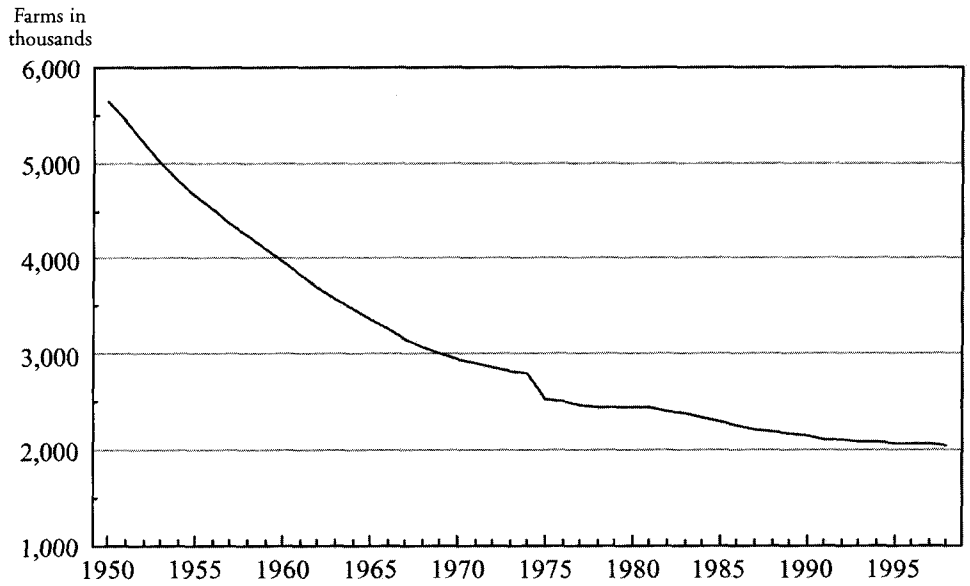

Figure 3.1 Number of farms in the United States, 1950–98.

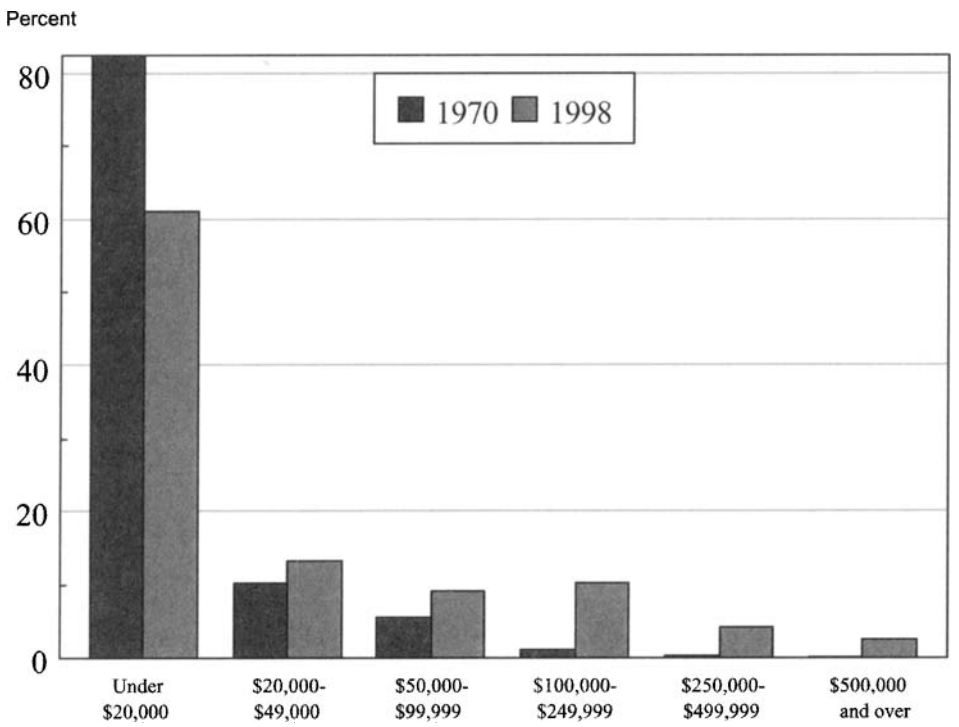

Figure 3.2 Percentage of farms in the United States by sales category, 1970 and 1998.

and is still the case even though the percentage of the smallest sized farms has declined significantly. Over 60 percent of our farms today have annual gross sales of $20,000 or less, and 83 percent have annual gross sales of less than $100,000 (Table A2).[2] As we will see later, on average, U.S. farmers receive a net income of slightly more than 20 percent of gross farm income. With a net income margin of 20 percent, farms with even $100,000 of gross income annually hardly generate enough cash income to provide a lifestyle for a family of two or three people on a par with that enjoyed by most American families.

The data shown in Table A2 also point out that the vast majority of the farm output as measured by annual gross farm sales is generated on the largest farms. Here we see that today nearly 45 percent of the annual gross cash income from farming (aggregate farm output) is generated on 2.6 percent of the largest farms, and **nearly 80 percent of the annual gross cash income from farming (aggregate farm output) is generated on nearly 17 percent of the farms in the three largest sales categories.**

Figures 3.3 and 3.4 provide another perspective on changes in the number of farms—in this case the number of dairy farms. These two Figures were developed from data reported in U.S. Department of Commerce, Bureau of the Census, *Census of Agriculture*. They point out that in 1949 there were over 650 thousand farms in the United States with ten or more dairy cows, but in 1997 there were only 94 thousand

farms with ten or more dairy cows (Fig. 3.3). Of all farms with dairy cows, only 2.6 percent had fifty or more dairy cows in 1949, but 45.5 percent had fifty or more dairy cows in 1997 (Fig. 3.4). This same general pattern would be found to exist for any of the agricultural enterprises we might choose although the rates of change would differ somewhat. We will have occasion to refer back to these Figures as we examine in greater detail the reasons for these trends in chapter 9.

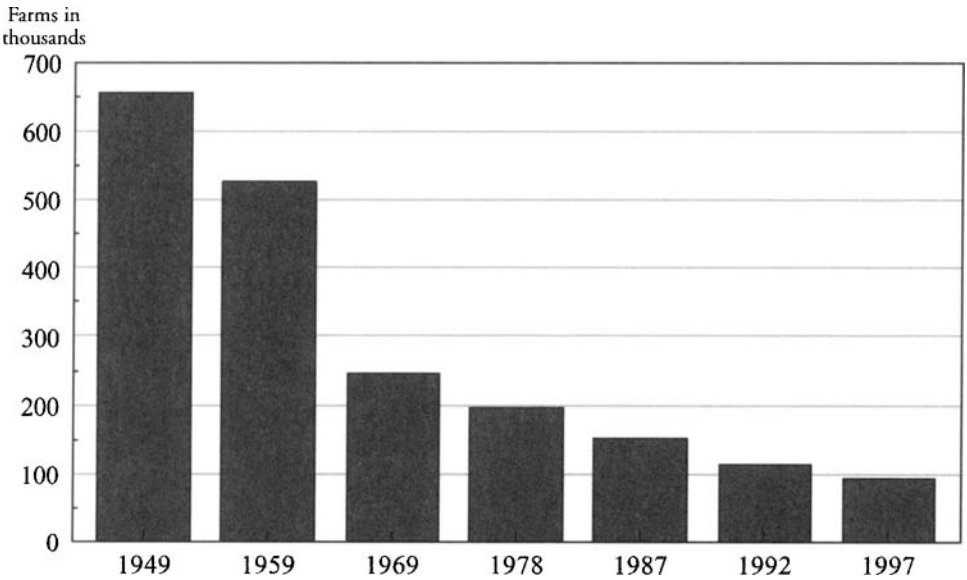

Figure 3.3 Number of U.S. farms with ten or more dairy cows, 1949–97.

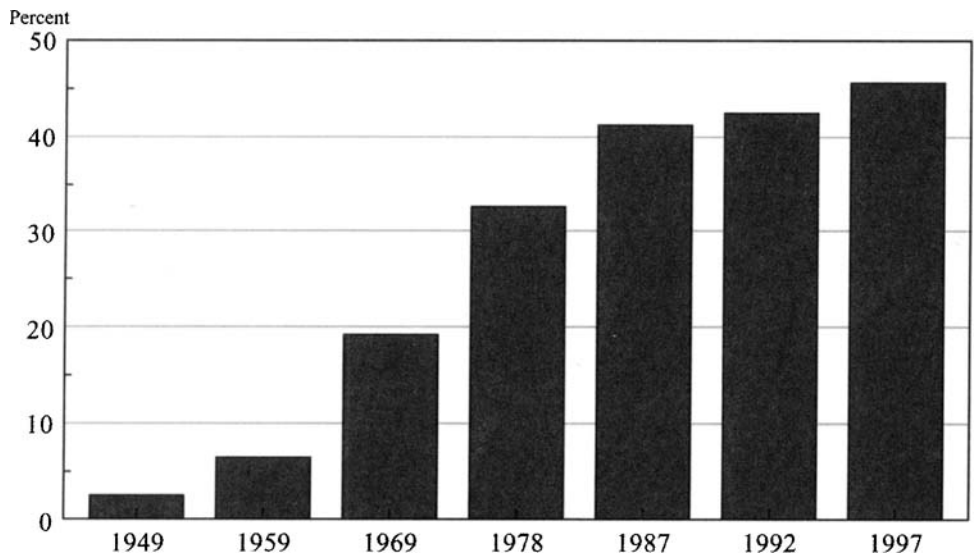

Figure 3.4 Percentage of U.S. farms with dairy cows having fifty or more dairy cows, 1949–97.

Farm Size

Average farm size measured in acres has more than doubled over the 1950–98 period (Fig. 3.5). Measuring farm size in acres is somewhat misleading because of the differing intensities with which the various agricultural enterprises use the land resource. A clearer perspective on farm size growth can be gained by examining the change in real gross farm income per farm. Here again we see that average size of farms in the United States more than doubled over the 1950–98 period (Fig. 3.5). Figure 3.5 indicates a marked increase in acres per farm between 1974 and 1975. As in the case of number of farms, this increase is due in large part to the change in definition of a farm instituted in 1974.

Figure 3.5 also indicates a marked slowdown in the rate of increase in average farm size following 1975. This corresponds to a period when net farm income dropped significantly (Fig. 4.1), land values and interest rates were high (Figs. 7.2 and 7.3), and the substitution of machinery for other inputs was declining (Fig. 9.6). All of these factors led to a decline in farmers' propensity to expand the size of their operations.

For details on changes in numbers of farms of different sizes, it is instructive to examine Table A2 in depth. Here we see that in 1960, 91.4 percent of the farms were in the smallest sales category whereas in 1998 only 61 percent were in the smallest sales category. Farms in the two largest sales categories were not enumerated by the Bureau of the Census (the basic source of data on number of farms used by Economic Research Service, USDA) until 1970. In 1970 only about one-half of 1 percent of the farms were in the two largest sales categories, whereas in 1998, 6.6 percent of the farms were in the two largest sales categories. U.S. farms are clearly getting larger on the basis of this measure,

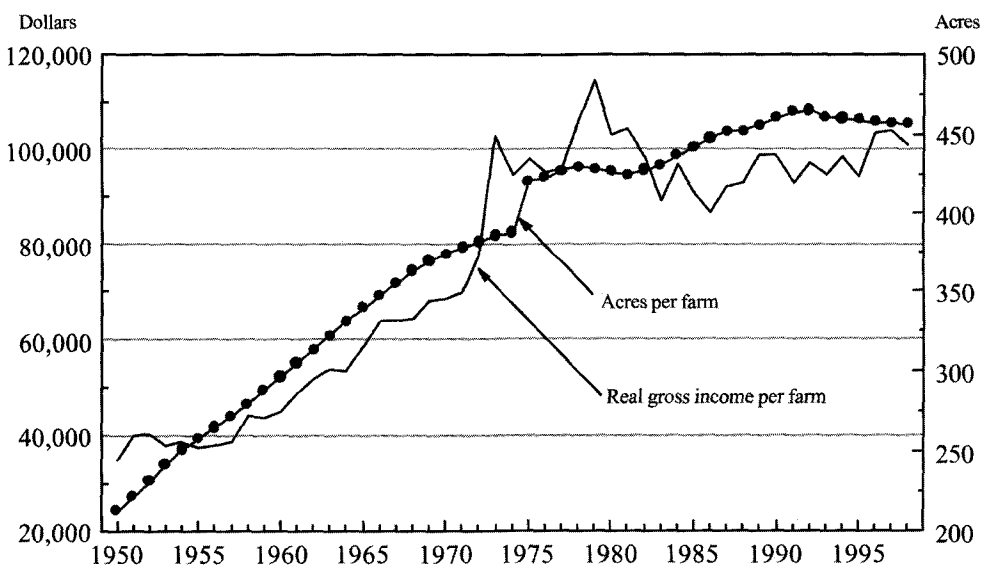

Figure 3.5 Average farm size in the United States, 1950–98.

although the rate of increase appears to have slowed somewhat during the 1980s and 1990s.

Assessing changes in farm size from the perspective of annual gross cash income, however, is problematic.[3] First, it is clear that, say, $50,000 in 1960 did not have the same purchasing power as did $50,000 in 1998. The effect of inflation should be taken into account by some means. Unfortunately, the statistics on farms by sales category are not reported in such a way as to enable us to adjust for inflation in a satisfactory way.[4] We can gain a somewhat clearer perspective by comparing the earning power (net income per farm from farm sources) of different sized farms with the mean money income of all households in the United States. The lower portion of Table A2 shows that from 1970 through 1998 net farm income for farms in the smallest sales category was negative. Farms with annual gross cash income from farming of $20,000 to $49,999 did quite well relative to all households in the United States in 1960 but quickly lost their advantage so that by 1998 farms in this sales category were not even in the ballpark! In 1960, farms in the $50,000–$99,999 sales category netted an income from farming well above the mean money income of all U.S. households. In 1998, farms in this sales category netted, on average, only about 75 percent of the mean money income of all U.S. households. Finally, farms in the largest sales categories did quite well relative to all U.S. households throughout the period from 1970 to 1998 although they did lose ground over this period.

Another difficulty associated with using sales categories to make inferences about changing farm sizes over time is that not only prices but also technology have changed considerably over the past nearly fifty years, and at different rates for different commodities. Consider a dairy farmer milking fifty cows and deriving 80 percent of his or her gross farm income from the sale of milk. Assuming that in 1960 this farmer's cows produced at the national average rate of 6,977 pounds of milk per cow and that this farmer's milk sold for the U.S. average price of $4.21 per hundredweight, this farm would have fallen into the under $20,000 sales category in 1960. In 1998, on the other hand, assuming this farmer's cows produced at the 1998 national average of 17,130 pounds of milk per cow and that this milk sold for the U.S. average price of $15.38 per hundredweight, this farm would have fallen into the $100,000–$249,999 sales category.

Consider next an Illinois grain farmer producing continuous corn on 260 acres of tillable land and deriving all of his or her gross farm income from corn. Assuming that in 1960 this farmer's land produced corn at the national average of 55 bushels per acre and sold for the national average price of $1.00 per bushel, this farm would also have fallen into the under $20,000 sales category. In 1998, assuming this farmer's land yielded corn at the 1998 average of 134 bushels per acre and this farmer's corn sold at the national average price of $2.60 per bushel, this farm would have fallen into the $40,000 to $99,999 sales category.

Several points made above are worth emphasizing. First, what was a relatively large farm in terms of gross farm income by 1960 standards cannot begin to support a family by today's standards. Today a farm must have annual sales in excess of $100,000 to sus-

tain a family at the level of the average U.S. household. Second, not all farms have grown larger in terms of physical size (animal units or acres), as might be suggested by a cursory examination of the data—some have merely moved to different sales categories over the years as both productivity and nominal prices have increased. All farms have not moved alike, however, because productivity and nominal prices in all commodities have not grown at the same pace. Third, some people argue that midsized family farms are disappearing from agriculture, resulting in a "bimodal" distribution of farms—many small, many large, and a few in between. The truth is that many of the midsized family farms of the past have merely moved into the larger sales categories as nominal prices and productivity have increased. The most significant change in their character has been increased annual cash sales—they are still midsized family farms!

In general, it is quite safe and reasonable to make comparisons of farms across sales categories at any given moment in time (e.g., for any given year). Among other things, this provides a good perspective on the size distribution of farms and the amount of total farm output produced by a subset of farms. It is quite clear, for example, that if we wish to define as "commercial" those farms with $100,000 of annual gross sales or more, then in 1998 there were about 343,000 "commercial" farms in the United States (16.7 percent of the total number of farms). Collectively, these "commercial" farms produced nearly 80 percent of total farm output.

On the other hand, making judgments about changes in farm sizes by comparing the distribution of farms by sales categories across years is hazardous. The income produced by a farm that falls in a particular sales category today will not buy the same lifestyle that the income produced by a farm in that same sales category bought five, ten, or twenty years ago. Furthermore, whether and how rapidly different farms move into different sales categories over the years depends on the farming activities carried out on those farms.

Consequences of the Decline in Farm Numbers

Clearly, though, there are now fewer farms in the United States than there were in 1950, and those existing in 1998 are, on average, much larger than was the average farm in 1950. The loss of farms has a negative impact on the performance of markets to the extent that there are too few buyers and sellers available with which to establish a price of the farm commodity on the open market that adequately reflects the conditions of supply and demand in the appropriate regional or national market. This is exacerbated in industries where farmers enter into various kinds of contractual relations with first handlers—for example, hog, poultry, or vegetable farmers—in an effort to protect themselves against market risk.

Farmers faced with the option of getting out of farming altogether or getting into a completely different agricultural enterprise face a difficult dilemma. They often must get some retraining before they can make such an adjustment. They have fixed resources that must be disposed of (and maybe even depreciated out completely) because these resources have no or limited value in an alternative production activity. They must make entirely

new contacts to obtain access to both input and output markets for an alternative agricultural enterprise. Finally, if their choice is to get out of agriculture, they must find alternative employment nearby or physically move to a new location.

If several farmers in an area quit producing a commodity such as milk or potatoes, there may be severe impacts on those continuing to produce that commodity because the volume of production remaining may no longer support the local infrastructure or buyers serving that type of production. As this infrastructure leaves or as these buyers disappear, the entire local community along with its social, cultural, educational, and health services may be in jeopardy.

The accumulation of large numbers of animals or birds in a single location may well lead to environmental conflicts locally. We have seen many instances of this in recent years around the country particularly in hog, broiler, egg, and milk production. This phenomenon presents community leaders with a very difficult development-planning problem.

On the positive side, all this has clearly meant that consumers in the United States have been able to enjoy a rather abundant and uninterrupted food supply at low prices. Food prices have remained low enough that U.S. consumers spend less of their disposable income on food than do consumers in any other nation.[5]

It is much more difficult to assess the social impacts of this type of structural change. Certainly, a reduction in numbers of farm families in a given rural region could conceivably lead to changes in social structures that may not be sustainable even with modern communication and travel technologies. It should be noted, however, that at no time in the past has our government attempted to prevent a technology from being adopted on the basis of social considerations, and there would appear to be little chance of this happening in the future. If our concern is with maintaining the viability of rural or farming communities, then it may be that more public funds will need to be directed toward rural development efforts and job retraining programs that enable farm operators and their spouses to enjoy part-time or full-time work off the farm or otherwise enable them to adjust to new economic realities.

Notes

1. Note that the number of farms estimated by National Agricultural Statistics Service, USDA, differs slightly from the number of farms reported in the *Census of Agriculture*. In this book, I use the number of farms estimated by National Agricultural Statistics Service and Economic Research Service, USDA, unless otherwise indicated. I have, though, adjusted the 1993–98 National Agricultural Statistics Service estimates to be consistent with the trend in farm numbers evident from the 1992 and 1997 *Census of Agriculture* figures.

2. As will be discussed more fully later in this chapter, one must use caution in comparing the size distribution of farms in different years because of changes in the purchasing power of the dollar.

3. In addition to the problems noted in the text, the dollar ranges of the sales categories themselves have been changed over the years as documented in the footnotes to the appropriate appendix Tables.

4. For one method of approximating the distribution of farm numbers on a common basis of prices for 1969 and 1978, see B. F. Stanton, "Changes in Farm Size and Structure in American Agriculture in the Twentieth Century," in Arne Hallam (ed.), *Size, Structure, and the Changing Face of American Agriculture* (Boulder: Westview Press, 1993), Chapter 4.

5. See Judith Jones Putnam and Jane E. Allshouse, *Food Consumption, Prices, and Expenditures, 1970–97*, U.S. Department of Agriculture, Economic Research Service, Statistical Bulletin Number 965, April 1999.

4. Farm Family Income and Wealth

Farm Income

Income of the farm population can be measured in a variety of ways, all of which have their special problems. It is useful here to begin with Economic Research Service's accounting methods. **Gross farm income** is defined as the sum of cash income from farm marketings, income from farm-related activities, direct government payments, value of home consumption, rental value of dwellings, and the value of inventory adjustment. **Net farm income** is the difference between **gross farm income** and **total production expenses**. A measure of farm population money plus nonmoney income is then obtained by subtracting **direct government payments** from **net farm income**. If, in addition, one nets out all nonmoney income—that is, the value of food produced and consumed on the farm, changes in the value of inventories, and the estimated rental value of farm dwellings—one obtains an estimate of "money" income from farming. I call this initial measure of farm population income, ***net money income from farm sources***. A second measure of farm population income adds to the first, **direct government payments**. This is simply ***net money income from farm sources plus government payments***. Finally, many farm operators and their spouses are known to earn substantial income from nonfarm jobs. Thus, a third measure of farm population income is obtained by adding off-farm income to the second resulting in ***net money income of farm families from all sources.***[1]

When expressed on a per-farm-household basis, these income measures can be compared with the **mean money income** of all U.S. households as estimated by the U.S. Department of Commerce, Bureau of the Census. Such comparisons are made, however, only for the purpose of examining the relative trends in money incomes of the farm and nonfarm populations. This is not to suggest that money income of the farm population is equivalent dollar-for-dollar to money income of the nonfarm population. Indeed, it might be argued that farm people receive other benefits that nonfarm people do not, so that these money income figures are in fact not directly comparable. Other benefits include psychic benefits associated with owning one's own land and residing in rural areas, economic returns associated with spending less time and money getting to and from work, benefits from having access to more home-produced food than do nonfarm families, benefits from paying less rent for housing, and so on.

The reader must also be aware that net farm income is a **sector** concept. That is, nonfarm contractors and nonfarm corporations and cooperatives also have claims on some of what is reported as farm income. Based on new survey procedures, Economic Research Service estimates that in 1991 only 68 percent of farm income went to farm proprietorships, partnerships, and family corporations with the remainder going to contractors and nonfarm corporations and cooperatives.[2] Thus, **net money income of farm families from all sources** as defined above overstates the income of **farm** families. This overstatement has no doubt become more pronounced in recent years as more and more farmers have entered into contractual relations with nonfarm firms such as feed dealers and processors.

In the absence of a consistent time series for nonfarm claims on net farm income for the entire 1950–98 period, the three measures of money income of farm families defined above and expressed on a per household basis are graphed in Figure 4.1 along with the mean money income of all U.S. households. The comparisons suggest that money income from all sources of farm households was relatively low in the 1950s and early 1960s. Through the 1970s and early 1980s, money income from all sources of farm households equaled or slightly exceeded that of the general population. **Since the mid-1980s, money income from all sources of farm households appears to have been well above that of the general population.** Recent estimates of nonfarm claims on net farm income made by Economic Research Service, USDA, however, suggest that since about 1990, money income of farm households has tracked much more closely to mean money income of all U.S. households than Figure 4.1 shows.[3] Thus, the conclusion that money income of farm households is well above that of the general population must be tempered somewhat.

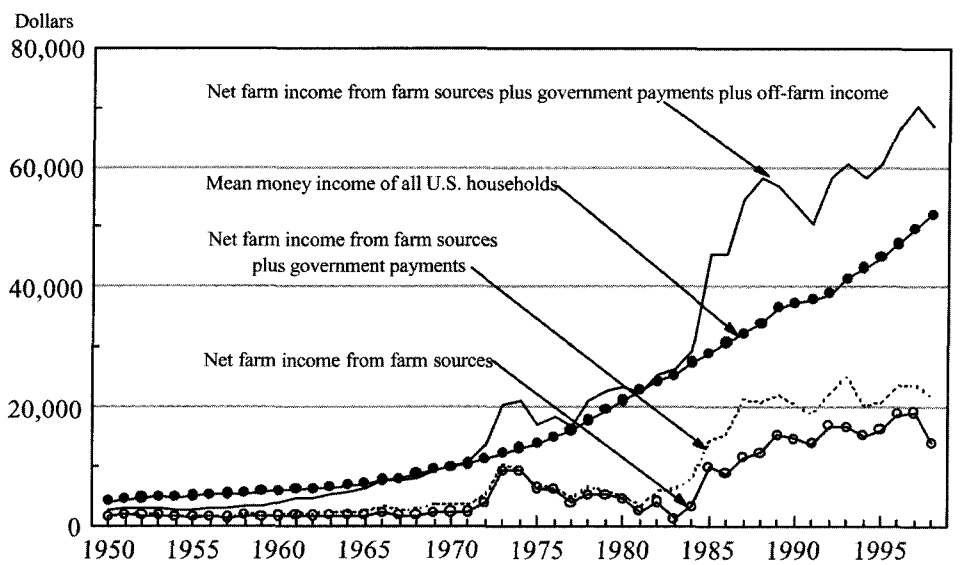

Figure 4.1 Income of farm and nonfarm households in the United States, 1950–98.

We know that farm income is much more variable than is nonfarm income because of the riskiness of the farming business. This is certainly evident from Figure 4.1—especially following 1970. We also know that the distribution of income is more skewed in the farming business than in other occupations, and that there is a greater incidence of poverty in agriculture than in the nonfarm sector of the economy. Nevertheless, **the gap between average money incomes of farm and nonfarm households appears clearly to have been closed as of about 1970.**

Government payments to farmers have certainly assisted many farm families, but, in general, government payments have not been significant in narrowing the gap between farm and nonfarm incomes (Fig. 4.1). **Off-farm income of farm families has been a most significant factor in narrowing this gap.** Off-farm income has constituted well over 50 percent of total farm family money income since 1980 (see Table A3). In some years (e.g., 1980, 1983, and 1985), off-farm income has approached or even exceeded 70 percent of total farm family money income. The data from the *Census of Agriculture* in Table 4.1 also support the importance of off-farm jobs to farm families. Here we see that over one-half of the farm operators now work off-farm and over one-third work 200 or more days off-farm. Clearly, off-farm work has become increasingly important to many farm families since the 1950s.

The distribution of off-farm income by farms in different sales categories has not been estimated by Economic Research Service, USDA, since 1992. From the data available through 1992 from Economic Research Service and projected through 1998 by the author,[4] it is clear that most of the off-farm income is earned by families on small farms. It is interesting to note, however, that even on the farms we generally consider to be of commercial size (i.e., those with annual cash sales of $100,000 to $249,999), off-farm income constituted near or slightly over 20 percent of net cash income for most of the years through 1991 (see Table A3).

The crucial importance of off-farm income to most farm families has significant implications for the rural community. If nonfarm jobs are not available, these farm families will not be able to remain in farming. In many cases, it may be surmised that if the farms do not survive, neither will the rural community since the rural community depends not only on the demand of farmers for market outlets, farm inputs, and services, but also on farm families for surplus labor needed to staff local businesses or service agencies.

Table 4.1 Percentage of Farm Operators Working Off-Farm in the United States, 1949–97

	1949 (%)	1954 (%)	1959 (%)	1964 (%)	1969 (%)	1974 (%)	1978 (%)	1982 (%)	1987 (%)	1992 (%)	1997 (%)
No days	61.3	53.5	55.1	53.7	45.7	35.9	38.1	38.5	40.4	41.6	39.5
Some days	38.7	46.5	44.9	46.3	54.3	64.1	61.9	61.5	59.6	58.4	60.5
200 or more days	23.4	21.5	23.7	26.1	31.9	28.4	31.1	34.6	35.3	34.6	37.1

Source: U.S. Department of Commerce, Bureau of the Census, Census of Agriculture.

The lower panel of Table A3 provides detail on the ratio of net cash farm income from all sources by sales category and mean money income per U.S. household. Here we see that farms in the smallest sales category were earning an income below the mean money income per U.S. household throughout the entire period. Farms in the $20,000 to $49,999 sales category faired somewhat better relative to the average U.S. household, but have also recorded net cash incomes from all sources below the mean money income of the average U.S. household in most years since 1975. Farms in the larger sales categories, however, have generally recorded net cash incomes from all sources well above the mean money income of the average U.S. household over the entire period even though the ratio has declined somewhat over the years.

Farm Expenses

The relative importance of different expense items has not changed greatly over the years since 1950 (see Table A7). Interest expense, fertilizer and pesticide expense, and electricity expense now constitute a higher proportion of gross cash farm income. Labor expense, fuel and oil expense, building expense, and machine and equipment expense now constitute a lower proportion of gross cash farm income. Collectively, nonfarm-produced inputs now constitute a higher proportion of total expenses than do farm-produced inputs.

The profit margin farmers receive (as measured, roughly, by the percentage that net farm income is of gross cash farm income) is now considerably lower than it was in the 1950s (see Table A7 and Fig. 4.2). This is not necessarily an unhealthy or a surprising

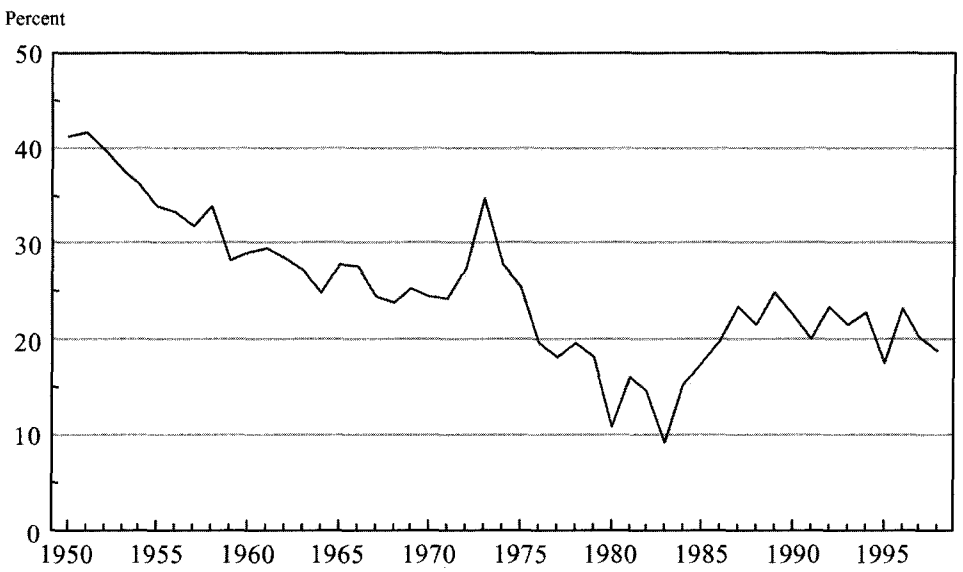

Figure 4.2 Net farm income as a percentage of gross farm income in the United States, 1950–98.

situation, nor is it a justification for increased public support. It is explainable in large part by the tremendous increases in agricultural productivity since 1950 (see chapter 9). Nevertheless, the reduction in farm profit margin suggests that if sales volumes on the nation's farms had not increased over this period, family incomes on these farms would have been well below 1950 levels. We will return to this theme in chapter 9.

Wealth of Farm Families

Cash or money income is one measure of the relative well-being of farm families. Wealth is another. **On the basis of wealth, we must conclude that farm families are in a superior position!** Total assets of U.S. households and nonprofit organizations in 1997 were $39,254 billion (*Statistical Abstract of the United States, 1998*). From Table A6 we see that farm assets in 1997 were $1,083 billion. Using these figures and the number of U.S. and farm households shown in Table A1, we estimate that in 1997 total assets per non-farm household were $374,225 while total assets per farm household were $698,710. This finding is consistent with that of a 1986 Economic Research Service study in which it was concluded that "The wealth of farm operator households is greater than the wealth of U.S. households at all levels of income."[5]

Notes

1. A consistent estimate of off-farm income of farm families is only available from 1960–1992. For the 1950–59 period, aggregate off-farm income of farm families is estimated on the basis of the Personal Income series, 1934–79, reported in U.S. Department of Agriculture, *Economic Indicators of the Farm Sector: Income and Balance Sheet Statistics, 1979*, Economics and Statistics Service, Statistical Bulletin Number 650, December 1980. Beginning in 1993, off-farm income is estimated from data reported in U.S. Department of Agriculture, *Agricultural Outlook*, Economic Research Service. In the latter report, Economic Research Service derives farm operator household income estimates from the Farm Costs and Returns Survey that are consistent with *Current Population Survey* methodology used by the U.S. Department of Commerce, Bureau of the Census. This latter estimate is defined as the "income from off-farm sources per farm operator household." To derive an estimate of aggregate off-farm income, I multiply this latter estimate times the number of farm households shown in Table A1.

2. See Economic Research Service, *Agricultural Income and Finance Situation and Outlook Report*, USDA, AF-50, September 1993.

3. See Economic Research Service, *Agricultural Income and Finance Situation and Outlook Report*, USDA, AIS-70, December 1998.

4. Off-farm income by sales category since 1992 was estimated by the author on the basis of the distribution of aggregate off-farm income across sales categories in 1992.

5. U.S. Department of Agriculture, *Economic Indicators of the Farm Sector: Farm Sector Review, 1986*, Economic Research Service, ECIFS 6-3, January 1988, p. 52.

5. Farm Ownership, Tenancy, and Type

Owners and Tenants

In 1997, 60 percent of the farms in the United States were operated by full owners, but only about 33 percent of the acres were farmed by full owners (Table 5.1). Apparently a higher percentage of small farms are operated by full owners. Indeed, based on a 1979 USDA farm survey[1] nearly 75 percent of the land operated by farmers with annual cash sales of less than $20,000 was owned by these operators.

Part owners now operate 30 percent of the farms and about 55 percent of the farm acreage. The percentage of farms and of farm acreage operated by part owners has steadily increased. Part owners have become a relatively more significant part of the total number of farm operators and have operated a significantly larger percentage of the total

Table 5.1 Farm Ownership and Tenancy and Acres Operated by Owners and Tenants in the United States, 1949–97

	1949	1954	1959	1964	1969	1974	1978	1982	1987	1992	1997
Farms operated by:						Percent (%)					
Full owners	57.6	57.6	57.4	57.9	62.5	61.5	58.5	59.2	59.3	57.7	60.0
Part owners	15.4	18.2	22.6	24.9	24.6	27.1	28.8	29.2	29.2	31.0	30.0
Tenants	27.0	24.1	20.0	17.2	12.9	11.3	12.7	11.6	11.5	11.3	10.0
Acres operated by:						Percent (%)					
Full owners	39.8	37.5	34.2	32.0	35.3	35.3	30.6	32.8	32.9	31.3	33.9
Part owners	40.1	44.6	49.7	53.5	51.8	52.6	57.1	55.4	53.9	55.7	54.5
Tenants	20.1	18.0	16.1	14.5	13.0	12.0	12.4	11.9	13.2	13.0	11.6
Operated by:						Average acres					
Full owners	136	145	164	175	220	252	205	237	257	266	276
Part owners	512	544	604	682	819	852	780	812	854	883	885
Tenants	147	166	222	268	390	467	384	439	528	566	566

Source: U.S. Department of Commerce, Bureau of the Census, *Census of Agriculture.*

farm acres operated. Full tenants have become a relatively less significant part of the total and have operated a significantly smaller percentage of the total farm acres. The relative importance of full tenants has diminished so that they now operate only about 10 percent of the farms and about 12 percent of the farm acreage. Many full tenants have transferred out of agriculture or become part owners.

Business Organizations in Farming

Data on the form of business organization in farming are available only from the last five censuses. In 1997, about 86 percent of the two million farms in the United States were operated by individuals or families, about 9 percent by partnerships, 4 percent by family-held corporations, less than one-half of 1 percent by business corporations, and nearly 1 percent by agricultural cooperatives and public institutions (Table 5.2). Over the five census years for which data are available, there has been little change of significance in the relative importance of these different types of business organizations in agriculture. The percentage of farms operated by family-held corporations has increased slightly, but the percentage of farms operated by business corporations has remained fairly stable. **These data debunk the fairly commonly held misconception that business corpora-**

Table 5.2 Percentage of Farms and Acreage per Farm by Type of Farm Organization in the United States, 1978–97

	1978	1982	1987	1992	1997
Farms operated by:			Percent (%)		
Individual/family proprietor	87.1	86.8	86.7	85.9	85.9
Partnerships	10.3	10.0	9.6	9.7	8.9
Family-held corporations	2.0	2.3	2.9	3.4	4.0
Other corporations	0.3	0.3	0.3	0.4	0.4
Coops, institutions, etc.	0.4	0.5	0.6	0.6	0.8
Acres operated by:			Percent (%)		
Individual/family proprietor	66.3	65.1	65.0	63.9	62.8
Partnerships	15.6	15.4	15.9	16.2	16.0
Family-held corporations	10.2	11.4	11.1	11.7	12.8
Other corporations	1.6	1.5	1.4	1.3	1.3
Coops, institutions, etc.	6.2	6.6	6.7	6.9	7.0
Operated by:			Average acres		
Individual/family proprietor	342	330	347	365	356
Partnerships	680	680	768	818	881
Family-held corporations	2,342	2,143	1,760	1,718	1,571
Other corporations	2,770	2,024	2,167	1,484	1,507
Coops, institutions, etc.	6,931	5,317	5,396	5,280	4,378

Source: U.S. Department of Commerce, Bureau of the Census, *Census of Agriculture.*

tions are taking over agriculture in the United States. In fact, if one excludes family-held corporations, corporations appear to be a fairly insignificant factor in the U.S. agricultural sector.

Similarly, the great bulk of the farm acres in the United States is operated by individuals or families, partnerships, and family-held corporations. Of the 956 million farm acres in the United States in 1997, about 63 percent were operated by individuals or families, 16 percent by partnerships, about 13 percent by family-held corporations, and slightly over 1 percent by business corporations. Another 7 percent of the farm acres were operated by a small number of other business forms, which includes agricultural cooperatives and public institutions.

Age of Farm Operator

Much has been made recently of the fact that fewer and fewer young people are getting into farming these days in contrast to years past, and that existing farm operators are getting older. **The data in Table 5.3 verify that farm operators have, on average, gotten progressively older since 1954 such that in 1997 the average age of a farm operator in the United States was 54.3 years.** This is not particularly surprising given the reduction in number of farms and farm population since 1954.

Table 5.3 Average Age of Farm Operator in the United States, 1949–97

	1949	1954	1959	1964	1969	1974	1978	1982	1987	1992	1997
Age of operator (in years)	48.3	49.6	50.5	51.3	51.2	51.7	50.3	50.5	52.0	53.3	54.3

Source: U.S. Department of Commerce, Bureau of the Census, *Census of Agriculture.*

Note

1. Robert F. Boxley, "Farmland Ownership and the Distribution of Land Earnings," *Agricultural Economic Research* 37, no. 4 (Fall 1985): 40–44.

6. Resource Use in Agriculture

Land

Land in farms in the United States has declined by about 20 percent from an historical peak of slightly more than 1.2 billion acres in the early 1950s (Table A4 and Fig. 6.1). A portion of this decline is clearly due to the redefinition of a farm in 1974. Other factors include (1) land bid away from agriculture by urban, industrial, highway, and airport uses; (2) land idled by conservation programs and public policies aimed at reduction of "surplus" agricultural production; and (3) land "abandoned" because it is no longer profitable in any use, including agricultural use.

From time to time, various interest groups and politicians have given passionate speeches about how rapidly we are losing prime agricultural land to industrial and resi-

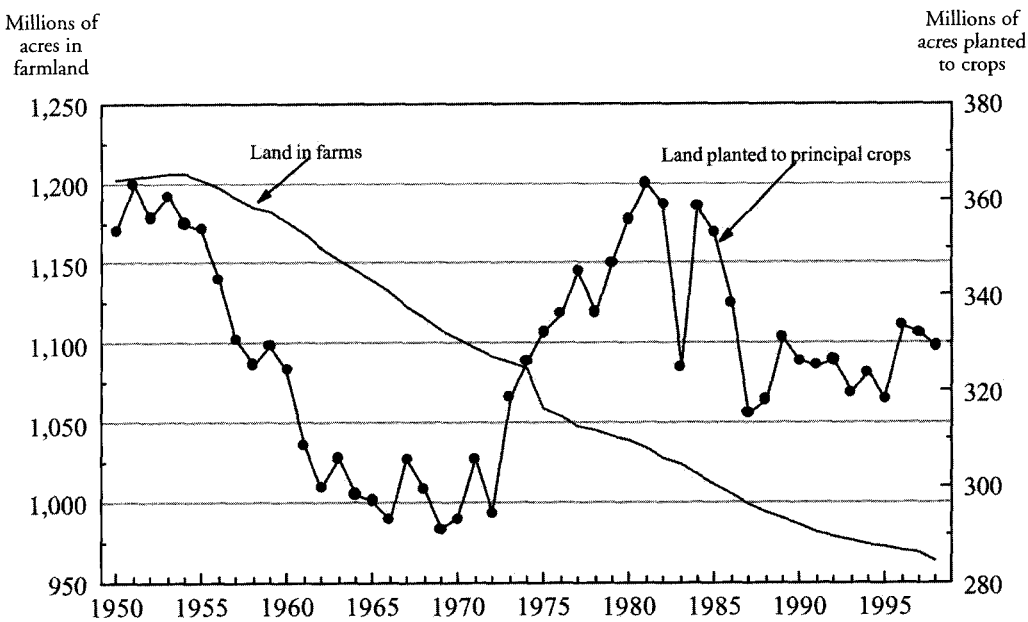

Figure 6.1 Land in farms and land planted to principal crops in the United States, 1950–98.

dential developers, seriously threatening our capacity to produce the food needed by future generations. These individuals have certainly struck a resonant chord. A number of states have adopted agricultural land preservation schemes (at considerable taxpayer expense, to be sure), and several others are in the process of considering adoption of such schemes.

The character of agriculture in the different states differs widely. Similarly, the pressure on agriculture from population growth and development interests is not uniform across the nation. In the aggregate, however, it is rather remarkable that over fifty years, land in farms in the United States has only declined by 20 percent while the U.S. population has increased by 78 percent. Even with this decline in land in farms, real agricultural output has more than doubled since 1950 (as measured by the index of all farm output). Thus, it is difficult to argue that our capacity for producing food has been seriously jeopardized.

It should also be noted that we would have lost some farm acreage even without pressure from population growth and development interests. We know, for example, that considerable land once producing farm commodities or supporting livestock enterprises is no longer in production because at current prices of farm commodities this land can no longer turn a profit in agricultural pursuits. This land is not near thriving urban centers, however, so it is not employed in nonagricultural uses either. Thus, it remains idle voluntarily—that is, it is "abandoned." Unfortunately, the Bureau of the Census does not provide estimates of the amount of such land.

Acres Planted and Enterprise Mix

Land planted to crops is also shown in Figure 6.1. Clearly, there has been much more variability in land planted to crops than in land in farms over the years. Most of this variability is due to the general ups and downs in U.S. agriculture over this period. During the late 1950s and 1960s, for example, agricultural surpluses were a major problem. Congress's means of dealing with this problem was to encourage farmers to idle substantial amounts of cropland. The same problem existed and the same solution was sought during the 1990s. During the late 1970s and early 1980s, on the other hand, demand was strong and farmers were encouraged to plant "fence row to fence row."

The proportion of farm acreage planted to crops and harvested, on the other hand, has remained quite stable over the forty-eight-year period since 1950 (Table A5). Similarly, the proportion of acreage devoted to wheat and the major feed grains has changed very little since 1950. Oat acreage has declined largely because less of this commodity has been needed for animal feed as machine power has substituted for animal power. Cotton acreage declined slightly through the mid-1980s as the demand for cotton decreased, but has had a slight resurgence in recent years as consumers have shown a preference for cotton fiber over synthetic fibers. Soybean acreage increased significantly in the early years of the period under study as the demand for protein feed increased and soybeans became a more popular crop. Sugar acreage (beet plus cane) has increased only slightly. Tobacco acreage has decreased by over one-half. Peanut acreage has remained quite stable since 1950.

All this suggests that the supply of land for crops is very price inelastic in both the short run and the long run (that is, large land price changes are accompanied by small changes in the quantity of land available). Apparently the opportunity cost of keeping cropland in crop production is very low, and the cost of cropping land not previously used for crops is relatively high. Although there are no data in the tables in Appendix 2 showing grazing land, the supply of grassland for grazing can also be expected to be quite inelastic. Much of the land for grazing is controlled by the Bureau of Land Management, which limits the number of animals that can be grazed on publicly owned but privately operated lands in federal grazing districts.

The proportion of total cash receipts from farming derived from the various farm enterprises is shown in the lower portion of Table A4. The relative stability in the percentages over the forty-eight-year period is remarkable. In some cases (hogs, eggs, tobacco, and cotton), noticeable but small declines are evident. In other cases (poultry, feed grains, oil-crops, fruits, and vegetables), small increases are noted. But for most enterprises, the changes in relative importance are quite small over the entire period.

Labor

Total employment in agriculture (operator plus hired labor) has declined by over 70 percent and the number of hired farm workers has declined by more than 60 percent since 1950 (Fig. 6.2). As we will see more clearly later, there has been substantial substitution of the relatively cheaper capital and machinery inputs for the relatively more expensive labor input. This has been a major force in the decline of hired farm workers. Another factor in this decline is the fact that the agricultural labor market is now much more mobile than it was during the 1950s and 1960s when for various reasons (lack of non-

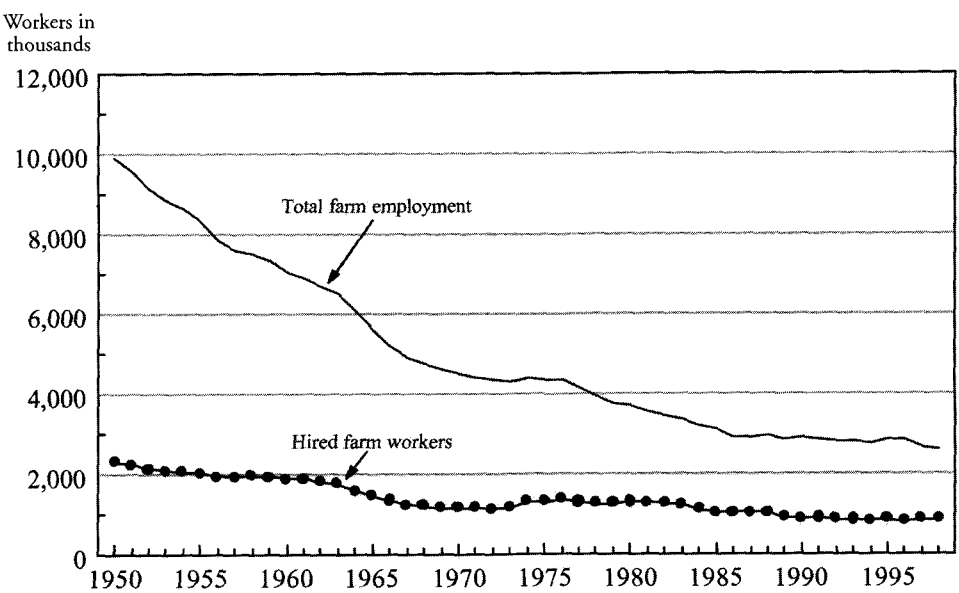

Figure 6.2 Farm employment in the United States, 1950–98.

farm jobs, lack of skills, discrimination, etc.) many farm workers were trapped in agriculture.

Capital

Gross capital expenditures on buildings and land, machinery and equipment, and motor vehicles in agriculture have increased by some 225 percent since 1950 (Fig. 6.3). There was a great upsurge in capital use in the 1970s to a peak of over $20 billion in 1979. A good case could be made for the fact that farmers collectively had overcapitalized by the late 1970s to the point of getting in serious financial difficulty as demand for agricultural output fell, farm-commodity prices fell, and interest rates remained high. In response, capital use declined sharply over the next decade. Since 1986, however, expenditures on gross capital have again been rising fairly steeply (Fig. 6.3).

Another way to examine capital use in agriculture is to express gross capital expenditures on buildings and land, machinery and equipment, and motor vehicles as a percentage of cash receipts from farm marketings as is done in Table A1 and in Figure 6.3. Here we see the same general trends as noted above, although the upward trend from the middle and late 1950s to 1978 is not nearly as dramatic. The precipitous fall between 1978 and 1986 is, though, clearly evident here as is the subsequent rise following 1986. However, whereas this percentage was nearly eighteen in 1978, it has remained in the eight-to-nine range since 1986. Thus, it would appear that U.S. farmers should not be in as serious financial difficulty today as they were in the late 1970s.

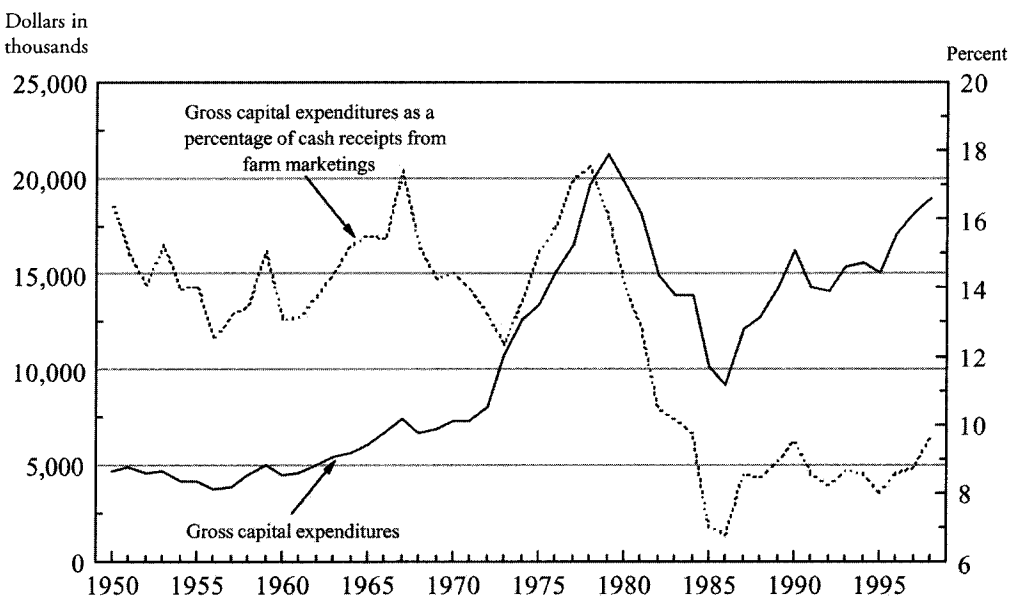

Figure 6.3 Gross capital expenditures on agricultural land, buildings, machinery, and equipment in the United States, 1950–98.

7. Farm Assets and Farm Debt

Assets

Total assets in U.S. agriculture have trended upward since 1950 as has total debt (see Table A6). The debt-asset ratio has also trended upward showing an exceptional peak in the mid-1980s (Fig. 7.1). Real debt per acre rose steadily between 1950 and 1980, fell rapidly through the mid-1980s, and has been increasing again through the 1990s (Fig. 7.2). The increase in agricultural debt (Fig. 7.2), the increase in interest rates (Fig. 7.3), and the declining value of land (Fig. 7.4) leading to an erosion of loan security values, all in the same time frame during the early 1980s, highlight why several farmers had financial difficulties during this period—indeed why several went bankrupt.

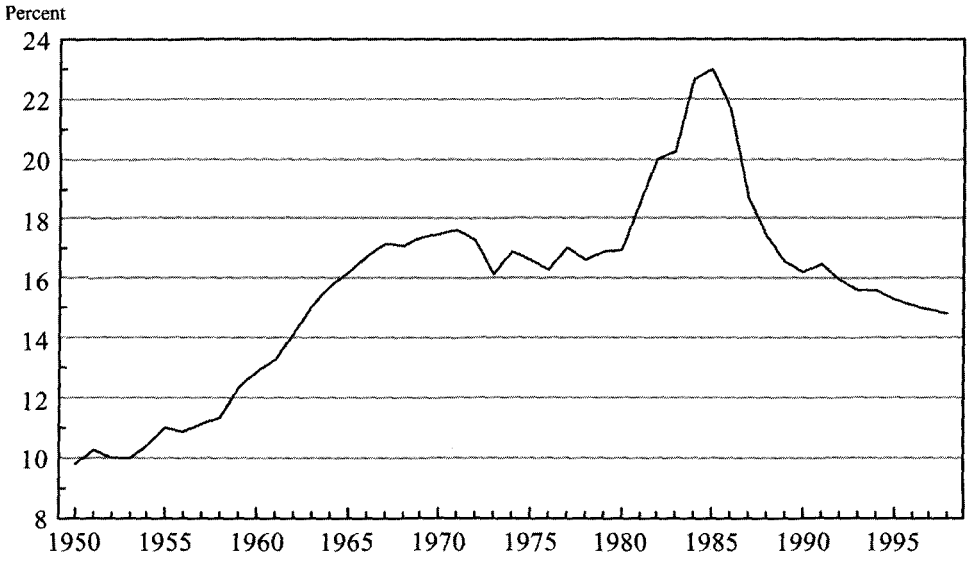

Figure 7.1 Debt-asset ratio in farming in the United States, 1950–98.

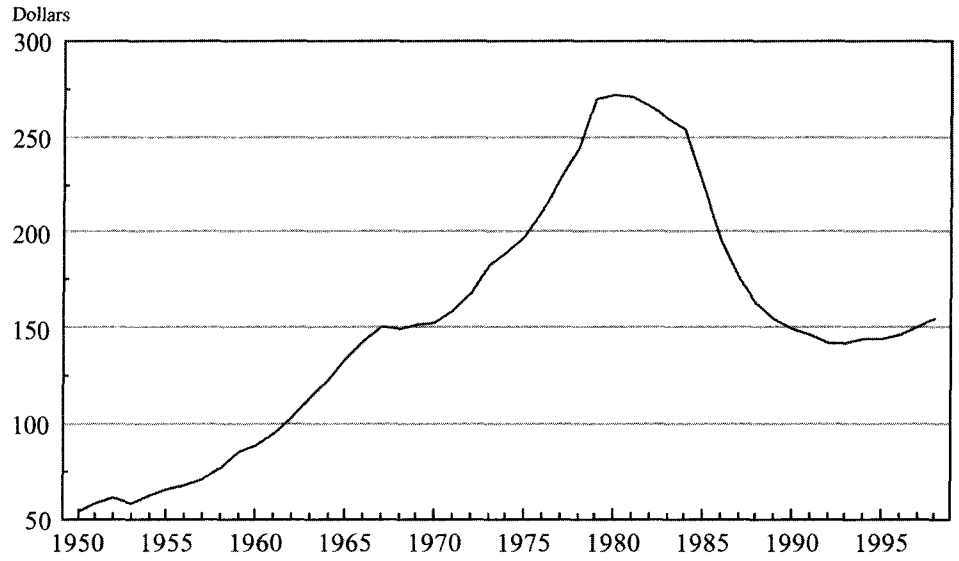

Figure 7.2 Real agricultural debt per acre of land in farms in the United States, 1950–98.

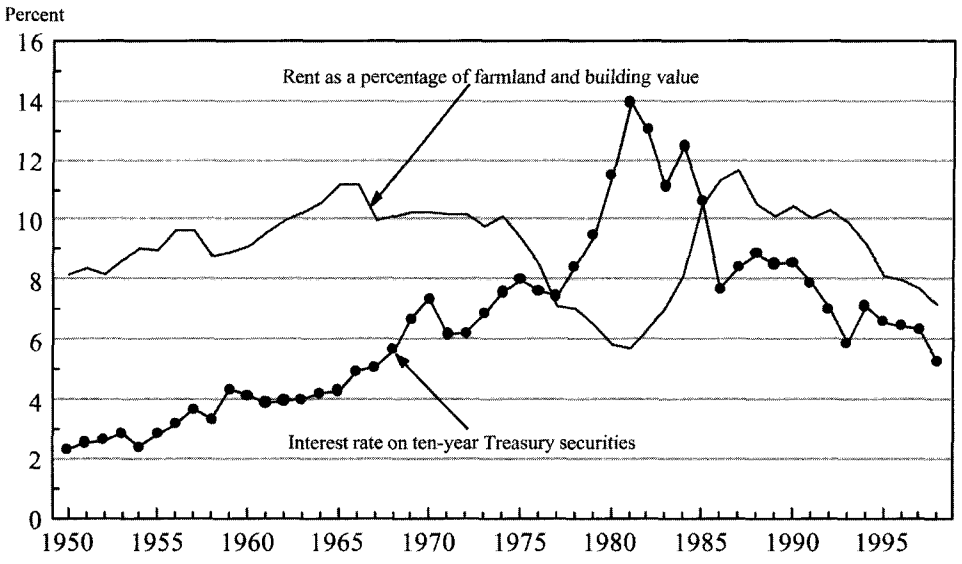

Figure 7.3 Cash rent on farms in Iowa as a percentage of per-acre value of Iowa farmland and buildings, and interest rate on ten-year U.S. Treasury securities, 1950–98.

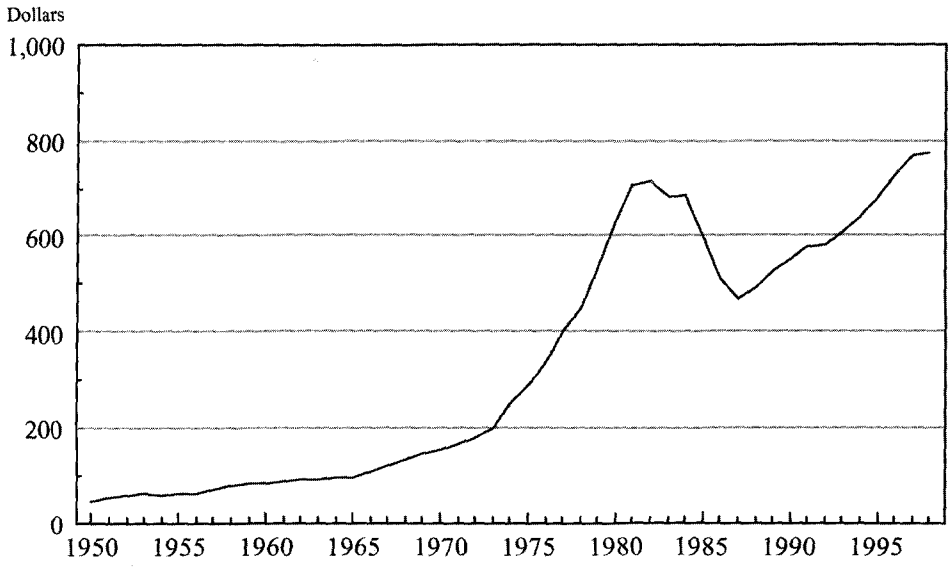

Figure 7.4 Per-acre value of agricultural land in the United States, 1950–98.

Land Values

One would expect land values to be influenced by the earning capacity of the land and by the opportunity cost of money tied up in that land (i.e., the interest rate). Algebraically the expected relationship between these variables can be expressed as

$$V = R/i$$

where V is the current value of land, R is the expected returns to land, and i is the interest rate. Rearranging terms in this equation leads us to conclude that land returns should result in land values such that R/V approximates the competitive return on money invested in land, that is,

$$R/V = i.$$

It is not entirely clear what interest rate should be used for this competitive return. For the pure investor, this competitive return may be expected to approximate the "risk-free" **real** rate of interest on long-term securities. The owner-operator, however, will generally require a positive risk premium since he or she will need to consider the income risk associated with farming the land. Thus, for an owner-operator, the nominal rate of interest on long-term securities may be more appropriate. In the analysis that follows, I use the nominal rate of interest on long-term securities for this competitive return.[1]

Figure 7.3 shows the trend in R/V for Iowa over the 1950–98 period where R is per-acre cropland rent in Iowa and V is per-acre land value in Iowa.[2] Also shown in Figure

7.3 is *i*, the rate of interest on ten-year U.S. Treasury securities. Iowa was used here as a state representative of the Corn Belt where agriculture is dominated by one or two crops, there is less urban pressure than in many other states, and leasing of agricultural land is a relatively common practice. The same general pattern and conclusions would nevertheless have been evident had we chosen almost any other state in the Corn Belt or plains states where leasing is a common practice.

In Figure 7.3, it is seen that only in recent years has R/V been consistently near *i* and moving in the same general direction. In the 1950s, 1960s, and early 1970s, there was a wide divergence between R/V and *i*. The late 1970s and early 1980s represent a special case. During this period, export demand subsided leading to reduced farm commodity prices, which in turn signaled a reduction in land values from the peak levels of the early 1970s. Further, in 1979, Federal Reserve Bank policy directed toward curbing inflation pushed interest rates to record levels. Thus, the value of collateral for farm loans dropped precipitously, and farmers' interest expense rose steeply. The resulting high rate of bankruptcies in agriculture during this period was inevitable.

Clearly, government policy does seem to matter! In the 1980s, it was federal monetary policy that helped spell disaster for American farmers. During the 1950s and early 1960s, government programs for agriculture served to maintain high price supports, which became capitalized into land values. The latter kept the price of agricultural land well above levels that were sustainable by the marketplace. This is evident in Figure 7.3 in the consistent disparity between R/V and *i* up until 1975.

Debt-Asset Ratios

Debt-asset ratios by sales categories have been reported by Economic Research Service, USDA, only for the 1982–93 period. The ratios available are presented in Table 7.1 for farms in the different sales categories. Again, the reader is cautioned about comparing debt-asset ratios across years for a given sales category since the sales categories are not constant value. Nevertheless, this table shows that, in general, total farm debt as a percentage of total farm assets rises directly with sales volume.

Table 7.1 Debt-Asset Ratios of Farms by Sales Categories in the United States, 1982–93

Sales category	1982	1985	1990	1993
Under $20,000	13.2	15.6	11.4	12.3
$ 20,000–49,999	15.6	17.8	12.7	11.3
$ 50,000–99,999	19.8	21.7	15.5	15.6
$100,000–249,999	21.4	24.4	18.7	17.2
$250,000–499,999	24.9	26.5	19.3	17.7
$500,000 and over	33.2	38.2	21.8	25.9

Notes

1. A good discussion of time preferences, interest rates, and inflation in connection with valuing agricultural resources is contained in Vernon Eidman, Arne Hallam, Mitch Morehart, and Karen Klonsky, eds., "Commodity Costs and Returns Estimation Handbook: A Report of the AAEA Task Force on Commodity Costs and Returns," July 20, 1998, Ames, Iowa.

2. The historical data for this analysis were obtained from John Jones and Patrick N. Canning, *Farm Real Estate: Historical Series Data, 1950–92*, Economic Research Service, USDA, Statistical Bulletin Number 855, May 1993; and John Jones and Roger W. Hexem, *Cash Rents for Farms, Cropland, and Pasture, 1960–89*, Economic Research Service, USDA, Statistical Bulletin Number 813, October 1990. Updates were provided by John Jones and recent National Agricultural Statistics Service reports on land values and cash rent.

8. Prices: Received, Paid, and Variability

Prices Received and Prices Paid

The trend in market prices of major farm commodities deflated by the Consumer Price Index is shown in Table A8. This table and Figure 8.1 show the trend in the indexes of prices received and prices paid by farmers also deflated by the Consumer Price Index. Table A8 and Figure 8.1 point out clearly that real prices of all farm commodities have declined since 1950, by as much as one-half or more for grain sorghum, soybeans, peanuts, potatoes, sugar beets, tobacco, most of the livestock commodities, and milk, to one-fourth or more for wheat, corn, oats, barley, cotton, rice, broilers, and turkeys. Overall, real crop prices have declined more steeply than have real livestock prices (Fig. 8.1). Real prices paid, on the other hand, have decreased only slightly, and in fact were

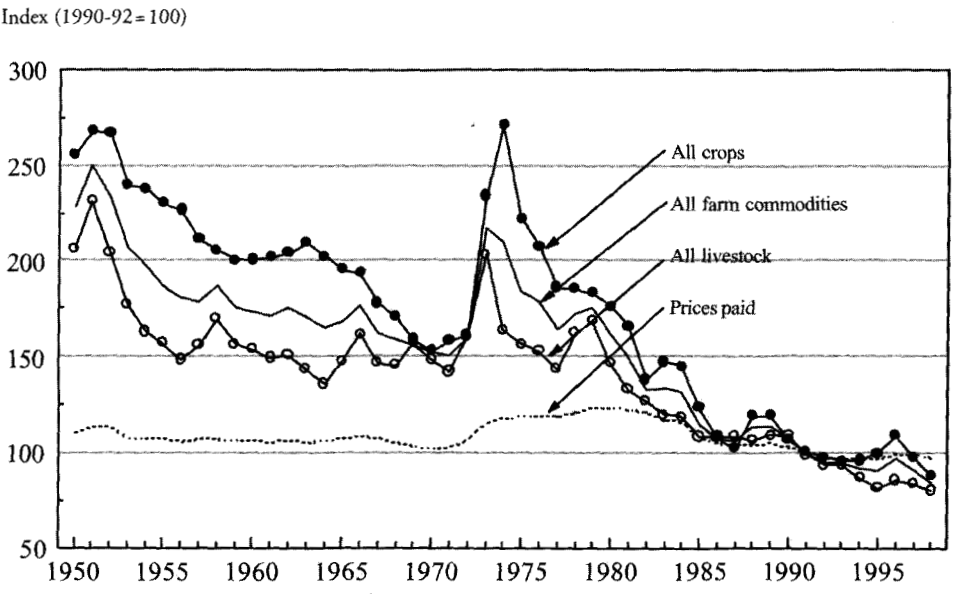

Figure 8.1 Real prices received and real prices paid by farmers in the United States, 1950–98.

somewhat higher during the 1970s and early 1980s than in the 1950s and 1960s. **U.S. farmers have been facing a seemingly never-ending price-cost squeeze since 1950.** This conclusion must be tempered, however, by a consideration of productivity increases in agriculture as will be discussed in Chapter 9.

Trends in ratios of animal prices to corn prices are shown in the lower panel of Table A9. The animal-corn price ratios are most interesting for what they tell us about the profitability of animal feeding over time. The hog-corn price ratio, for example, provides a measure of the number of bushels of corn it would take to buy one-hundred pounds of live pork. The remaining animal-corn price ratios are to be similarly interpreted. When these ratios are increasing, the indicated animal production, in general, can be viewed as becoming more attractive to farmers. This conclusion needs to be tempered, however, by considerations of the importance of corn in the total cost of production and by technological change. Costs other than corn have become more important in animal production over the years so that the ratio of animal prices to corn prices has lost some of its significance as a measure of profitability and as a decision-making tool. It is also clear that as animal yields increase (such as has been the case for broilers and layers from 1950 through at least 1975, and for milk throughout the entire 1950–98 period) resulting in lower animal prices, the feed-price ratio will be lower than without the technological change. In such cases, the feed-price ratio is not particularly useful at all as a measure of profitability.

The hog-corn, steer-corn, lamb-corn, and milk-corn price ratios show a steady upward trend over the entire 1950–98 period. The broiler-, egg-, and turkey-corn price ratios declined until 1975 or the early 1980s then rose sharply before leveling off during the 1990s. In the case of hogs, beef, and lambs, the price ratios vary considerably and in a cyclical fashion. This tendency is much less evident in poultry because of the shorter growing period for poultry. In the case of dairy, the milk-corn price ratio was much more stable about the trend over the 1950–98 period than in the case of meat animals and poultry. The dairy price-support program has played a key role in reducing variability in this case. For the other commodities, however, government has not been a major factor, so the feed-price ratios have been free to move with market forces.

Price Variability

Some interesting lessons can be learned by examining the variability of prices received by farmers over the 1950–98 period (Table 8.1). Table 8.1 shows indices of variation for prices of various agricultural and nonagricultural commodities for each of five time periods since 1950. These indices were computed from annual data after extracting a straight-line trend from the price data so that the resulting variability indexes would not be biased by trend[1] where n is the number of observations in the time series on P, and A_i is the estimated value of P_i based on a regression of P on a variable representing time. If all of the P_i lie on the regression line, the coefficient so computed is zero, indicating no variability about the trend line. If there is no trend so that A_i equals the mean of P for all i, then the coefficient so computed is equal to the Coefficient of Variation calculated as

Table 8.1 Index of Variability of Prices of Selected Commodities, 1950–98.

Commodity	1950–59	1960–69	1970–79	1980–89	1990–98
			Supported agricultural commodities		
Wheat	3.9	10.3	34.7	14.7	16.0
Rice	6.7	3.0	31.7	22.3	11.9
Corn	4.2	6.0	25.4	17.5	13.3
Oats	6.5	4.2	24.4	23.8	16.6
Barley	7.2	7.0	28.4	17.3	14.1
Rye	10.3	5.2	26.2	18.4	9.5
Grain sorghum	13.2	5.8	21.7	16.7	18.4
Soybeans	5.5	6.5	16.3	16.5	8.6
Cotton	5.5	8.6	13.0	11.0	9.8
Sugar beets	3.3	4.6	36.1	13.7	5.9
Peanuts	6.3	2.3	4.6	5.2	5.0
Tobacco	3.0	6.2	4.0	5.9	1.8
Wool	20.1	10.4	30.6	25.4	22.2
Milk, all wholesale	6.5	5.8	5.0	3.7	6.0
Honey	4.6	4.0	16.3	5.6	13.3
			Nonsupported agricultural commodities		
Potatoes	28.4	26.6	25.6	16.6	11.2
Steers, choice	15.3	6.6	12.4	7.8	3.2
Vealers, choice	16.9	7.7	21.4	12.8	12.0
Lamb	14.9	6.4	9.7	9.3	9.5
Barrows and gilts	14.3	11.3	17.3	10.0	15.4
Broilers	6.6	6.2	14.1	6.8	3.7
Turkeys	4.6	8.3	14.0	10.7	4.6
Eggs	10.3	7.3	14.4	10.1	8.6
Beans, snap	5.4	2.4	12.0	3.1	2.6
Tomatoes, processing	6.8	9.4	12.7	6.2	4.6
Apples	18.5	13.7	13.0	13.2	13.7
Grapes	19.8	11.5	18.9	18.6	6.4
Lemons	13.3	16.8	20.5	32.5	11.4
Oranges	19.5	24.1	21.3	16.1	11.9
Pecans	22.3	26.8	20.6	13.4	27.4
Cherries, tart	19.7	37.8	73.5	41.3	48.4
Cherries, sweet	11.7	11.7	14.0	9.4	11.7
Cranberries	24.7	9.4	18.0	8.2	6.2
			Index of prices received and prices paid by farmers		
All commodities	6.9	2.4	10.2	5.8	3.8
All crops	4.3	2.9	16.4	8.8	5.9
All livestock	10.1	6.6	9.5	8.3	3.2
All prices paid	3.2	1.6	4.3	3.5	1.7
			Oil and gas and producer price indexes		
Crude oil	2.7	1.5	19.7	19.7	12.4
Gasoline, retail	2.1	3.7	22.4	7.3	5.4
Crude materials	5.1	2.9	7.7	5.1	5.4
Intermediate materials	2.5	1.7	5.9	3.1	1.8
Finished goods	2.3	2.0	4.8	2.7	0.0

Note: Index of variability is the Coefficient of Variation estimated from detrended data (see text).

shown in any standard statistics text. Relatively short time periods were used so that changes in variability over time could be observed, and so the time period over which the indexes were computed would not be unduly confounded by both an increasing and a decreasing trend. This procedure has the obvious disadvantage of giving undue weight to a year in which a quite large price change occurred. This possibility was judged not to be a major problem for the commodities analyzed here. It will be observed also that particularly turbulent periods (the early to mid-1970s and the 1980s, in particular) are confined to one time period rather than being spread over two periods.

The statistics reported in Table 8.1 reflect considerable differences in industry characteristics and must be interpreted in light of these differences. In the hog, beef, and sheep industries, for example, there are persistent cycles due to the production responses of producers in these industries, but these cycles are of differing lengths and amplitudes. Similarly, producers of field crops adjust production levels much more rapidly than do producers of tree crops. All of these factors will impact the variability indexes shown in Table 8.1.

Since supply and demand for most agricultural commodities are both highly price-inelastic (that is, large price changes are accompanied by very small changes in quantity), at least in the short run, small shifts in either the supply or demand schedule will lead to quite sizable changes in price. This situation, coupled with the fact that agricultural output is quite sensitive to the vagaries of nature, leads many people to assume that prices of agricultural commodities will be highly variable. The indexes shown in Table 8.1 support this proposition.

Thus, the first lesson to be learned from the indices shown in Table 8.1 is that agricultural commodities **are** characterized by considerable price variability. Most commodities experienced greater levels of price variability during the period of food and energy shortages (the 1970s) and its aftermath (the 1980s). This variability was true of both supported and nonsupported commodities, although less so for many of the latter. One might speculate that the price variability of supported commodities would have been higher without the government programs that were in effect. Interestingly enough, even though price support policy has been in effect continuously over this entire period for wheat, rice, feed grains, cotton, wool, and honey, prices of these commodities have **not** been stable. On the other hand, prices of tobacco, peanuts, and milk—additional commodities for which price support policy has been in effect continuously over the entire period—have remained relatively stable throughout the period. Price stability for the latter commodities can undoubtedly be attributed to their effective isolation from foreign competition and/or very tight controls on price and production.

A second lesson to be learned from the indices shown in Table 8.1 is that a number of agricultural producers are operating successfully in the face of considerable price variability but **without** price and income support or protection from foreign competition. Consider, for example, the relatively high price variability for potatoes, hogs, apples, and all the other fruits included in Table 8.1. Marketing orders for lemons and oranges help to stabilize seasonal prices. These orders, however, do not use price supports buttressed with government purchases nor supply control to stabilize annual fruit prices.

A third lesson to be learned from the indexes in Table 8.1 is that government regulation is neither a necessary nor a sufficient condition for price stability. The broiler, turkey, egg, tomato, and snap bean industries, for example, have managed to maintain reasonably stable prices on their own and without price supports, loan rates, or production controls.

Final lessons to be learned from the last section of Table 8.1 are (1) that agriculture is not the only industry subject to price variability, and (2) that prices of intermediate and final goods tend to be more stable than are prices at the producer level. The latter can be explained in terms of the different behavior of entrepreneurs in the different sectors. In the intermediate and finished goods sectors, firms operate with relatively constant short-run marginal cost. Price tends to be set as a proportionate markup over marginal cost. In the primary commodity sectors, on the other hand, firms are price takers. When aggregate demand in the domestic market increases, output in the intermediate and finished goods sectors increases with little increase in price because of the relative output flexibility of firms in these sectors. In the primary commodity sectors, however, output cannot be increased quickly so prices increase when aggregate demand increases. In a subsequent period, prices in the intermediate and final goods sectors increase as raw material prices increase forcing firms to increase intermediate and final goods prices to maintain their markups. As prices of intermediate and final goods increase, wages increase to maintain real incomes of workers leading to further goods price increases. Hence, price increases for intermediate and final goods usually lag price increases for primary commodities. Furthermore, prices of raw materials make up only a small share of the inputs into intermediate and final goods. Hence, intermediate and final goods prices will increase by a smaller percentage than will prices of raw materials.

Note

1. The coefficients were calculated as 100 times the square root of

$$\frac{\sum_{i}^{n}\left\{(P_i - A_i)^2/A_i\right\}}{(n-1)}$$

9. Agricultural Productivity and Its Implications for Farmers

Agricultural Productivity

Increases in agricultural productivity have significant implications for farmers as well as for the general public. Increased agricultural productivity means that American farmers contribute to improving society's general standard of living by producing food commodities with fewer inputs. Thus, the real price of all goods and services, not just food, is lowered. Further, lower real agricultural output prices improves the international competitive position of U.S. agriculture. Hence, farmers also benefit from an expanded market for their produce.

Tables A10 and A11 and Figures 9.1–9.3 show trends in various measures of agricultural productivity since 1950. **People fed per farm worker** (Fig. 9.1) has increased from a mere 15 in 1950 to 96 in 1998. **People fed per farm worker** is often used as a

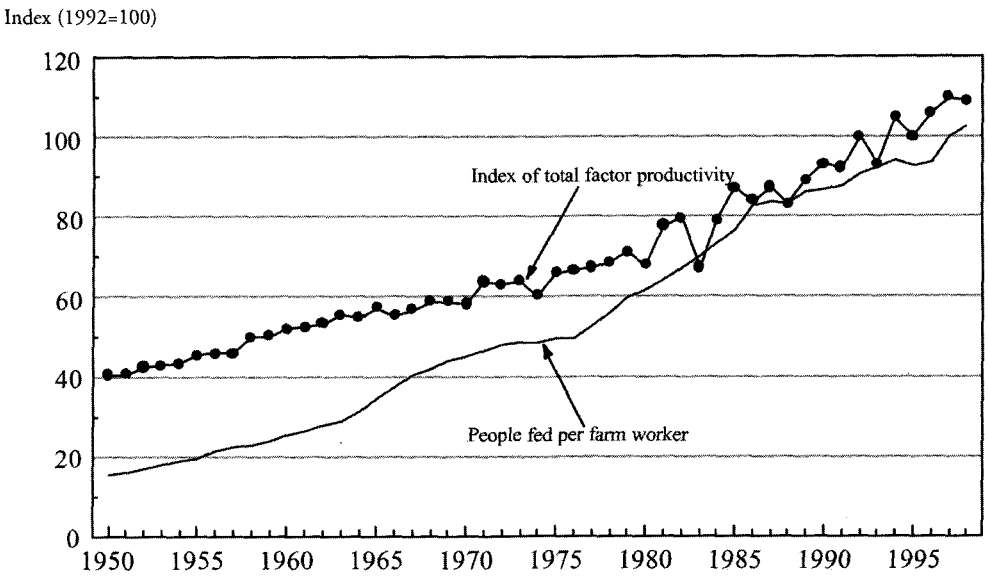

Figure 9.1 People fed per farm worker and total factor productivity in U.S. agriculture, 1950–98.

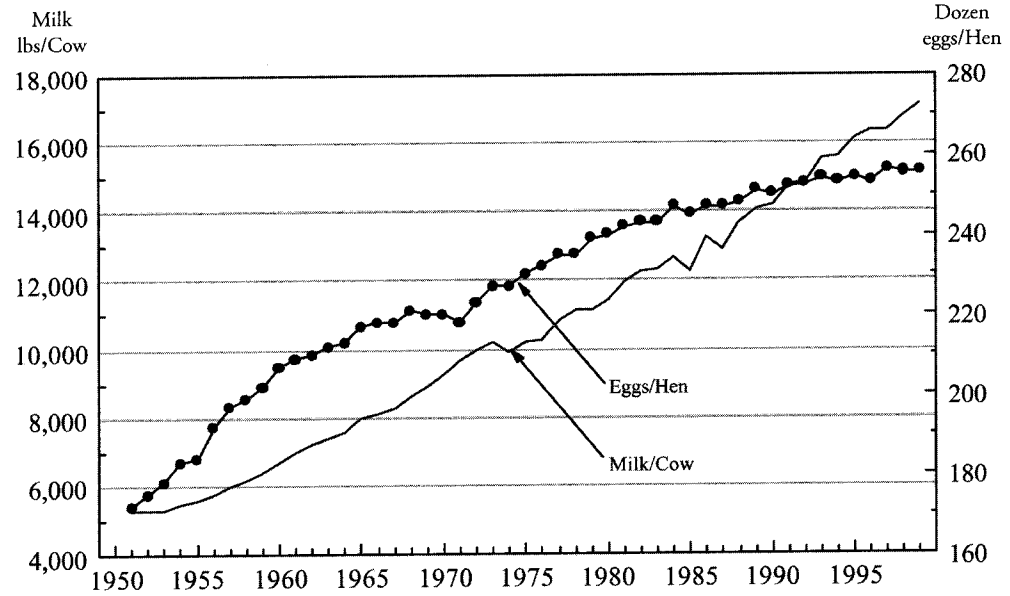

Figure 9.2 Milk production per cow and eggs laid per hen in the United States, 1950–98.

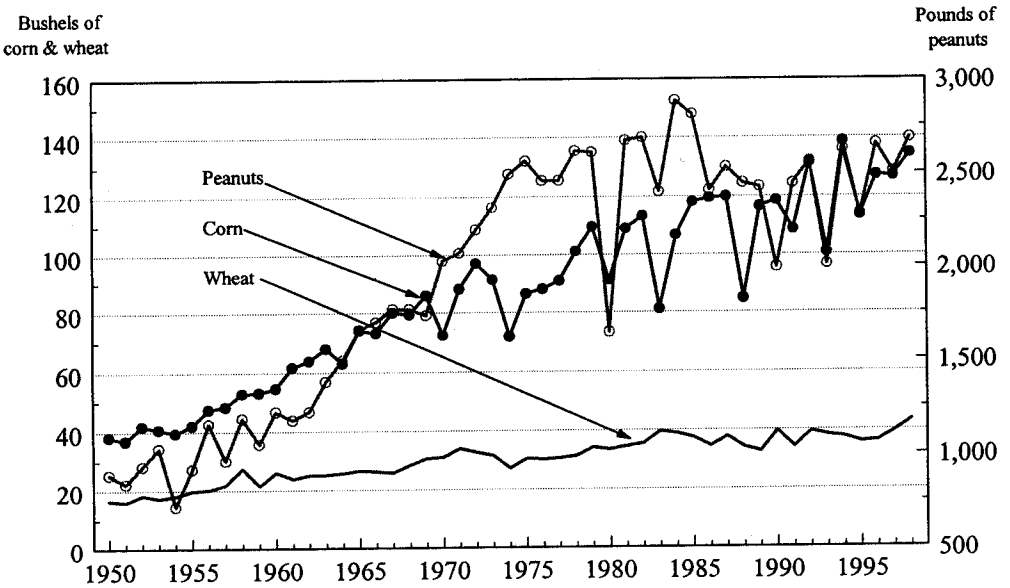

Figure 9.3 Corn, wheat, and peanut yield per acre in the United States, 1950–98.

summary measure of the tremendous growth in agricultural productivity since 1950. It is simply another measure of the rapid rate of decline of farm workers relative to the total population as nonlabor inputs have substituted for labor inputs. Nevertheless, it does indicate much about the productive capability of farm workers remaining in agriculture over this time span.

A superior measure of agricultural productivity is provided by the ratio of the index of total agricultural output to the index of total agricultural inputs—a measure **of total factor productivity.** This ratio is also shown in Figure 9.1 and in Table A11. While **total factor productivity** has not increased as rapidly as has **people fed per farm worker,** it has nevertheless increased markedly—from 41 in 1950 to 109 in 1998.

Some of the more dramatic trends shown in Table A11 and Figures 9.2 and 9.3 relate to crop and animal yields. In every case, yields are up significantly providing more evidence about the productive capability of agriculture over time. The greatest yield increases have been observed in corn production and milk production—and we probably have yet to see the full impacts of bovine somatotropin on milk production or of *Bacillus thuringiensis* bioinsecticide products on crop yields. Rather large yield increases have been observed in sorghum, wheat, rice, peanut, and cotton production as well. Many have looked at the new research area referred to as "biotechnology" as something that will revolutionize agriculture and cause huge agricultural adjustment problems. It might well be said, however, that a technological revolution in agriculture is nothing new, nor are the adjustment problems associated with technological change.

Farm Input Use

Table A10 also shows the trends in quantities of key farm inputs used since 1950. Among other things, this table highlights the steep decline in labor use and the corresponding steep increase in machinery and chemical use since 1950. The total **number** of tractors per 100 acres planted has not changed significantly since 1950. Total tractor horsepower used per 100 acres planted, however, has increased steadily, nearly quadrupling over the 1950–86 period. Since the mid-1980s, tractor horsepower used per 100 acres planted has declined slightly.

Fertilizer use highlighted in Table A10 and Figure 9.4 deserves special consideration. Per-acre use of nitrogen increased tenfold between 1950 and the early 1970s. Per-acre use of potash increased about sixfold between 1950 and 1980. Per-acre use of phosphate has also increased, but on a much less dramatic scale—about a threefold increase between 1950 and the early 1970s. Since the early 1970s, per-acre nitrogen use has continued to increase, but at a much slower rate, and per-acre phosphate use has declined slightly. Since 1980, per-acre use of potash has leveled off after initially declining slightly.

A measure of the quantity of pesticide use is provided by real expenditures on pesticides per acre planted as recorded in Table A10 and Figure 9.4, that is, expenditures on pesticides divided by the index of prices paid by farmers for all inputs. Based on this measure, per-acre pesticide use has increased some tenfold since 1950. There was a reduction in pesticide use during the early and mid-1970s (no doubt in response to the

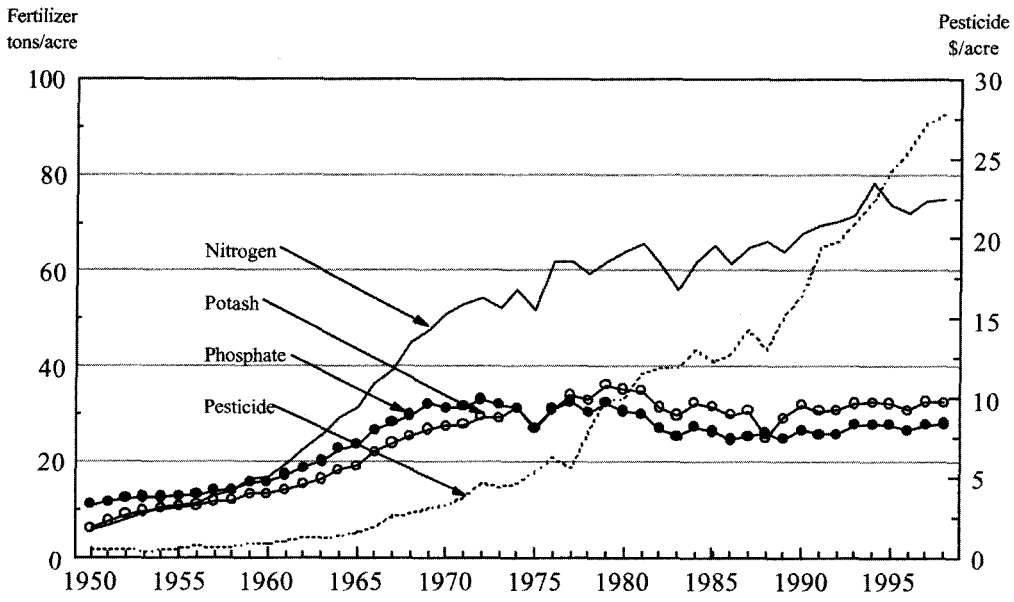

Figure 9.4 Fertilizer and pesticide use per planted acre in the United States, 1950–98.

shortage of and high cost of energy), but this was followed by a steep rise in 1978–79, a leveling off during the 1980s, and a steep rise again beginning in 1990.

Various factors have no doubt been responsible for the change in fertilizer use in recent years including improved fertilizer use recommendations, better fertilizer management practices, and increased concerns about the environmental impacts of chemical use. Increased fertilizer and pesticide use has clearly resulted in substantial crop-yield increases and in lower food costs to consumers. At the same time, however, significant amounts of water pollution have accompanied the increased use of fertilizers and pesticides. Indeed this is an issue that will likely get increased attention from policy makers in the years ahead.

Farm Productivity, Farm Prices, and Farm Size

We are now in a position to complete a story we have been pointing to since chapter 3. This story concerns the relationship between agricultural productivity, prices of farm commodities declining faster in real terms than prices of farm inputs (Chapter 8), reduced profit margins (Chapter 3), and fewer and larger farms (Chapter 3).

Increasing productivity means farmers are able to produce more output with a given bundle of resources. This has strong implications for all of us—not just for farmers. Among other things, it means that the aggregate agricultural supply curve has shifted to the right as farmers have become more efficient. To be sure, the aggregate demand curve has also shifted to the right due to such factors as population growth and rising incomes,

but it has not shifted to the same extent as has the aggregate supply curve. The end result is that equilibrium real prices of agricultural commodities have declined as shown in Chapter 8.

All this seems reasonable. If farmers can produce more efficiently, they should be able to operate successfully with lower per-unit prices since their per-unit costs are also lower. But the fact of the matter is that as agricultural productivity has increased and as real prices of agricultural commodities have fallen, farmers' per-unit profit margins have also fallen (see Chapter 4). This combination of events has forced farmers to increase the number of units (acres, dairy cows, hogs, layers or broilers, etc.) they manage just to generate enough income to maintain the family's standard of living. In other words, farmers who remain in business are forced to farm larger and larger units.

It is instructive to return to the example of fewer and larger dairy farms since 1950 documented in chapter 3 by Figures 3.3 and 3.4. Over the same period, milk production per cow in the United States has increased from an average of about 5,300 pounds per year in 1950 to nearly 17,000 pounds per year in 1997 (see Table A11 and Fig. 9.5). Also, over the same period, there has been a strong downtrend in the ratio of milk prices to wage rates (Fig. 9.5).[1] Quite clearly, dairy farms that stayed in business adopted cost-reducing technology and got bigger. Those that could not manage larger herds, or could not acquire larger herds got out. This, we can be reasonably assured, will continue to happen into the future as technology continues to drive milk prices and profit margins down.

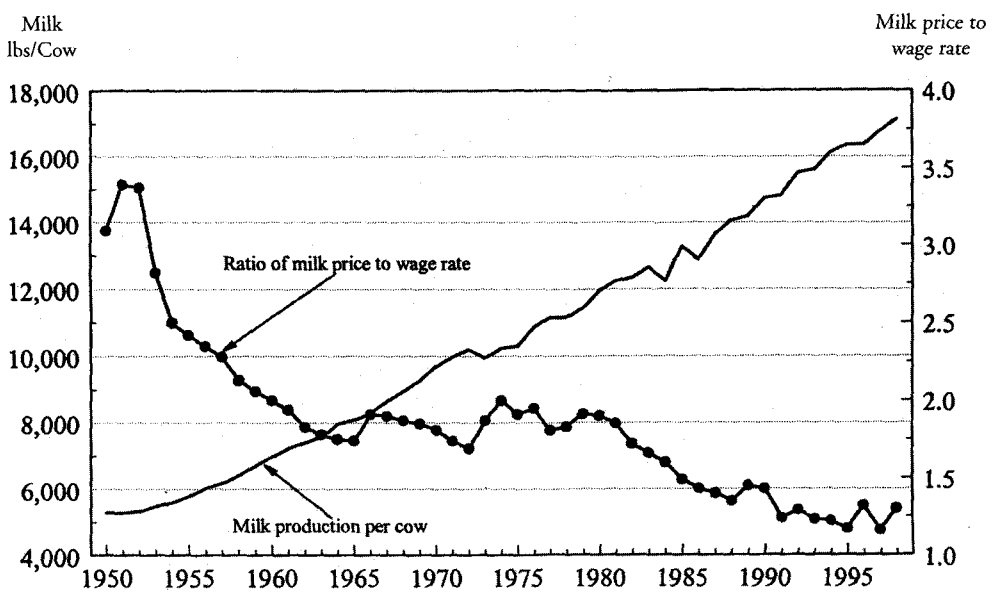

Figure 9.5 Milk production per cow and ratio of milk price to U.S. food manufacturing wage rate, 1950–98.

Adjustments in Farm Input Use

Clearly, farmers do adjust output as output prices change, but there is a limit to their response rate. In the short run, farmers can make enterprise adjustments that affect output given existing capacity. But they produce under conditions of very high fixed costs. Only when output price no longer covers the variable cost of fertilizer, fuel, seed, hired labor, and so on, does it pay to cut output. In the long run, farmers can only expand capacity by buying (or renting) additional land and equipment. Farmers who are not heavily in debt can and do continue to operate for several years even when price is substantially below average total cost. They have little choice. It is difficult to sell land and get out when land prices are extremely depressed. Further, the opportunity cost of a farmer's labor is often quite low, especially in rural areas. Thus, persistence would appear to be primarily the result of high fixed costs. In the short run, farmers will operate at more or less full capacity. In the long run, adjusting capacity is a slow and often painful process.

Tables A11 and A12 provide information with which to judge the extent to which U.S. farmers have made adjustments in input use since 1950. Most of the output-to-input ratios shown in Table A11 exhibit a strong upward trend, indicating increasing productivity of the inputs. Notice, however, that in the case of chemicals and power and machinery, the ratios vary considerably. As we shall see, one reason for this variability is the variability in relative prices of inputs.

Table A12 highlights the actual substitution of inputs in agricultural production from 1950 to 1998 as well as the incentives for this input substitution. As was indicated previously, the land input in agriculture has remained fairly constant since 1950 while labor use has declined. Thus, the steady increase in the ratio of land to labor use since 1950 should not be surprising. It is also well known that chemical and machine use in agriculture increased quite rapidly (at the expense of labor use) through the 1950s, 1960s, and 1970s. Therefore, the increase in the remaining ratios of input usage should not be surprising either. The quite large output-to-chemical-input ratios shown for the 1950s and early 1960s is simply a reflection of the fact that there was relatively little use of herbicides, pesticides, insecticides, and commercial fertilizer during these years.

Substitutions in inputs are in large part influenced by corresponding changes in their prices. If, for example, the ratio of machine prices to wage rates is falling, then machinery prices are rising less rapidly than are labor prices. (Or machinery prices could be falling more rapidly than labor prices, but this is inconsistent with the facts.) This situation encourages farmers to substitute the relatively less-expensive machines for the relatively more-expensive labor—precisely what happened in U.S. agriculture, at least

through the early 1970s. The remaining ratios shown in Table A12 should be interpreted in a similar fashion.

Notice that during the mid-1970s, the 1980s, and the 1990s, different trends became evident in most of the output-input and input-input ratios shown in Table A11. Simultaneously, most of the input price ratios shown in Table A12 followed different trends. Trends in most of the input price ratios flattened out or even began to turn down somewhat. Some fluctuated substantially during the late 1970s and early 1980s, no doubt in response to the oil crises of this period. In response, farmers' substitution of machinery and chemical inputs for labor also slowed down (see Figs. 9.6 and 9.7). Of particular significance is the fact that farmers' substitution of machinery for labor declined decidedly in the 1990s (see Fig. 9.6), and farmers' substitution of chemicals for labor stabilized through the 1980s and 1990s (see Fig. 9.7). The former trend has been accompanied by a period of weak demand for farm machines (Table A10) and a slowdown in the growth in size of farms (see Fig. 3.5). If in the future farmers refuse to buy more and bigger machines, they are not likely to be able to farm larger acreages. Thus, farm sizes could be expected to remain fairly stable if this phenomenon continues.

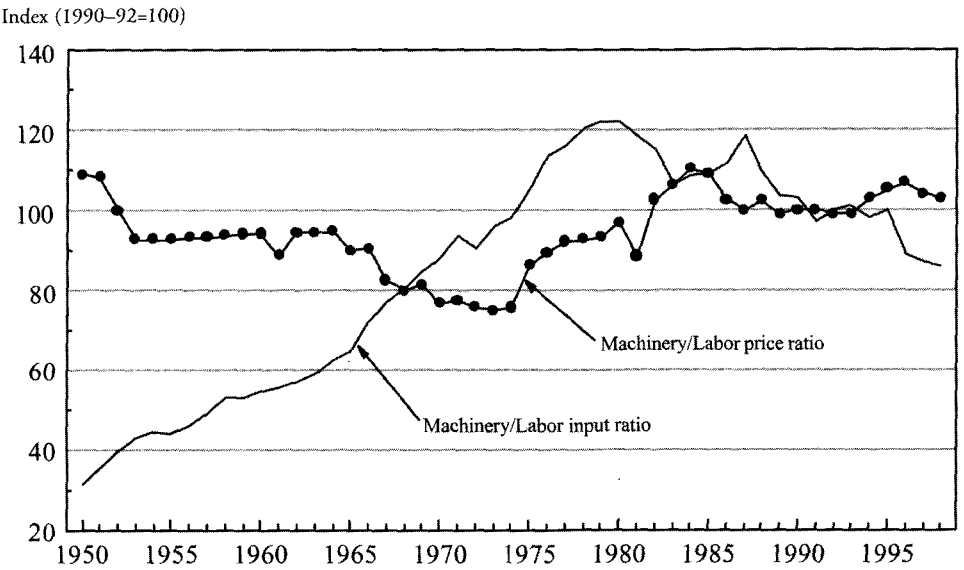

Figure 9.6 Substitution of machinery for labor in U.S. agriculture, 1950–98.

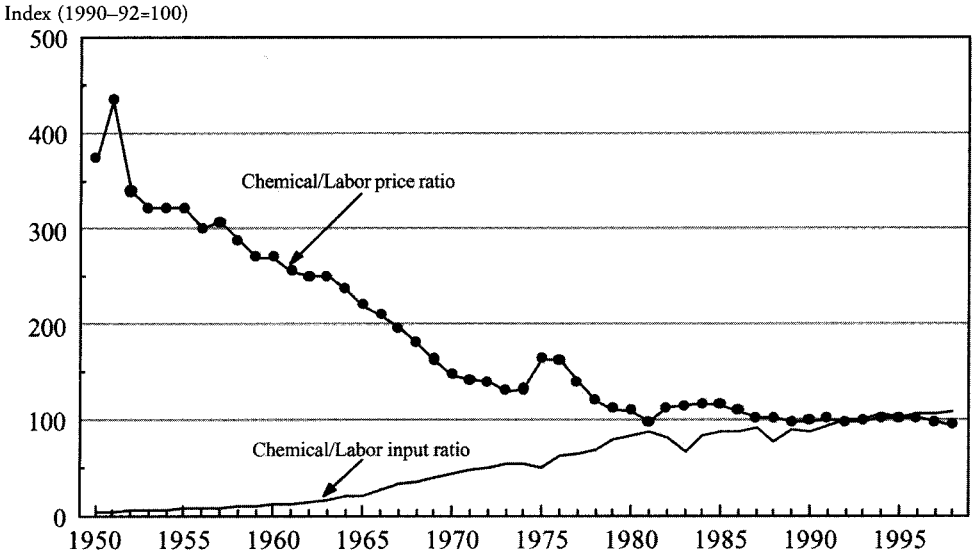

Figure 9.7 Substitution of chemicals for labor in U.S. agriculture, 1950–98.

Note

1. In Figure 9.5 I have used the wage rate ($/hour) of production workers in food manufacturing as representative of the opportunity wage rate for farmers.

10. Agricultural Exports and Imports

Agricultural Exports

Agricultural exports have become a smaller proportion of total U.S. exports over the years since 1950 for the same reasons there has been a decline in the relative importance of agriculture in general to the U.S. economy over this period (see Chapter 2). Nevertheless, exports have historically been of key importance to the U.S. agricultural sector (see Table A13 and Fig. 10.1). U.S. farmers produce far more wheat, feed grains, rice, oilseeds, cotton, and tobacco, for example, than U.S. consumers will take off the market at prices near or above cost of production. It is crucial for these farmers, then, that their production in excess of domestic needs be sold in foreign markets.

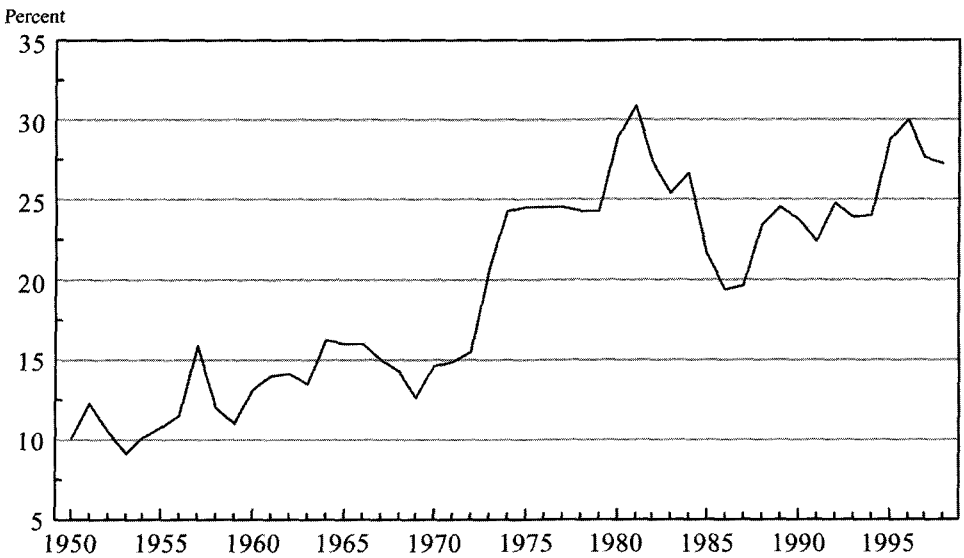

Figure 10.1 Value of exports as a percentage of cash receipts from farming in the United States, 1950–98.

Chapter 10

International trade in agricultural products is a complex topic that cannot be adequately covered in this book. It should be noted, however, that three major factors are at work here: (1) the value of U.S. currency or the U.S. exchange rate, (2) income growth in foreign countries, and (3) the extent to which foreign countries protect their agricultural sector by restricting imports or subsidizing exports.[1] The consequences of the latter two factors are fairly clear. Income growth in foreign countries in general is expected to lead to increased demand for U.S. products. When foreign countries protect their own domestic agricultural sector by restricting imports or subsidizing exports, opportunities for U.S. sales of agricultural commodities abroad is restricted.

The first factor mentioned here is more complex. If the value of the U.S. dollar rises, meaning that it now takes more foreign money to buy one U.S. dollar, then the price of a U.S. commodity to the foreign buyer also rises, choking off foreign demand for this U.S. commodity. At the same time, of course, as the value of the U.S. dollar rises relative to foreign currencies, the demand by U.S. citizens for foreign products will rise leading to increased imports since the U.S. dollar will now go farther than it did before in the purchase of foreign goods.

The value of agricultural exports as a percentage of cash receipts from farm marketings increased from slightly more than 10 percent in 1950 to 15 percent in 1970 and to nearly 30 percent in 1980–81 and again in the mid-1990s (Fig. 10.1). A most significant development of the 1970s was accelerated growth in exports of U.S. agricultural products due, in part, to a devaluation of the U.S. dollar and subsequently permission to allow the U.S. dollar to be openly traded on the world currency markets. Foreign demand for food outstripped foreign supply, making food-importing countries increasingly dependent on the United States as residual supplier. Following 1980 and continuing through the early 1990s, however, there was a relative decline in the value of exports of two of our principal agricultural export commodities—wheat and feed grains (Table A13)—as world prices fell, and, more important, as other regions of the world (most notably the European Economic Community) increased production of these commodities. The export situation improved by the mid-1990s so that agricultural exports as a percentage of cash receipts from farming again climbed back up to the 30 percent level.[2]

The mix of agricultural commodity exports has changed considerably over the years since 1950 (see Table A13 and Fig. 10.2). The value of wheat, feed grain, and oilseed exports at first increased, but over the last twenty or so years declined as a proportion of the total. The value of animal products and fruit and vegetable products has taken up much of the slack. Exports of dairy products (never a significant part of the total) have declined slightly from 1950 levels as more of the world demand for dairy products has been satisfied by countries with a greater comparative advantage for milk production (e.g., New Zealand), and as Japan and countries in the European Union have increased their milk-support prices encouraging increased local production. Cotton and tobacco exports have declined in importance as world demand for these commodities has fallen off.

The United States is the world's dominant exporter of corn (and in general of feed grains) and oilseeds (Table A14). It accounts for about 30 percent of the world's exports

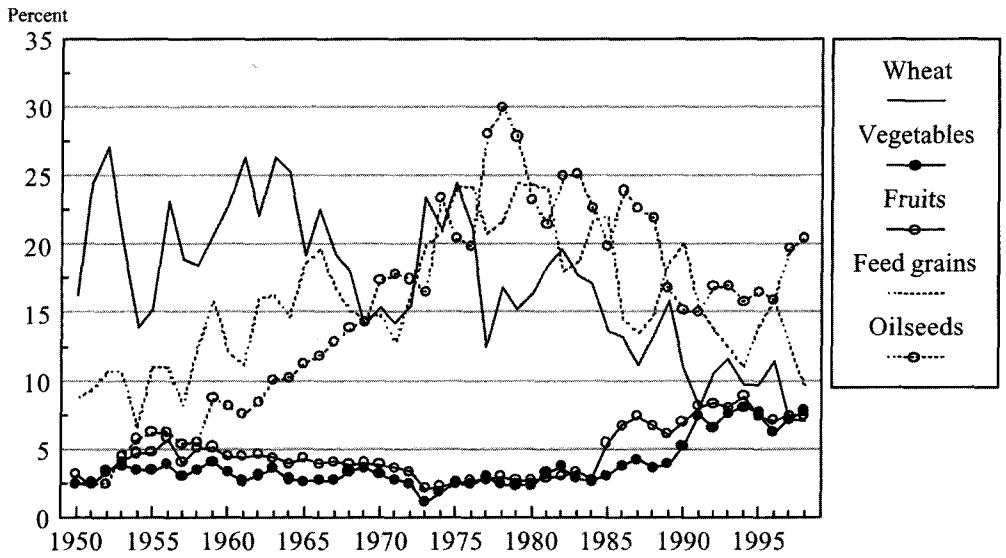

Figure 10.2 Value of exports of selected commodities as a percentage of total value of agricultural exports, 1950–98.

of wheat and 60 to 70 percent of the world's exports of soybeans. The United States also accounts for a significant portion of the world's exports of rice and cotton.

Table A15 provides more detailed evidence of the importance of agricultural exports to U.S. producers for each of the various commodities. Here we see that exports are vitally important to U.S. wheat, sorghum, rice, cotton, corn, peanut, and tobacco producers, and, to a lesser extent, U.S. livestock producers. The rapid rise in the importance of broiler and turkey exports during the 1990s, however, is particularly noteworthy.

The data in Table A16 and Figure 10.3 show the trends in distribution of agricultural exports to various countries or regions of the world. The largest markets for U.S. agricultural exports are Japan, Western Europe, Hong Kong, Korea, Taiwan, Latin America, and Canada, in that order. Table A16 and Figure 10.3 point out that agricultural exports to Japan have been relatively stagnant during the 1990s (and indeed, since 1985), and agricultural exports to Western Europe have diminished significantly and steadily since 1950. The growth markets in recent decades have been Mexico, Southeast Asia, Hong Kong, Korea, and Taiwan. U.S. agricultural exports to Mainland China were first recorded in 1973. U.S. agricultural exports to mainland China reached a high of 5 percent of total U.S. agricultural exports in 1981. Since 1981, exports to China have varied within the 1 to 4 percent range reaching another peak of 4.5 percent in 1995 and dropping to 2.8 percent in 1998.

Agricultural Imports

Imports of agricultural products as a percentage of total U.S. imports have declined even more sharply than have exports of U.S. agricultural products as a percentage of total U.S.

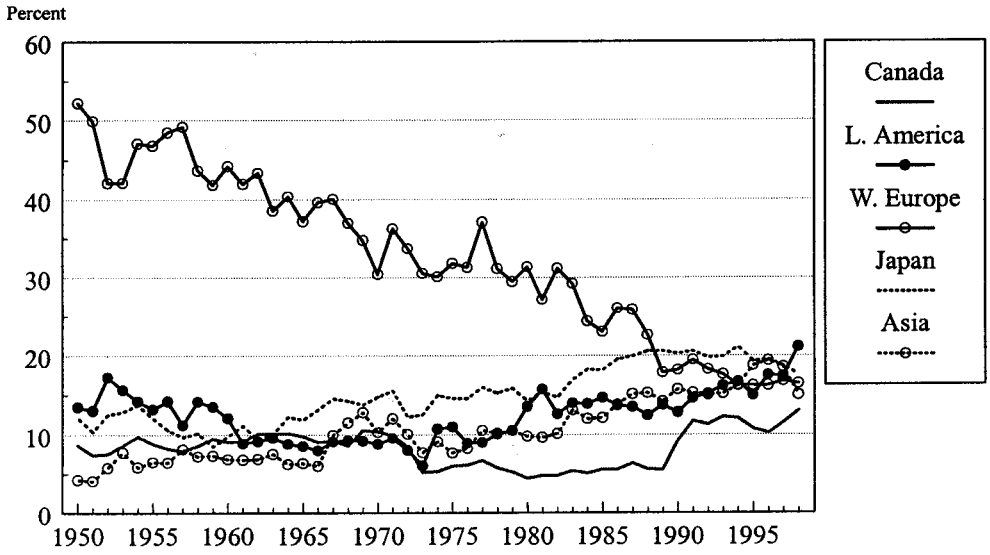

Figure 10.3 Percentage of U.S. agricultural exports to selected countries or regions, 1950–98.

exports—from 45 percent in 1950 to just over 4 percent in 1998 (Table A13). Consequently, the agricultural trade balance became positive by 1960 and has become increasingly positive ever since. The mix of agricultural imports has also changed considerably since 1950. A larger proportion of the value of our agricultural imports now consists of animal products, vegetables and vegetable products, and fruits and fruit products. Coffee, sugar, and complements now constitute a much smaller proportion of total agricultural imports. Dairy-product imports have increased slightly as a proportion of the total, but dairy-product imports are severely restricted by tight import controls. As in the case of dairy-product exports, dairy-product imports have never been a significant part of the total.

Notes

1. See, for example, M. C. Hallberg, *Policy for American Agriculture: Choices and Consequences* (Ames: Iowa State University Press, 1992), Chapter 9.

2. It is interesting to note that the value of agricultural exports as a percentage of cash receipts from farming was nearly this high at the end of World War I but declined steadily to a low of 4 percent at the beginning of World War II.

11. Total and Government Stocks of Agricultural Commodities

Reserve stocks of commodities are held for a variety of purposes. First, some minimum level of stocks is necessary to keep the "pipelines" full. That is, even if production throughout the year were continuous and smooth, the product would take time to move through the marketing system from farms to grain merchants and to processors. Thus, grain merchants and processors need to have ready access to some reserve supply in order to meet day-to-day variations in demand. But production of agricultural commodities is not continuous and smooth throughout the year. Hence, producers and others have the opportunity to speculate by storing corn at harvesttime with the hope that when the corn is finally sold, they will receive a price higher than the sum of price at harvest plus storage costs. Thus, there is a "speculative" demand for commodity storage in addition to the demand associated with keeping the "pipelines" full.

In agriculture, stocks accumulate for two additional reasons. The first reason is food security. Should a production shortfall occur as happened in 1988 and 1995, it would be desirable in most people's eyes to have a sizable reserve out of which to draw when current production is exhausted. The disastrous effects of not having a reserve supply are obvious when one considers the plight of the people of the Sahel in Africa or in North Korea during short production years. But neither are droughts rare events in the United States. The feed grain and soybean producing areas of the country suffered severe droughts in 1974, 1980, 1983, 1988, 1993, and 1995. The wheat and cotton producing regions of the country also experienced severe droughts in 1953, 1959, 1974, 1986, 1989, and 1991. (In the fall of 1974, early frosts further damaged the feed grain and soybean crops!)

A second reason for the accumulation of agricultural stocks is that when farmers produce more than the market will absorb, the federal government in the United States (and in most other developed countries as well) stands ready to purchase the "surplus" production and place in warehouses what is not donated or sold at reduced prices to the needy at home or abroad. If the federal government complicates matters by instituting support prices so high as to encourage "surplus" production, the necessity of purchasing "surpluses" and placing them in storage might then be the end result rather than the principal aim of government policy. By "surplus" production here, we mean production in excess of demand at prices artificially held above equilibrium levels by government policy.

Without government price-support policy, there can be no "surpluses" because (presumably) there is some positive price at which the market will always clear.

The holding of reserve stocks by the private sector and at times by the government sector, then, is important for the smooth functioning of the various agricultural sectors. All of us, farmers and nonfarmers alike, have an interest in seeing that reserve stocks are adequate but not excessive.

Table A17 and Figure 11.1 provide data on aggregate year-end stocks of the principal agricultural commodities and on year-end stocks of the Commodity Credit Corporation (CCC). In the 1950s and 1960s, we clearly had a "surplus" of agricultural commodities, encouraged in large part by high price supports for these commodities. The 1970s and early 1980s may be described as periods of shortages as world demand increased and exports approached record levels. Commodity Credit Corporation stocks were minimal or nonexistent and, in fact, aggregate stocks probably were approaching minimum "pipeline" levels during this period. By the middle 1980s, however, stocks had again reached burdensome levels. The high year-end stocks of 1985–86 for feed grains and wheat were, though, a welcome sight to consumers given the severe drought conditions of 1988.

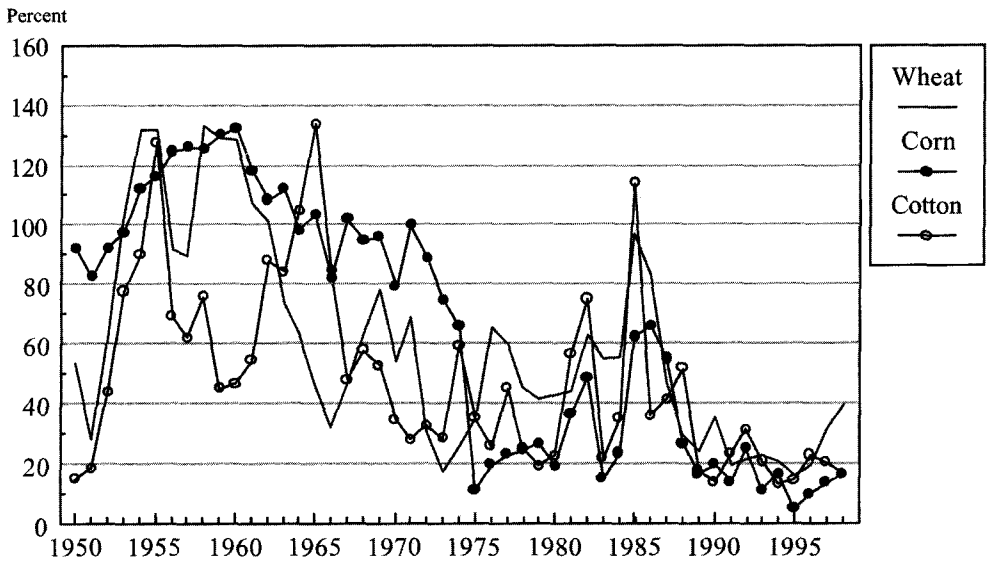

Figure 11.1 Ending total stocks as a percentage of total use for selected agricultural commodities in the United States, 1950–98.

12. Government Support for Farmers

Support Prices, Target Prices, and Loan Rates

Support prices, target prices, and loan rates as a percentage of market prices since 1950 for wheat and corn are shown in Figures 12.1 and 12.2, and for all commodities in Table A18. Prices of the program crops were supported with nonrecourse loans and direct government purchases through 1962. Beginning in 1963 and continuing into the early 1970s, the major focus of policy for the program crops was on establishing the loan rate at or near world prices, offering direct price support payments, and controlling supply with a cropland diversion program. Support prices buttressed with government purchase programs were in effect for the major crops until 1973, for milk throughout the entire 1950–98 period, and for wool through 1995. In 1997, target prices for the food grains, feed grains, and cotton were replaced with annual transition payments (see the discussion below on the FAIR Act).

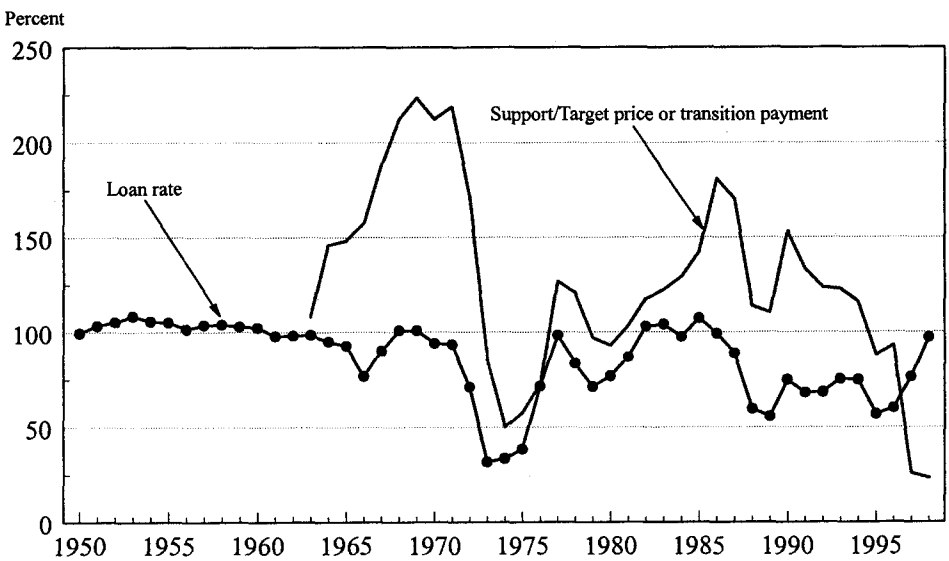

Figure 12.1 Wheat support price, target price or transition payment, and loan rate as a percentage of market price for wheat in the United States, 1950–98.

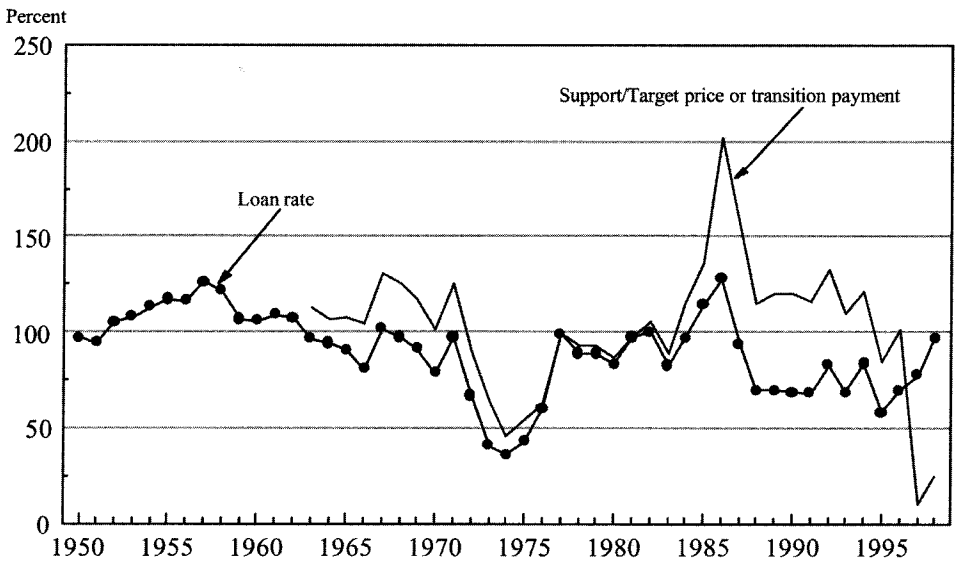

Figure 12.2 Corn support price, target price, or transition payment, and loan rate as a percentage of market price for corn in the United States, 1950–98.

In 1973, support prices for the major crops were replaced with target prices in an effort to shift from a system of supporting farm incomes through commodity prices to a system of direct income support with deficiency payments. Prior to 1963, market prices and support prices differed little since the government programs then in place directly influenced market prices. The exceptions were prices for those commodities in short supply—sorghum through the early 1970s and wool continuously since 1950.

Target prices instituted for the major crops in 1973 were deliberately set by policy at a level above market prices. During the period of high export demand, there was little need for farm income support via high target prices and high loan rates because market prices were sufficiently high to yield "acceptable" farm incomes. Thus, market prices and target prices were quite close, especially for wheat and sorghum, except for the late 1960s and early 1970s when global demand was high. But by 1982–83, market and target prices began to diverge substantially for wheat, corn, cotton, barley, and rice as global demand subsided somewhat and market prices fell accordingly. The divergence between market prices and target prices continued through 1993–94 for most of these crops.

Commodity Credit Corporation (CCC) loan rates were also generally close to market prices prior to 1973 except for commodities in short supply, such as sorghum. Since target prices were introduced in 1973, loan rates generally have been kept low (at or below market prices) so as not to distort world prices of the supported crops. Rice, corn, and honey constituted major exceptions to this rule during the 1985–87 period.

Sugar policy in the United States is and has been a rather complex story that is best left to other reports.[1] Suffice it to say that U.S. sugar policy since 1950 has caused domestic wholesale prices of sugar to be well above world prices of sugar—five times

greater in 1985, and more generally 1.5 to 2.5 times greater throughout much of the period (Fig. 12.3). This result has been accomplished with high producer price supports, domestic producer quotas, and import quotas allocated by the United States to the sugar-producing nations.

Cropland Idled

A variety of supply management tools has been implemented over the years in an effort to prevent price-depressing crop surpluses and thus help maintain farm incomes without incurring the huge federal costs associated with government purchase and storage programs. Up until 1996, these programs resulted in the idling of a number of crop acreages at various times—10 to 15 percent of the total cropland through the 1960s and early 1970s, and over 20 percent in 1983 (Fig. 12.4 and Table A19). Obviously, the percentage has varied with variations in U.S. production relative to world demand.

Support Policy under the FAIR Act

The Federal Agriculture Improvement and Reform Act (FAIR Act) was signed into law in early 1996. This legislation changed the direction of policy for agriculture in a significant way—it promises a more market-oriented approach to policy for agriculture. The FAIR Act retained nonrecourse loans for wheat, feed grains, oilseeds, cotton, and rice. However, the FAIR Act eliminated target prices, deficiency payments, underplanting provisions, and acreage-reduction provisions contained in previous legislation. Thus, idling of cropland was terminated in 1966. The FAIR Act also introduced a new support

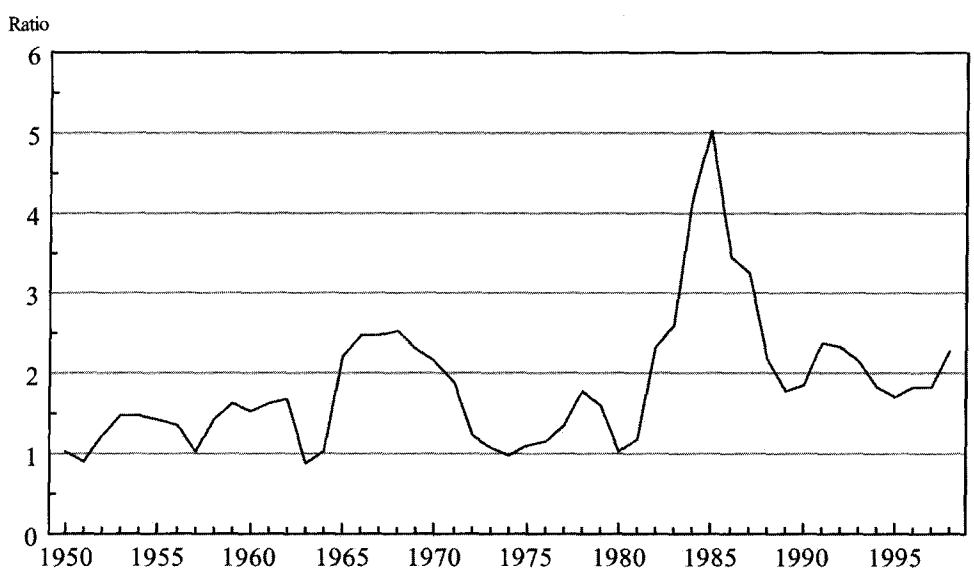

Figure 12.3 Wholesale price of sugar in New York relative to world price of sugar, 1950–98.

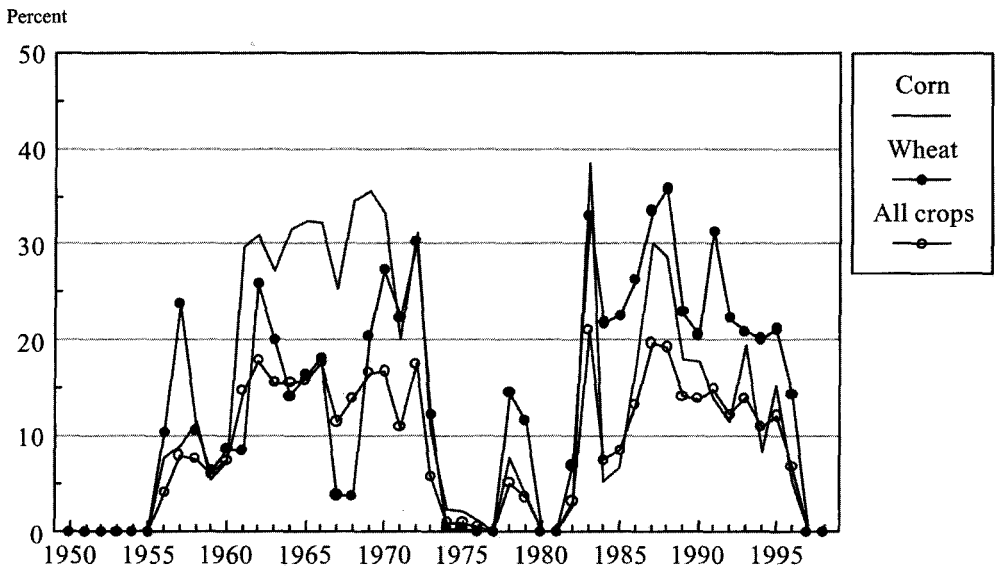

Figure 12.4 Acres of cropland idled as a percentage of total cropland for wheat, corn, and all crops in the United States, 1950–98.

mechanism for wheat, feed grains, oilseeds, cotton, and rice—production flexibility contracts that provide annual transition payments to producers. These annual transition payments are to be ratcheted downward according to a specified total spending limit for each fiscal year through 2002.[2]

The FAIR Act provides several other features, including replacement of the milk price support program with a recourse loan program for processors beginning in 2000. It seems clear, though, that the structure of direct payments to farmers will in the future be changed dramatically and will be reduced—presumably to zero—following 2002 although that will depend on legislation Congress passes when the FAIR Act expires.

Direct Payments to Farmers

Direct payments to farmers include deficiency payments made in cash, cash or in-kind payments made to farmers for reducing or diverting cropland acres, annual transition payments, disaster payments, and miscellaneous payments such as wool price-support (incentive) payments and dairy diversion and buyout payments. Excluded are the monetary benefits farmers receive from the nonrecourse loan program of the Commodity Credit Corporation. Aggregate direct payments to farmers as a percentage of cash receipts from farming are shown in Table A20 and Figure 12.5. It will be observed that over the years of support for idling cropland, there was a fairly strong, positive correlation between the size of direct payments to farmers (Fig. 12.5) and the percentage of cropland idled (Fig. 12.4). Farmers must be provided incentives by Congress in the form of direct payments to be encouraged to idle cropland.

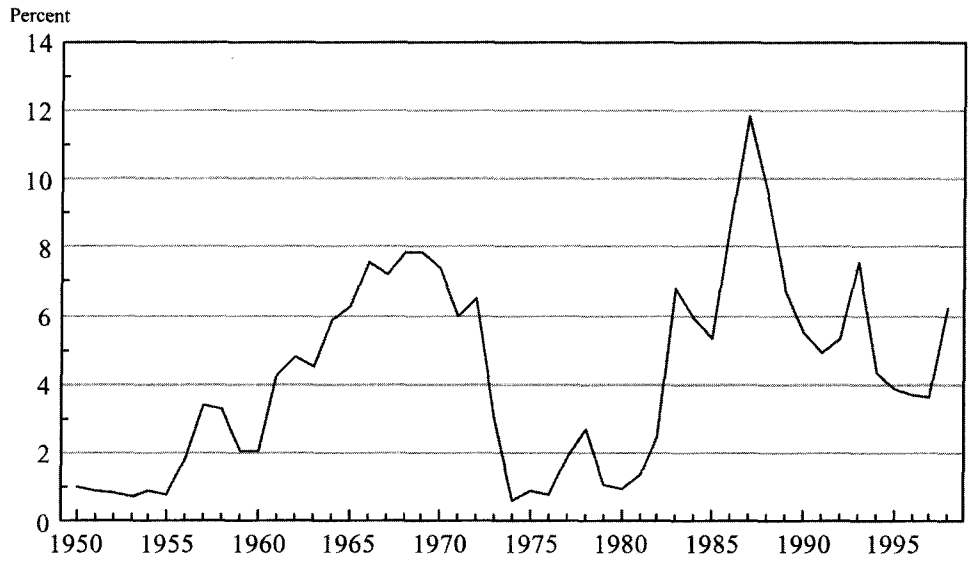

Figure 12.5 Total direct payments to farmers as a percentage of cash receipts from farming, 1950–98.

Table A20 shows the distribution of direct payments to farmers by sales category. These data suggest that the distribution of direct government payments to farmers is far from even across different farm sizes when farm size is measured by annual gross sales. Further, the distribution appears to have grown progressively more uneven over the last three or so decades. In 1960, the bulk of direct government payments was distributed to the smaller farms. In 1998, on the other hand, nearly 62 percent of the direct payments went to those farms with annual gross sales of $100,000 or more, whereas only 27 percent of the payments went to those farms with annual gross sales of $49,999 or less.

This seemingly unequal distribution of payments has been accompanied by much criticism of farm policy. It is not clear, however, that all this criticism is informed. First, comparing the distribution of payments among farm sizes as measured by annual gross sales and over time is hazardous at best, as we saw in examining the distribution of farms by sales category. The difficulty here is that the sales categories are not measured in constant values. Second, the skewed distribution of direct government payments toward the larger producers (as measured by annual gross sales) is hardly surprising, since payment rates are based on volume produced. This point can be clearly observed by the apparent high positive correlation between the distribution of government payments shown in Table A20 and the distribution of gross farm income by sales category shown in Table A2.

A more appropriate assessment of the equality or inequality of direct payment distribution can be made from an examination of the distribution of government payments per farm as a percentage of gross income (sales) per farm. This distribution, shown in the lower half of Table A20, gives a more realistic picture of the correlation between direct payments and the earning capacity of the farm. Clearly, some inequality still exists, but

this comparison suggests that the inequality is not as severe as many perceive it to be.

Those who see too much inequity in the large government payments made to operators of medium-sized to large farms have argued for unconditional limits on the size of government payments on the basis that such farm operators have little need for income support over some minimum level. Accordingly, payment limits of $55,000 were introduced in 1970; $20,000 for wheat, feed grains, and cotton combined in 1973; $55,000 for rice in 1975; $52,250 for rice in 1978; $50,000 for rice in 1979; $40,000 for wheat, feed grains, and cotton in 1978; $45,000 for wheat, feed grains, and cotton in 1979; and $50,000 for all commodities since 1980. In addition, 1981 and 1985 legislation called for disaster payment limits of $100,000. Currently, payments are limited to a maximum of $250,000 to any one person in any one year for the aggregate of payments over all payment categories.

Those who argue for no payment limits or very high payment limits counter that since about 80 percent of the output by value is produced by the largest 16 percent of the producers (as was the case in 1998, Table A2), payment limits will not encourage those farmers who produce most of the output to participate in current government programs.

Notes

1. See, for example, Ron Lord, "Sugar: Background for 1995 Farm Legislation," U.S. Department of Agriculture, Economic Research Service, Agricultural Economic Report no. 711, April 1995.

2. For a fuller account of the provisions of the FAIR Act see M. C. Hallberg, "1996 Food and Agriculture Legislation: New Wine in New Bottles?" *Farm Economics*, May/June 1996, Pennsylvania State University, Cooperative Extension.

13. Agricultural Cooperatives

Agricultural cooperatives have historically been among the more important institutions available to assist farmers in marketing their produce and in obtaining their farm inputs. Cooperatives provide farmers a ready market for farm produce and/or a ready source of supply of needed farm inputs. More important, agricultural cooperatives provide farmers with a marketing institution that enables them to cope with the superior market power of buyers of farm produce and sellers of farm inputs.

Table A24 and Figures 13.1–13.3 reveal some interesting trends in numbers, membership, and share of business of marketing and supply cooperatives in the United States since 1950.[1] The data shown also point to the general importance of cooperatives to farm operators. The number of cooperatives has declined significantly over the years as a result of cooperative mergers and growth. In fact, the number of cooperatives per 1,000 farms and the number of cooperative memberships per farm reached a peak in the mid-1970s and then started a downward trend. There were several cooperative consolidations and a few cooperative failures following the mid-1970s, some of the latter due to managerial difficulties more than to economic stress. It is also clear that some farmers chose not to remain as cooperative members when financial pressures of the 1980s intensified. Nevertheless, as Figure 13.1 shows, the number of marketing cooperatives per 1,000 farms is still near one and the number of supply cooperatives per 1,000 farms is larger today than in 1950.

Figure 13.2 suggests that on average each farmer still belongs to at least one marketing and one service cooperative. Figure 13.3 shows that marketing and service cooperatives account for about 30 to 40 percent of farm marketings and farm input supplies. More important, cooperatives' share of farm marketings and input supply has been increasing even in the face of declining numbers of cooperatives. Clearly, while agricultural cooperatives have been subject to many of the same economic pressures facing other business firms, cooperatives are still important entities serving farm people. On the whole, they appear to be well structured to continue serving farmers in the twenty-first century.

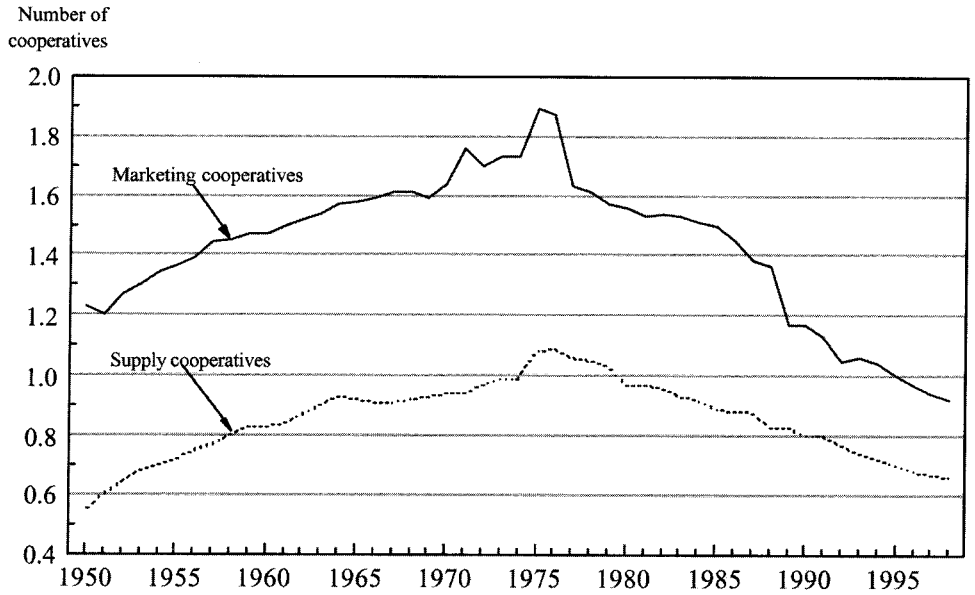

Figure 13.1 Number of agricultural cooperatives per 1,000 farms in the United States, 1950–98.

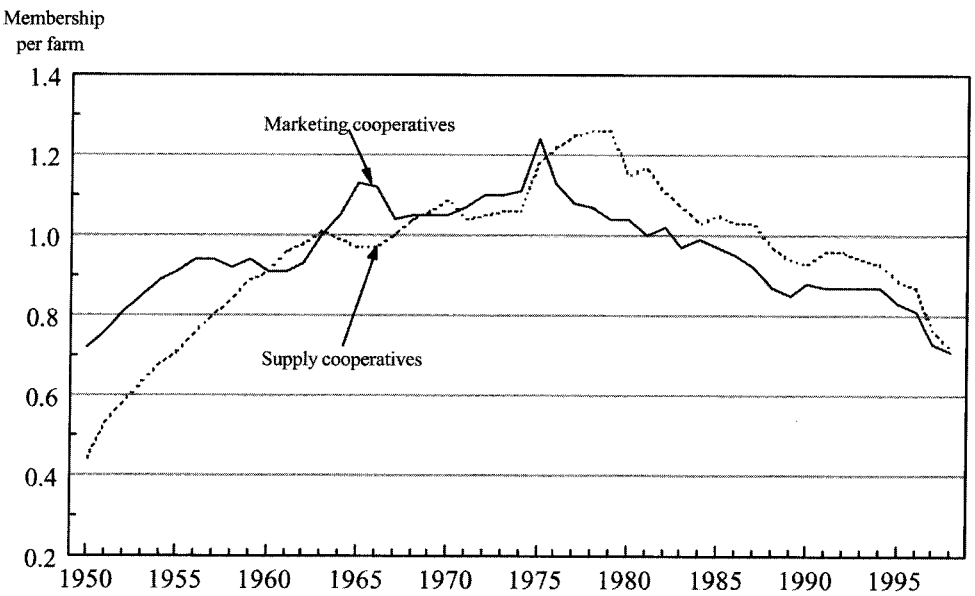

Figure 13.2 Agricultural cooperative membership per farm in the United States, 1950–98.

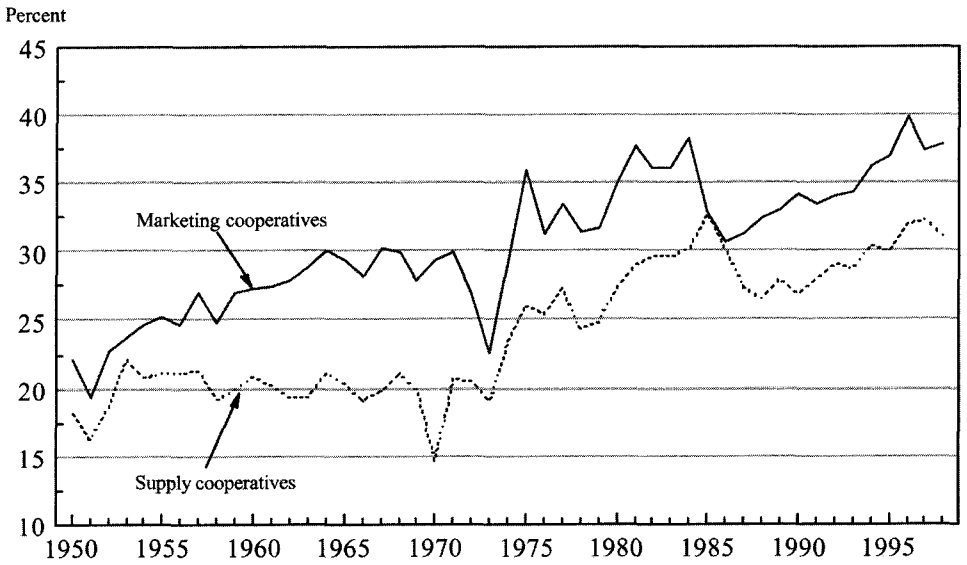

Figure 13.3 Market share of agricultural cooperatives in the United States, 1950–98.

Note

1. These data are from U.S. Department of Agriculture, *Farmer Cooperative Statistics, 1995*, Rural Business-Cooperative Service, Report 52; previous annual reports of Agricultural Cooperative Service, USDA, and U.S. Department of Agriculture. *Cooperative Historical Statistics*, Agricultural Cooperative Service, Cooperative Information Report 1, October 1987. Marketing cooperatives' share is measured as annual sales as a percentage of cash receipts from farm marketings. Supply cooperatives' share is measured as annual sales as a percentage of all purchased farm inputs except labor, contract machine hire, and repair of farm machinery and buildings.

14. Domestic Consumption of Food Products and Food Marketing Costs

Consumer Behavior

Consumption of food products is of obvious importance to American farmers and is an important driving force for change in agriculture as farmers strive to produce commodities more consistent with consumer wants. Thus, a consideration of trends in consumption of food products is critical to a thorough analysis of the U.S. agriculture and food system. Of particular importance is the change in consumer characteristics and consumption patterns over the years.

The proportion of personal consumption expenditures spent on food has declined continuously over the 1950–98 period (Table A21). American consumers spend an estimated 8 to 9 percent of their private consumption expenditure on food—the lowest of any country in the world![1] An even more striking trend is the proportion of food expenditures spent on food away from home—in restaurants, fast-food places, and food service centers. The latter has trended continuously upward over the forty-eight-year period, but the steepest rise has occurred since 1974 (Fig. 14.1).

Per capita consumption of selected food products is shown in Table A21 and Figures 14.2 through 14.5. Changes in per capita consumption over time are due to several factors including changing product prices, changing income levels of consumers, changing age distribution of the population, and changing consumer tastes and preferences. Real per capita disposable income has more than doubled over the 1950–98 period (Table A22). Although the income elasticity for food is very low (perhaps as low as 0.2),[2] increasing income levels will lead to some increased consumption. Similarly, although price elasticities for food are very low, declining real prices for food will also lead to some increased consumption. Offsetting factors have been at work here, however. In recent years, for example, U.S. consumers have been increasingly concerned about cholesterol levels, which has led to a reduction in per capita consumption of animal products in particular. The changing age distribution of our population (especially the aging of the population) that we have witnessed in the last thirty years or so (see Fig. 14.6), the increase in single-parent families (Fig. 14.7), and the increase in the number of two-wage-earner families (Fig. 14.7) have all had a marked effect on aggregate per capita consumption of various food products. All of these factors must be considered when assessing trends in per capita food consumption.

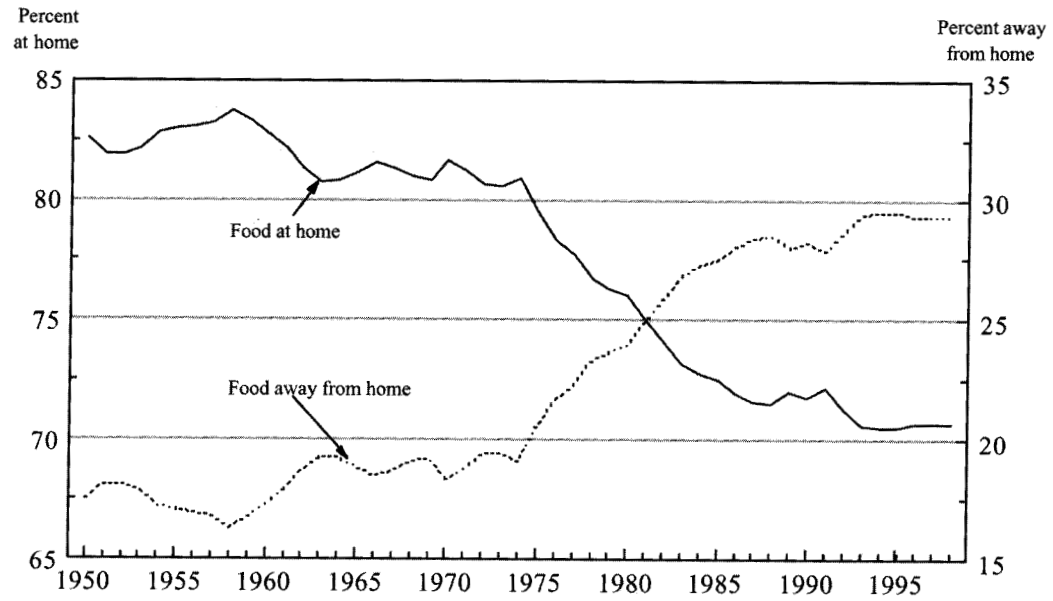

Figure 14.1 Consumer expenditures for food at home and away from home as a percentage of personal consumption expenditures on food in the United States, 1950–98.

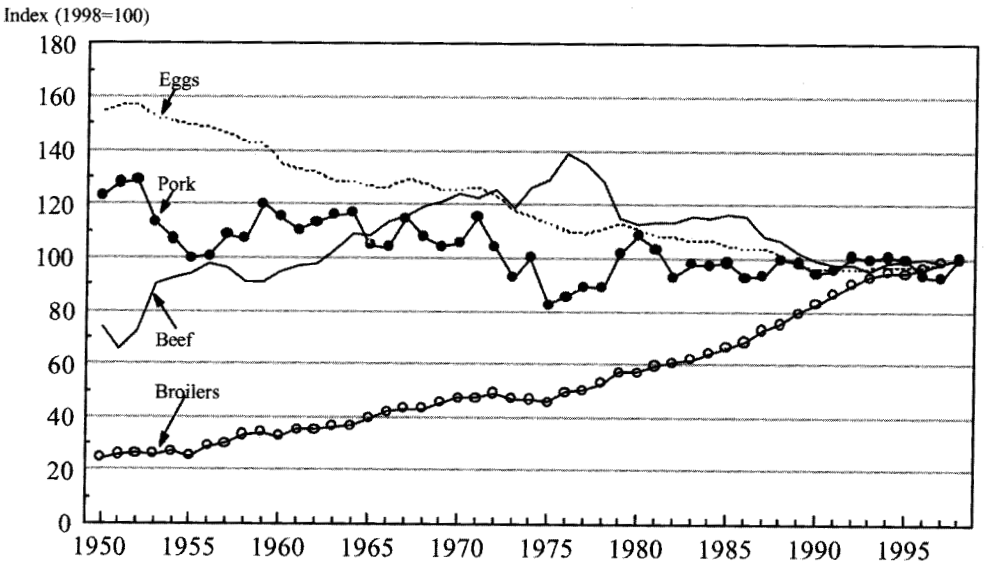

Figure 14.2 Index of per capita consumption of selected animal and poultry products in the United States, 1950–98.

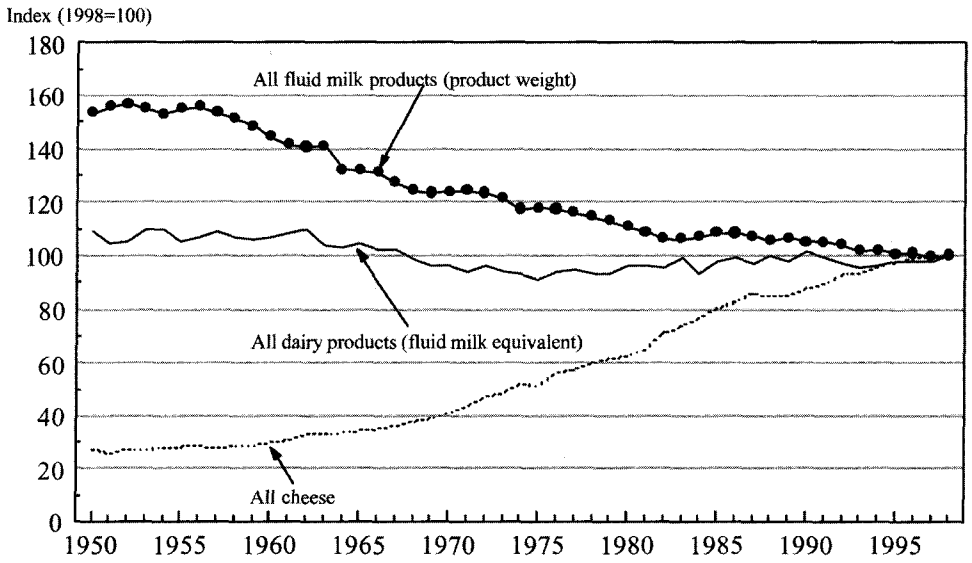

Figure 14.3 Index of per capita consumption of selected dairy products in the United States, 1950–98.

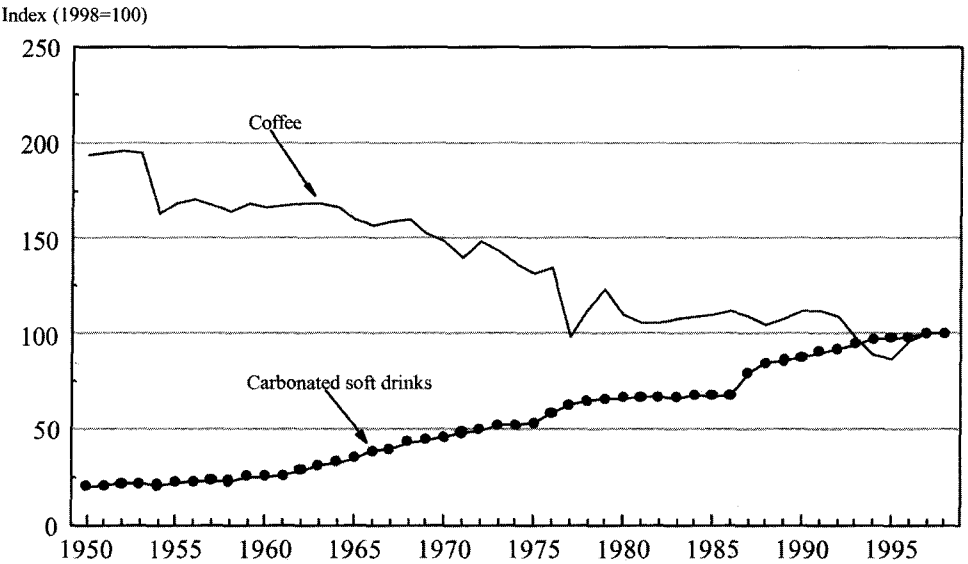

Figure 14.4 Index of per capita consumption of coffee and carbonated soft drinks in the United States, 1950–98.

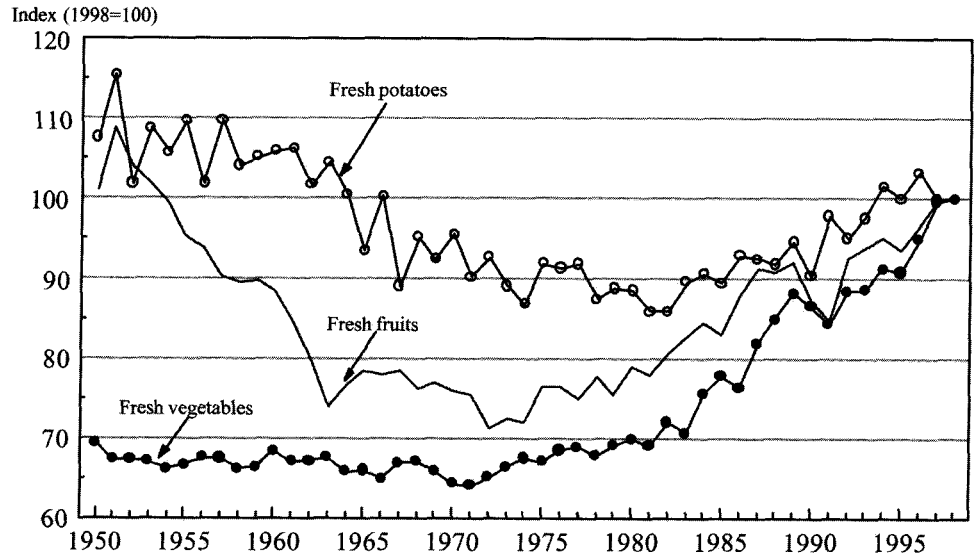

Figure 14.5 Index of per capita consumption of fresh fruits, fresh potatoes, and fresh vegetables in the United States, 1950–98.

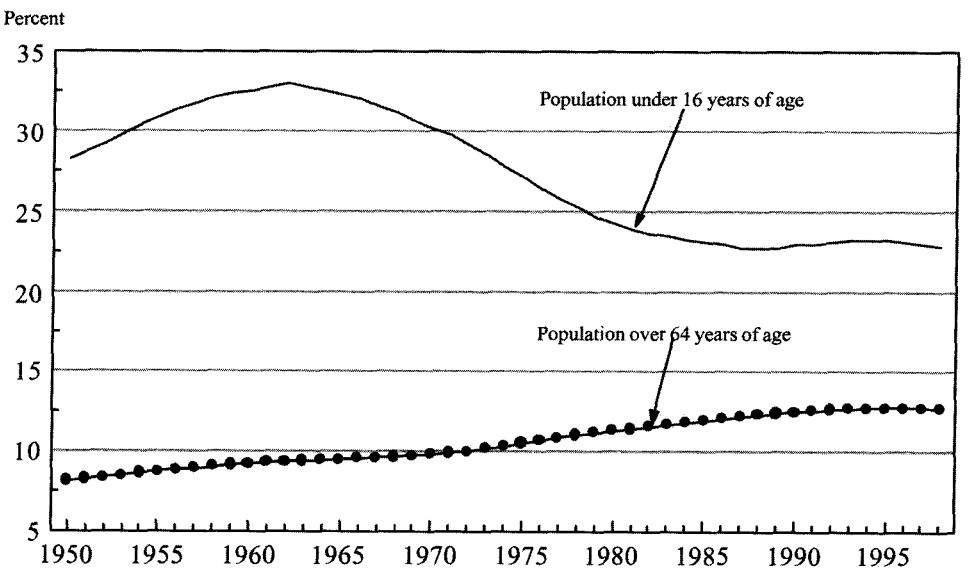

Figure 14.6 Age distribution of the population in the United States, 1950–98.

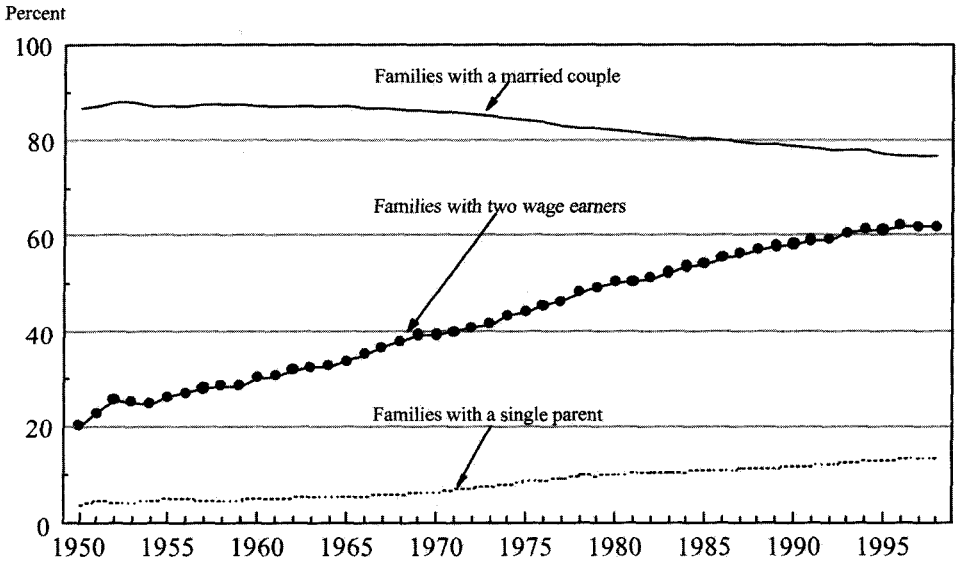

Figure 14.7 Composition of families in the United States, 1950–98.

Per capita consumption of animal products in total declined significantly through the 1970s, then leveled off or increased slightly (Fig. 14.2). Per capita beef consumption increased until the mid-1970s, then declined. Per capita consumption of poultry meat, particularly turkey meat, has increased markedly throughout the period. Per capita consumption of all dairy products declined through the 1970s, but increased slightly during the 1980s (Fig. 14.3). Per capita consumption of fluid-milk products has declined continuously from 1950 to 1998. The continuous increase in per capita cheese consumption over the 1950–98 period has been the one bright spot for the U.S. dairy industry. It is interesting to note that while fluid milk and coffee consumption have declined continuously over the 1950–98 period, per capita soft drink consumption has increased continuously over most of this period (Figs. 14.3 and 14.4). Per capita fresh fruit consumption declined steeply through the 1960s, then began a steady increase from 1975 on (Fig. 14.5). Per capita consumption of fresh vegetables (excluding potatoes) has since 1970 followed the same general trend as has per capita consumption of fresh fruit (Fig. 14.5). From 1950 to 1970, however, per capita consumption of fresh vegetables was relatively constant. Per capita consumption of fresh potatoes trended downward between 1950 and 1980 and then began to increase. Clearly, consumers became convinced that modest levels of potato consumption were not unhealthy as may once have been the prevailing view.

Food Marketing Costs

Middlemen are often criticized for contributing to the plight of farmers when economic conditions in agriculture are not favorable to farmers. The implication is that middlemen extract an excessive part of the consumer's food dollar in profits and/or processing inefficiencies resulting in lower consumption of food and therefore farm commodities than would otherwise be the case. Farmers' share of the consumer's food dollar is certainly low and has declined steadily (Fig. 14.8) in every major food-product category except processed fruits and vegetables over the 1950–98 period (Table A23). This decline, for the most part, underscores the fact that consumers are demanding, and processors and retailers are supplying, more and more services in the form of more convenient packaging and other services. In large part, this can be attributed to the fact that Americans have increasingly had less time (or have increasingly wished to take less time) to prepare food in the home, so they are interested in purchasing as many additional services as possible along with the basic food product.

The components of the food marketing bill have changed very little over the 1950–98 period (Table A23 and Fig. 14.9). Labor is by far the most significant component of this bill, followed at some distance by packaging and transportation.[3] Profits of food processors and merchants are often a subject for concern. The data charted in Figure 14.9 suggest that profits are not an excessive portion of the total marketing bill, and even appear to have been declining slightly in recent years.

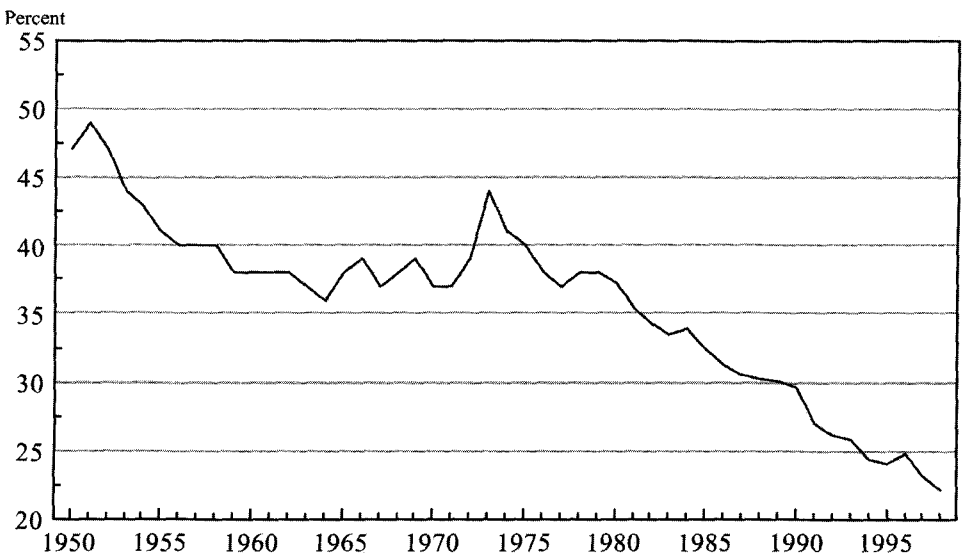

Figure 14.8 Farmers' share of the retail value of the market basket of food products in the United States, 1950–98.

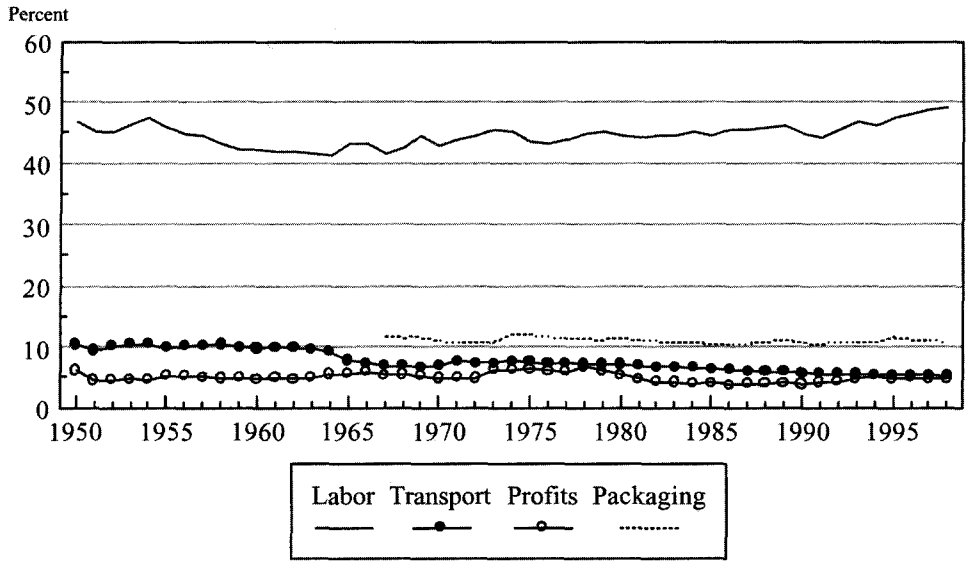

Figure 14.9 Components of the marketing bill for food products as a percentage of the total food marketing bill in the United States, 1950–98.

Notes

1. This estimate excludes alcoholic beverages. See Judith Jones Putnam and Jane E. Allshouse, *Food Consumption, Prices, and Expenditures, 1970–97*, U.S. Department of Agriculture, Economic Research Service, Statistical Bulletin Number 965, April 1999.

2. M. C. Hallberg, *Policy for American Agriculture: Choices and Consequences* (Ames: Iowa State University Press, 1992), 73.

3. Data on transportation are not available prior to 1967.

15. Food-Processing, Wholesaling, and Retailing Industries

As we saw in Chapter 10, a significant portion of U.S. agricultural production is exported to foreign countries. The majority of this production, however, is consumed domestically. Much of this production is first processed into final goods that consumers (at home and abroad) are willing to purchase. Farmers market a small amount of commodities they produce direct to consumers, but the vast majority are sold to food packers or processors. Food wholesalers buy from food packers or processors and distribute to retail food stores and to eating and drinking places or other food service centers. Thus, a final area that merits our attention concerns trends in the food-processing, food-wholesaling, and food-retailing industries.

Numbers, Size, and Productivity

Information relating to trends in the food-processing, farm-input manufacturing, wholesaling, and retailing industries is found in Tables A25 through A27 and Figures 15.1–15.5. In general, we see that firms in the food-processing industries are getting fewer in number (Fig. 15.1) and larger in size as measured by real value added per establishment (Fig. 15.2). In most cases, also, productivity of these firms as measured by real value added per worker has increased substantially since 1954, although in the meat-processing industry productivity growth appears to have been fairly sluggish since 1967 (Table A25).

On the basis of value added by manufacture, the seven food-processing industries rank as follows: beverages, preserved fruits and vegetables, meat packing, bakery, dairy, sugar, and fats and oils. This same ranking has persisted since 1967, and there has been no major change in the relative contribution of each industry during that period. In 1954, on the other hand, dairy topped the list followed by beverages. Bakery and meat packing were nearly tied for third place in 1954.

The number of establishments in the farm machinery and equipment industry and the agricultural-chemical industry has remained quite stable over the 1954–92 period (Table A26). Establishments in the farm machinery and equipment industry have remained about the same size or declined slightly as judged by real value added per establishment. Establishments in the agricultural-chemical industry, on the other hand, have

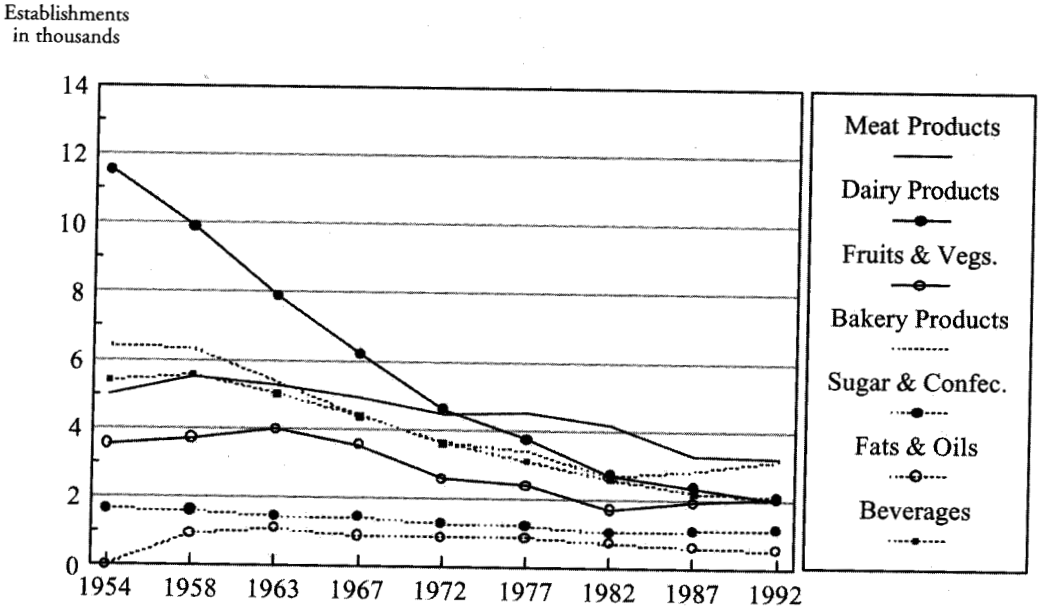

Figure 15.1 Number of establishments in U.S. food-processing industries, 1954–92.

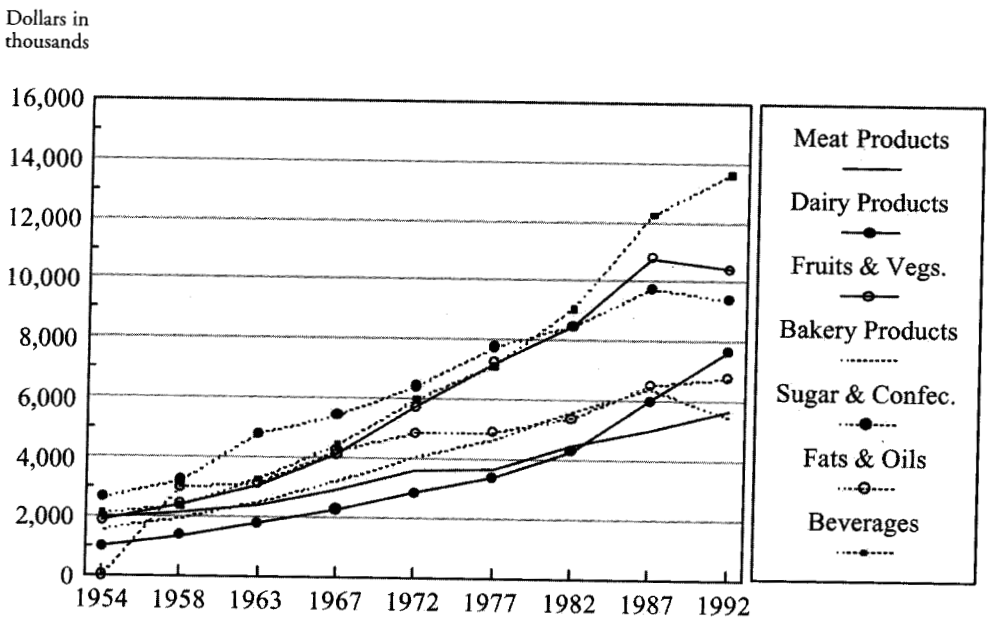

Figure 15.2 Real value added per establishment in U.S. food-processing industries, 1954–92.

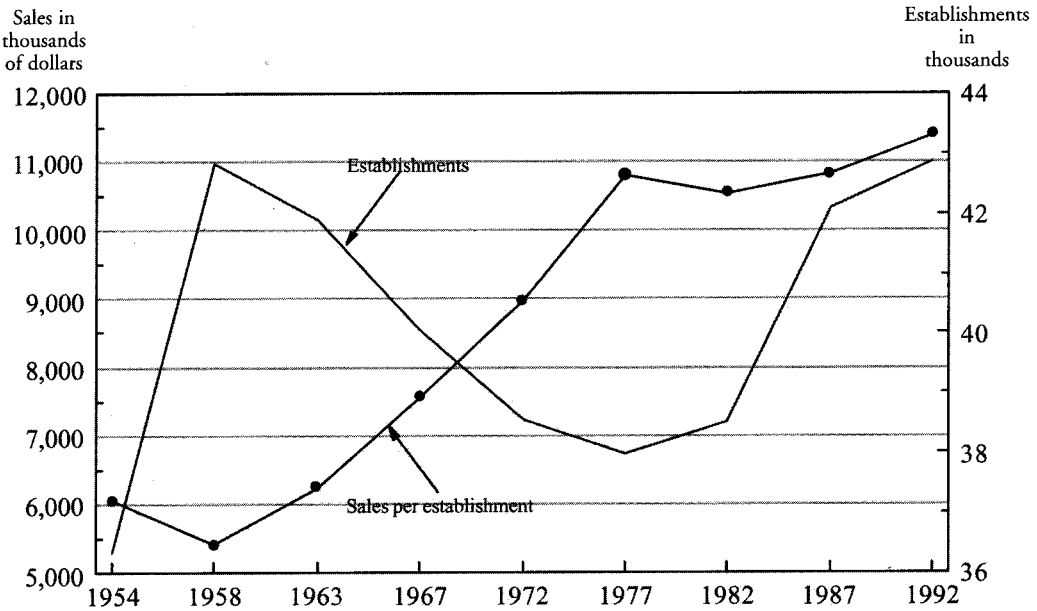

Figure 15.3 Number of establishments and real sales in U.S. grocery wholesaling, 1954–92.

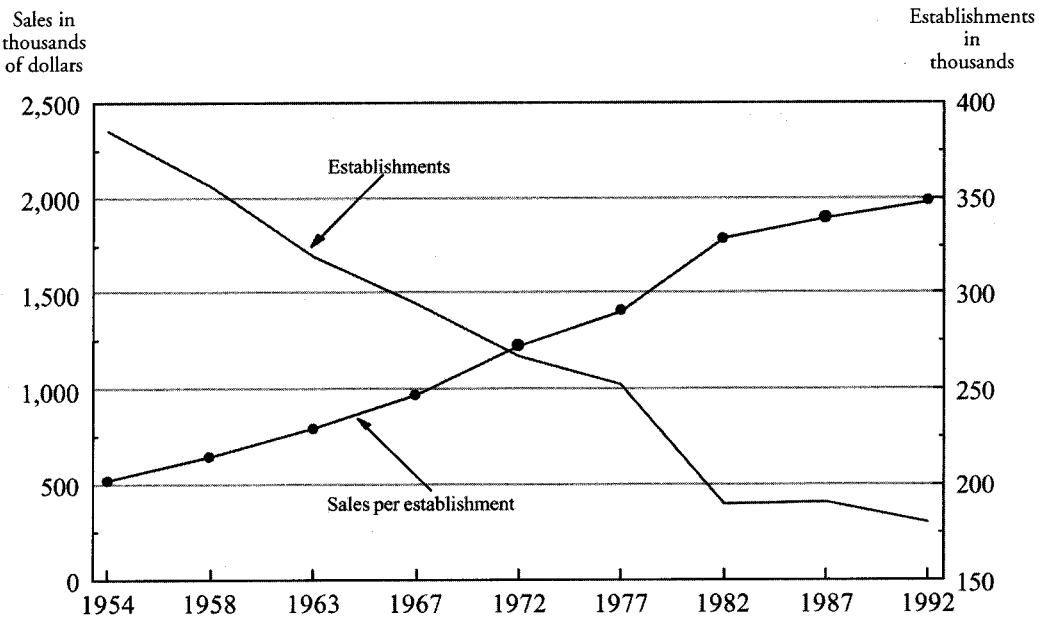

Figure 15.4 Number of establishments and real sales per establishment in U.S. retail food stores, 1954–92.

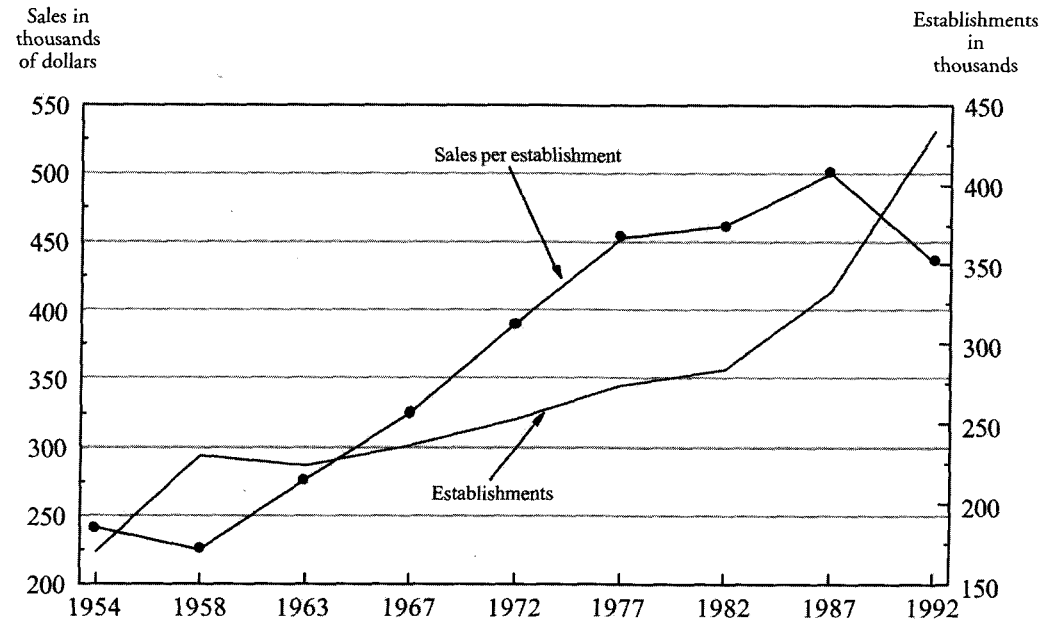

Figure 15.5 Number of establishments and real sales per establishment in U.S. eating-and-drinking places, 1954–92.

increased in size by about six times on the basis of real value added per establishment and have shown considerable productivity increase since 1954.

In grocery wholesaling, retail food stores, and eating-and-drinking places, some different trends are evident (Table A27 and Figs. 15.3–15.5). There is no discernible trend in the number of grocery wholesalers over the 1954–92 period, but establishments in this industry have almost doubled in size as judged by real sales per establishment (Fig. 15.3). The number of retail food stores has diminished by about one-third, while establishments in this industry have nearly quadrupled in size as judged by real sales per establishment (Fig. 15.4). Finally, the number of eating-and-drinking places has increased by a factor of three since 1954, and establishments in this industry have nearly doubled in size as judged by real value of sales since 1954. Clearly, firms in the grocery-wholesaling and eating-and-drinking industries have responded to a different set of forces than have firms in the retail food and food-processing industries.

The trend in profits as a percentage of sales has been fairly consistent across all of these industries—declining initially then becoming fairly stable. The sugar-and-confectionery-products industry has recorded particularly high profit rates, especially from 1954 through 1967. Other industries with high profit rates include preserved fruits and vegetables and beverages. Industries with consistently low profit rates include grocery wholesalers, retail food stores, eating-and-drinking places, and meat products.

Implications for Farm Sector

Food-processing, wholesaling, and retailing firms are becoming larger at the expense of small local firms that are no longer able to compete. These larger firms do not depend solely on any one production area for raw materials. Rather, they obtain their supplies anywhere they can get the volume and quality necessary to support a nationwide or regionwide marketing program. With ready access to markets thus reduced, small-scale producers for local markets are at a serious competitive disadvantage. For a production activity to be viable in a particular area, it must be undertaken on a large enough scale that processing capacity (as well as other support services) can be provided at an economically justifiable scale. It must also be undertaken on a large enough scale that processors will find it economical to buy from local producers.

Another issue of growing significance is the integration of production and processing activities—especially in broiler, egg, pork, fruit, vegetable, and milk production. With such arrangements, processors seek to guarantee a stable quantity and quality of product needed to meet consumers' demands while farmers seek to minimize the price risk and risk associated with finding a market for their produce.[1]

Note

1. Several authors have treated these issues in detail under the subject "industrialization of agriculture." See for example, Michael Boehlje and Lee F. Schrader, "The Industrialization of Agriculture: Questions of Coordination," Purdue University, Department of Agricultural Economics, Staff Paper 94-13, 1994; and Mark Drabenstott, "Industrialization: Steady Current or Tidal Wave?" *Choices*, Fourth Quarter 1994, 4–8.

16. Summary

Significant changes have occurred in the U.S. agriculture and food system since 1950. **There are fewer farms, fewer farm workers, and fewer farm people**, although the rural population has stabilized at about 25 percent of the total U.S. population. The vast majority of American farms are quite small and generate a small percentage of total agricultural output. **Seventy-three percent of the farms have annual sales of less than $50,000 per year and collectively generate only 10 percent of total agricultural output.** On the other hand, **7 percent of the farms have annual sales of $250,000 or more and collectively generate over 60 percent of total agricultural output.**

The relative importance of agriculture to the national economy has declined steadily during the past century. Agriculture now generates only about 1 percent of national income, employs about 2 percent of the nation's workers, and is home to less than 2 percent of the total U.S. population. Capital has indeed substituted for labor, but capital use as a percentage of annual cash receipts from farm marketings has also declined. Since 1950, **farms have, on average, doubled in size as measured by both acres per farm and real gross sales per farm.** But sales volume on all U.S. farms would have increased since 1950 even without an increase in acres or in numbers of animals simply because of increases in labor productivity and animal and crop yields.

Incomes of farm families appear now to be more nearly in line with incomes of nonfarm families than in years past. Some of this apparent equality is due to the farm programs Congress has enacted. But for a strong majority of farm families, **the apparent equality is due to substantial off-farm earnings. The majority of farm families no longer depend primarily on farming for their livelihood.** Hence, developmental or rural-industrial policy is now more important to many farm families—particularly to farm families on the smaller farms—than is traditional farm price-and-income policy. The distribution of direct government payments to farmers is somewhat skewed in favor of the larger farmers. This is as would be expected since the size of these payments tends to be related to production volume. Many argue that this is the way it must be if we are to encourage operators of the larger farms who produce most of the farm output to participate in the programs Congress enacts. Nevertheless, the larger farmers are less in need of government income support since most of their farms are large enough to provide a reasonable family income. In any event, **the larger farmers, and even most of the small-**

er farmers, do not rely greatly on direct government payments to bring farm-family income to a level comparable to or higher than that of nonfarm families.

Since 1949 there has been a small but steady increase in the percentage of farms and percentage of acres operated by part owners, and a corresponding decrease in the percentage of farms and percentage of acres operated by tenants. The percentage of farms and the percentage of acres operated by full owners has not changed significantly since 1949. There has been a slight increase in the percentage of farms and percentage of acres operated by family-held corporations, but little change in these percentages for other types of organizations in agriculture. **Business corporations are an insignificant factor in the U.S. agricultural sector.**

Farm operators who remain on the farm are, on average, getting older. Apparently, fewer and fewer existing farm operators are being replaced with younger people.

There has been some decline in the total acreage farmed, but **little change of significance in the mix of crops harvested or in the percentage of total cash receipts derived from the different farm enterprises.** However, **there has been considerable change in the mix of inputs used by the farming sector.** Interest and depreciation now constitute a higher proportion of total production expenses, and purchased inputs are now more important than farm-produced inputs. **Aggregate labor use has declined and aggregate capital use has increased. Farm debt has increased substantially** so that farmers, particularly the larger farmers, are now much more vulnerable to high interest rates and short-term erosion of asset values.

Real prices received by U.S. farmers have declined significantly and for all commodities. Technological advance in agriculture has been the primary cause—not middlemen exploiting farmers. **Real prices paid by farmers, however, have changed very little since 1950. The profit margin farmers receive is now considerably lower than it was in the 1950s.** Farmers have been able to survive this situation fairly well, though, given the **tremendous increases in productivity brought about by the greater use of machinery, fertilizers, and other chemicals, and given the phenomenal increases in crop and animal yields.** Relative prices of farm inputs have a considerable impact on farmers' use of different inputs and, therefore, on the substitutability of inputs. Further changes in these relative prices could significantly affect the future structure of the farming sector. Farmers' adoption of technological advances leading to lower farm prices and lower per-unit profit margins have led to fewer and larger farms. Further technological advances can be expected to lead to a continuation of this trend into the foreseeable future.

Prices received by U.S. farmers for almost all farm commodities are quite variable, as one would expect in an industry where weather, both in the United States and around the world, plays such a crucial role. Nevertheless, prices of the commodities receiving legislative support are not necessarily less variable than are prices of the farm commodities receiving no legislative support. For some commodities without government support (e.g., for broilers and eggs), prices remain relatively stable. For other commodities without government support (e.g., potatoes and most of the fruits), farmers are

able to survive even in the face of high price variability. Furthermore, prices of nonagricultural commodities are also quite variable. Hence, justifying farm price-and-income support on the basis that farm prices vary considerably is questionable.

Agricultural exports, both absolute and as a percentage of cash receipts from farming, reached a peak in the early 1980s, then diminished as the value of the U.S. dollar strengthened and/or as other nations began satisfying more of their demand with local production. **Agricultural exports as a percentage of cash receipts from farming are again on the upswing continuing a long-term trend begun in 1950.** Imports of agricultural products have also increased, but the agricultural trade balance is still positive and increasing. **Growth markets for agricultural exports in recent decades have included Mexico, Southeast Asia, Hong Kong, Korea, and Taiwan. The mix of both agricultural exports and agricultural imports has changed substantially since 1950.** Oilseed products now comprise over 20 percent of the value of agricultural exports. Cotton and tobacco have become minor export commodities. On the import side, fruits and vegetables have become more important, while coffee and sugar have become less important.

The management of reserve stocks in the aggregate is a difficult task. The private sector appears to do an adequate job of maintaining stocks of sufficient magnitude to enable the smooth functioning of the marketing system. Given variations in weather and demand in the United States as well as in other countries, however, it has proven nearly impossible to devise government policy that can maintain reasonable and stable levels of reserve stocks over the long term.

Price-support policy for U.S. farmers has been revised several times during the 1950–98 period, but has been quite generous over most of the period. The FAIR Act of 1966, however, promises to bring about significant changes in support policy. Nonresource loans for the major program commodities was retained by this legislation, but it eliminates target prices, deficiency payments, underplanting provisions, and acreage-reduction provisions. Income support is now being provided with annual transition payments that will, presumably, drop to zero after 2002.

The number of agricultural cooperatives per 1,000 farms and agricultural-cooperative membership per farm increased to a peak in the mid-1970s, then began a strong downtrend. Nevertheless, farmers, on average, still belong to at least one marketing and one service cooperative. **Agricultural cooperatives continue to be significant in assisting farmers in marketing their produce and purchasing their inputs.** Some cooperative restructuring has taken place in the 1980s, and cooperative membership per farm has declined slightly from the peak of the mid-1970s. **Agricultural cooperatives' share of farm marketings and of total farm input supply, however, has been increasing steadily even in the face of declining numbers of cooperatives.**

Significant changes have occurred in food consumption and in the composition and behavior of the nation's food consumers. The proportion of personal consumption expenditures spent on food has declined continuously since 1950. The population is getting older, there are more single-parent families, there are more two-wage-earner families, and consumers are now more diet conscious. In response, consumption of food

away from home has increased in importance while consumption of food at home has diminished in importance; per-capita consumption of poultry meat has increased steadily since 1950; per-capita consumption of pork and all milk has declined steadily until recent years; per-capita consumption of beef has declined since the 1970s; per-capita consumption of fresh fruits and vegetables has increased since the 1970s. Carbonated soft drinks have become increasingly popular while per-capita consumption of coffee and fluid milk have declined.

The farmer's share of the consumer's food dollar has diminished continuously since 1950, and particularly since the mid-1970s. This is in large part in response to consumers' demand for more and more nonfood services as part of their food purchases.

The number of establishments in the food-processing industries has been declining, and firms in these industries have been getting larger. Volume of production has increased, however, consistent with the needs of a growing population, and productivity of the food-processing industries has increased significantly. While overall performance of the food-processing industries has been enhanced, the decline in number of establishments means that there are fewer handlers to which farmers can sell their produce. Furthermore, as food-processing establishments get larger, their owners seek farm products from areas that can supply the volume needed to sustain their size of business. In turn, local farm produce is often overlooked, not because it cannot be produced as efficiently as in other regions, but simply because it is not produced in the volume needed by processors.

Appendix 1

A Brief Chronology of American Agriculture Since 1950[1]

Farm Economy

1950–60—Expansion of contracting in the broiler industry by feed dealers with growers occurs.
1950s —Large agricultural surpluses seen.
1953 —Post–Korean War readjustment takes place.
1952–53—Drought in the wheat and cotton production areas occurs.
1957–58—Recession.
1958–70—Business expands.
1964–73—Vietnam War takes place.
1970–80—Inflation rate increases. Economic growth rate declines.
1971 —U.S. suspends commitment to IMF. First devaluation of the U.S. dollar occurs.
1972 —Russian wheat sale brings higher farm prices.
1972 —Tropical storm Agnes wreaks havoc in Northeast.
1973 —Second devaluation of U.S. dollar; dollar permitted to float.
1973–74—Arab oil boycott occurs.
1973–75—Export-led boom period for agriculture takes place.
1973–83—OPEC-induced oil price rise.
1976 —Severe drought affects corn and soybean production in the Midwest.
1979–84—Interest rate hike is seen; farmland value deflates.
1980s —For the first time since the 19th century, foreigners (Europeans and Japanese primarily) begin to purchase significant acreages of farmland and ranchland.
1982–84—Farm-sector depression and erosion of farmland values with associated farm foreclosures occurs.
1983 —Net farm income drops to $14.2 billion from its previous record of $34.4 billion in 1973.
1983–90—Business expands.
1985–86—Farmland value depression occurs.
1986 —The Southeast's worst summer drought on record takes severe toll on many farmers.

1987 —Farmland values bottom out after a six-year decline, signaling both a turnaround in the farm economy and increased competition with other countries' exports.

1987 —Stock market crash of 1987: DOW falls 96 points on October 14, 57 points on October 15, 89 points on October 16, and 514 points on October 17.

1988 —Scientists warn that the possibility of global warming may affect the future viability of American farming.

1988 —One of the worst droughts in the nation's history hits Midwestern farmers.

1990–91—Recession.

1992–97—Business expands.

1993 —Severe drought affects wheat and cotton production.

1996 —Net farm income exceeds $53 billion, a new record.

Farm Technology

1951 —The first embryo transplant occurs in cattle.

1951 —DNA structure is discovered by Crick, Watson, and Wilkins.

1954 —Number of tractors on farms exceeds the number of horses and mules for first time.

1955 —6–12 labor-hours required to produce 100 bushels (4 acres) of wheat with tractor, 10-foot plow, 12-foot rod weeder, harrow, 14-foot drill and self-propelled combine, and trucks.

1957 —The Soviet Union launches Sputnik satellite into space.

1960s —Anhydrous ammonia increasingly used as cheap source of nitrogen, spurring higher yields.

1961 —Last year for which USDA records number of horses on farms.

1965 —5 labor-hours required to produce 100 pounds (⅓ acre) of lint cotton with tractor; 2-row stalk cutter; 14-foot disk; 4-row bedder, planter, and cultivator; and 2-row harvester.

1965 —5 labor-hours required to produce 100 bushels (3⅓ acres) of wheat with tractor, 12-foot plow, 14-foot drill, 14-foot self-propelled combine, and trucks.

1965 —99 percent of sugarbeets harvested mechanically.

1968 —96 percent of cotton harvested mechanically.

1970s —No-tillage agriculture popularized.

1975 —2–3 labor-hours required to produce 100 pounds (⅓ acre) of lint cotton with tractor, 2-row stalk cutter, 20-foot disk, 4-row bedder and planter, 4-row cultivator with herbicide applicator, and 2-row harvester.

1975 —3¼ labor-hours required to produce 100 bushels (3 acres) of wheat with tractor, 30-foot sweep disk, 27- foot drill, 22-foot self-propelled combine, and trucks.

1975 —3⅓ labor-hours required to produce 100 bushels (1⅛ acres) of corn with

tractor, 5-bottom plow, 20-foot tandem disk, planter, 20-foot herbicide applicator, 12-foot self-propelled combine, and trucks.

1980s —More farmers using no-till or low-till methods to curb erosion.

1980s —The era of *biotechnology* comes to agriculture, most notably in the form of bovine somatotropin (bST) and porcine somatotropin (pST).

1987 —1½ to 2 labor-hours required to produce 100 pounds (⅖ acre) of lint cotton with tractor, 4-row stalk cutter, 20-foot disk, 6-row bedder and planter, 6-row cultivator with herbicide applicator, and 4-row harvester.

1987 —3 labor-hours required to produce 100 bushels (3 acres) of wheat with tractor, 35-foot sweep disk, 30-foot drill, 25-foot self-propelled combine, and trucks.

1987 —2¾ labor-hours required to produce 100 bushels (1⅛ acres) of corn with tractor, 5-bottom plow, 25-foot tandem disk, planter, 25-foot herbicide applicator, 15-foot self-propelled combine, and trucks.

1989 —After several slow years, the sale of farm equipment rebounds.

1989 —More farmers begin to use low-input sustainable agriculture (LISA) techniques to decrease chemical applications.

1994 —Bovine somatotropin (bST) approved for commercial use by Food and Drug Administration. Monsanto begins sales on February 10.

1995 —EPA approves the commercial release of transgenic potatoes and corn containing the bacterium, *Bacillus thuringiensis* (Bt), toxic to insects.

1996 —Dolly the lamb is born representing the first clone of an adult mammal.

Crops and Livestock

1950–55—Use of herbicides and pesticides increases.

1955 —Sterile flies used for screwworm control.

1960s —Soybean acreage expands as farmers use soybeans as an alternative to other crops.

1960 —96 percent of corn acreage planted with hybrid seed.

1961 —*Gaines* wheat distributed.

1966 —*Fortuna* wheat distributed.

1970 —Nobel Peace Prize awarded to Norman Borlaug for developing high-yielding wheat varieties.

1972 —First evidence seen that porcine somatotropin (pST) promotes weight gain and reduces backfat thickness in pigs.

1972 —Production of DDT is banned since it was found to have an extended toxic life. DDT was patented in Switzerland in 1950 and first made available in the United States in 1943.

1975 —*Lancota* wheat introduced.

1978 —Hog cholera officially declared eradicated.

1979 —*Purcell* winter wheat introduced.

1980s —Biotechnology becomes a viable technique for improving crop and livestock

products; advances in molecular biology provide a means of producing large quantities of recombinantly derived proteins (e.g., porcine and bovine somatotropin) in the laboratory.

1982 —First use of recombinant bovine somatotropin (BST) on lactating cows to increase milk production is reported in the literature. Yield increases of from 20–40 percent reported.

1983–84—Avian influenza of poultry is eradicated before it spread beyond a few Pennsylvania counties.

1986 —Antismoking campaigns and legislation begin to affect the tobacco industry.

1987 —*Pseudomonas syringae*, a genetically engineered microorganism that delays the formation of ice crystals on plants, is released for field-testing in northern California.

1989 —CBS's *60 Minutes* declares that "the most potent cancer-causing agent in our food supply is a substance (Alar or *Daminozide*) sprayed on apples to keep them on the trees longer to make them look better." This sets off a scare having a long-lasting impact on apple producers as well as on the manufacturer of Alar.

1990s —Biotechnology brings important new developments in dairy, corn, and other commodities.

1990s —USDA meat-inspection program is modernized in response to concerns about food safety.

1994 —FDA finds the transgenic Flavr Savr tomato as safe as traditionally bred varieties.

1995 —EPA approves the first commercial release of transgenic crops (potatoes and corn) with *Bacillus thuringiensis* (Bt), a soil bacterium containing proteins toxic to insects.

Transportation

1950s —Trucks and barges compete successfully for agricultural products as railroad rates rose.

1956 —Interstate Highway Act passed.

1960s —Financial condition of northeastern railroads deteriorate; rail abandonments accelerate.

1960s —Agricultural shipments by all-cargo planes increase, especially shipments of strawberries and cut flowers.

1970 —The Burlington Northern Railroad is formed from a merger of the Great Northern, Northern Pacific, CB & Q, and Spokane, Portland, and Seattle Railroads.

1970 —National Railroad Passenger Act authorizes the National Railroad Passenger Corporation to provide noncommuter intercity rail passenger service throughout the United States.

1973 —Congress passes the Rail Reorganization Act authorizing the Consolidated

Rail Corporation (CONRAIL) as a private company to take over six bankrupt rail lines: the Penn Central, Jersey Central, LeHigh Valley, Reading, Erie Lackawanna, and LeHigh and Hudson River Railroads. CONRAIL was sold to private investors in 1987, and to CSX and Norfolk Southern in 1999.

1972–74—Russian grain sale causes massive tie-ups in rail system.

1980 —Railroad and trucking industries deregulated.

1980s —Abandonment of many rural railroad lines reduces public transportation options for rural residents and for freight.

Agricultural Trade and Development

1963,74 —World conferences highlight world food problems.

1971 —Consultative Group on International Agricultural Research is organized to fund regional research institutes in developing countries.

1972 —Increased exports to Soviet Union and elsewhere absorb agricultural surpluses, especially of grains and oilseeds.

1979 —Grain embargo enacted against the Soviet Union following its invasion of Afghanistan.

1980s —European grain and animal exports become more competitive with U.S. products.

1981 —President Reagan lifts the grain embargo against the Soviet Union.

1981 —European Union bans the use of *diethylstilbestrol* (DES) and calls for a study of five other beef-growth hormones in use in Europe and elsewhere.

1988 —The U.S.-Canada trade accord initiates trade barrier reductions in all commodities, including farm products.

1988–89—European Union prohibits its farmers from using six growth hormones in meat production and bans the imports of meat raised with these hormones.

1990 —Negotiations begin for a free-trade agreement with Mexico.

1993 —North American Free Trade Agreement (NAFTA) signed by Canada, Mexico, and the United States lowers trade barriers and enhances export prospects.

1994 —New General Agreement on Tariffs and Trade (GATT) accord signed lowering trade barriers and enhancing worldwide trade prospects. The World Trade Organization (WTO) is formed.

Life on the Farm

1950s —Television is widely accepted.

1950s —Many rural areas lose population as many farm family members seek outside work.

1954 —70.9 percent of all farms have cars; 49 percent have telephones; 93 percent have electricity.

1954 —Social Security coverage extended to farm operators.
1962 —REA authorized to finance educational TV in rural areas.
1970s —Rural areas experience prosperity and immigration.
1975 —90 percent of all farms have phones; 98.6 percent have electricity.
1980s —Hard times and indebtedness affect many farmers in the Midwest. Many rural counties decline in population.

Farm Organizations and Movements

1955 —National Farmers Organization formed.
1960s —United Farm Workers Organizing Committee begins unionizing California farm workers.
1960s —Commodity groups move to forefront of influence with Congress.
1966 —Fair Labor Standards Act extended to include agricultural labor; Federal minimum wage extended to some farm workers.
1979 —The American Agriculture Movement organizes a demonstration referred to as a "tractorcade" in Washington, D.C.
1986–88—Country singer Willie Nelson organizes Farm Aid concerts to benefit indebted farmers.

Agricultural Education and Extension

1950–54—Land-grant college enrollments increase greatly as veterans enroll under G.I. bill.
1958 —National Defense Education Act passed.
1964 —Antipoverty programs lead to expansion of extension education programs in inner cities.
1970 —853,000 students are enrolled in agricultural courses.
1974 —Agreement between USDA and land-grant colleges establishes Council on International Science and Education.
1980s —Enrollments in colleges of agriculture drop in wake of the farm crisis.
1985 —USDA scientists indicate that agricultural chemicals infiltrate groundwater more than previously thought.

Government Programs and Policy

1950s —Decade is marked by debates about level of farm price supports and surpluses.
1954 —Agricultural Act reestablishes flexible price supports, authorizes commodity set-asides, and provides support payments for wool.
1954 —National Wool Act provides for wool and mohair price supports.
1954 —Agricultural Trade Development and Assistance Act (P.L. 480) is designed to dispose of surplus commodities to developing countries.

1955–72—Emphasis increases on rural development and renewal.
1956 —Agricultural Act authorizes the Soil Bank Program.
1956 —Great Plains Conservation Program authorizes land conservation program in ten Great Plains states.
1957 —Poultry Inspection Act sets standards for processing and distributing poultry products.
1958 —Agricultural Act revises price support levels and terminates Soil Bank Program.
1958 —So-called Delaney Clause passes, under which additives are to be screened for health risk, and carcinogenic additives are prohibited.
1960s —The government uses food surpluses for the needy at home and abroad.
1960s —State legislation to keep land in farming receives increasing impetus.
1961 —Food distribution to needy expands.
1961 —Emergency Feed Grain Act authorizes a voluntary acreage reduction program for feed grains.
1962 —Rachel Carson's book *Silent Spring*, warning of the hazards of pesticides, is published.
1962 —Trade Expansion Act gives president authority to enter into trade agreements with other nations.
1963 —Marketing quotas for wheat rejected in farmer referendum.
1963 —An era of establishing loan rates at or near world market prices begins.
1964 —Agricultural Act provides voluntary control program for cotton and wheat.
1964 —Food Stamp Act makes Food Stamp Program part of permanent legislation.
1965 —Food and Agricultural Act is first of a series of comprehensive farm bills with a five-year life.
1965 —Water Quality Act requires an individual state to establish minimum standards for water within its boundaries.
1965 —Cropland Adjustment Program Act authorizes a long-term land retirement program.
1966 —President's Committee on Rural Poverty appointed.
1966 —Child Nutrition Act establishes school breakfast program.
1966 —Food for Peace Act shifts emphasis of P.L. 480 program from a surplus disposal program to an economic development program.
1967 —Agricultural Fair Practices Act prohibits processors from discriminating against agricultural cooperative members.
1967 —Wholesome Meat Act requires federal inspection of meat and poultry products.
1968 —Special food service program for children enacted.
1969,71 —White House Conferences on Food, Nutrition, and Health takes place.
1969 —National Environmental Policy Act requires environmental impact reports.
1970s —Surplus disposal through sales abroad leads to easing of production controls and reliance on market prices.

1970 —Agricultural Act provides comprehensive legislation for agriculture and more flexible approach to supply control.
1970 —Environmental Protection Agency created.
1970 —Plant Variety Protection Act encourages development of new plants.
1971 —Rural Environmental Assistance Program redesigns conservation goals and emphasizes pollution prevention.
1972 —Pesticide Control Act replaces Federal Insecticide, Fungicide, and Rodenticide Act of 1947.
1972 —Rural Development Act provides for establishing business and industry in rural areas.
1972 —Water Pollution Control Act amends Water Quality Control Act of 1965.
1973 —Agriculture and Consumer Protection Act provides comprehensive legislation for agriculture and emphasizes maintaining or increasing production instead of controlling production, introduces target prices and deficiency payments as a means of supporting farm incomes.
1974 —Trade Act fosters economic growth and relations with foreign nations.
1974 —Congress ends the ban on private possession of gold.
1976 —Direct Marketing Act encourages farmer direct marketing to consumers.
1976 —Toxic Substances Control Act regulates industrial chemicals and chemical products.
1977 —Soil and Water Resources Conservation Act requires periodic report by secretary of agriculture on a national soil and water conservation program.
1977 —Food and Agriculture Act provides comprehensive legislation for agriculture, raises price and income supports, and establishes the Farmer-Owned Reserve Program for grains.
1977 —The Alaska pipeline begins operation.
1979 —Meat Import Act provides for import controls on certain meat products.
1980 —Food Security Wheat Reserve Act authorizes a wheat national reserve program.
1980 —Federal Crop Insurance Act expands experimental crop insurance program to cover all crops.
1980 —Staggers Rail Act deregulates rail rates.
1981 —Agriculture and Food Act provides comprehensive legislation for agriculture, sets specific target prices for each year of the bill, and lowers milk-support levels.
1982 —Omnibus Budget Reconciliation Act freezes dairy price supports and authorizes two deductions of fifty cents/cwt each from farmers' milk checks when dairy purchases exceeded specified levels.
1982 —No-Net Cost Tobacco Program Act establishes a producer-supported tobacco program.
1983 —USDA secretary John Block implements a payment-in-kind (PIK) program, resulting in the third-largest acreage reduction ever.
1983 —Dairy and Tobacco Adjustment Act freezes tobacco price supports, repeals

the second fifty cent/cwt deduction for dairy farmers, and initiates a voluntary dairy diversion program.

1983 —Migrant and Seasonal Agricultural Worker Protection Act protects rights, pay, and working conditions of migrant workers.

1983 —Temporary Emergency Food Assistance Program (TEFAP) Act authorizes donation of surplus commodities to indigent persons.

1984 —Agricultural Program Adjustment Act freezes target price increases at levels provided for by the 1981 Act.

1985 —Food Security Act provides comprehensive legislation for agriculture, lowers price supports, promotes exports, and establishes the Conservation Reserve Program.

1985 —Farm Credit Restructuring and Regulatory Reform Act restructures Farm Credit Administration.

1986 —Tax Reform Act reduces tax burden on individuals.

1986 —Immigration Reform and Control Act controls unauthorized immigration into the United States.

1987 —Omnibus Budget Reconciliation Act reduces target prices for the 1988 and 1989 crop years, and limits loan-rate reductions for the 1988 and 1989 crops. It also established a 0/92 provision for wheat and feed grains.

1987 —Agricultural Credit Act strengthens the Farm Credit Administration.

1987 —Farm Disaster Assistance Act provides relief to 1986 drought victims.

1988 —United States–Canada Free Trade Agreement Implementation Act is passed.

1988 —Hunger Prevention Act authorizes purchases on the open market for distribution through the TEFAP program.

1989 —Disaster Assistance Act provides relief to 1988 drought victims.

1989 —Thirty million acres retired under the Conservation Reserve Program of the 1985 Food Security Act.

1989 —Omnibus Budget Reconciliation Act reduces deficiency payments for the 1990 crop year, mandates planting flexibility options for oilseeds on up to 25 percent of program acres, reduces funding levels for the TEA and EEP programs, and makes the previously mandatory milk price support reduction for 1990 discretionary.

1990 —Omnibus Budget Reconciliation Act mandates a 15 percent triple-base acreage reduction plan under which farmers (1) may plant any program commodity, any oilseed crop, or any other crop except fruits and vegetables without loss in program base acres, and (2) must forfeit deficiency payments on the triple-base acres. Farmers are permitted to optionally "flex" an additional 10 percent of their base acres under the same restrictions.

1990 —Food, Agriculture, Conservation, and Trade Act provides comprehensive legislation for agriculture, freezes target prices at 1990 levels, establishes a Water Quality Incentive Program, a Wetlands Conservation Reserve Program, and an integrated farm management program.

1990 —Nutrition Labeling and Education Act strengthens food labeling legislation.

1991 —Food, Agriculture, Conservation, and Trade Act Amendments passed.
1993 —North American Free Trade Agreement between the United States, Canada, and Mexico is signed into law.
1994 —USDA reorganizes to streamline functions and improve efficiency.
1996 —Federal Agricultural Improvement and Reform Act provides comprehensive legislation for agriculture; revises farm programs to increase reliance on market signals; authorizes production-flexibility contracts; and eliminates target prices, deficiency payments, underplanting provisions, and acreage reduction programs.
1997 —Taxpayer Relief Act provides tax relief and added flexibility to U.S. farmers.

Note

1. This chronology is based in large part on U.S. Department of Agriculture, "A History of American Agriculture, 1776–1990" (A Color Chart), Economic Research Service, and various other sources cited in the text.

Appendix 2
Statistical Tables

Table A1 National Income Originating in Agriculture, Farm Population and Farm Households, Farm Employment, Capital Expenditures in Agriculture, Number of Farms, and Farm Size, 1950–98

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
National income originating in agriculture as a percentage of U.S. national income	7.2	7.2	6.5	5.6	5.3	4.6	4.3	4.1	4.8	3.8	3.9	3.9	3.7	3.4	3.0	3.2
National income per worker in 1992 dollars																
Agricultural sector ($)	10,538	12,027	11,712	10,565	10,180	9,479	9,797	9,865	11,300	9,949	10,843	11,360	11,673	11,730	11,567	14,264
Total U.S. economy ($)	24,550	26,532	27,261	27,572	27,577	28,043	28,086	28,232	28,296	30,095	30,137	30,925	32,098	32,965	34,037	35,186
Farm population (thou)	23,048	21,890	21,748	19,874	19,019	19,078	18,712	17,656	17,128	16,592	15,635	14,803	14,313	13,367	12,954	12,363
% of U.S. population	15.1	14.1	13.8	12.4	11.7	11.5	11.1	10.3	9.8	9.3	8.7	8.1	7.7	7.1	6.8	6.4
Rural population (thou)	62,431	61,812	61,162	60,437	59,733	58,988	58,204	57,391	56,452	55,465	54,382	54,630	54,805	54,918	54,995	54,988
% of U.S. population	41.0	39.9	38.8	37.7	36.6	35.5	34.5	33.4	32.3	31.2	30.1	29.7	29.4	29.0	28.7	28.3
Households																
U.S. households (thou)	43,554	44,673	45,538	46,385	46,962	47,874	48,902	49,673	50,474	51,435	52,799	53,557	54,764	55,270	56,149	57,436
Farm households (thou)	5,768	5,600	5,433	5,265	5,097	4,929	4,762	4,594	4,426	4,259	4,091	3,749	3,762	3,464	3,345	3,350
U.S. household (size)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.4
Farm household (size)	4.0	3.9	4.0	3.8	3.7	3.9	3.9	3.8	3.9	3.9	3.8	3.9	3.8	3.9	3.9	3.7
Total farm employment (thou)	9,926	9,546	9,149	8,864	8,651	8,381	7,852	7,600	7,503	7,342	7,057	6,919	6,700	6,518	6,110	5,610
% hired workers	23.5	23.4	23.4	23.6	24.1	24.3	24.9	25.5	26.4	26.6	26.7	27.3	27.3	27.3	26.3	26.4
% of farm population	43.1	43.6	42.1	44.6	45.5	43.9	42.0	43.0	43.8	44.3	45.1	46.7	46.8	48.8	47.2	45.4
% of U.S. employment	16.8	15.9	15.2	14.5	14.4	13.5	12.3	11.9	11.9	11.4	10.7	10.5	10.0	9.6	8.8	7.9
Capital expenditures on buildings, land, and equipment ($thou)	4,674	4,920	4,580	4,728	4,164	4,145	3,798	3,923	4,505	5,068	4,488	4,614	5,022	5,411	5,688	6,105
% of total production expenses	24.0	22.0	20.1	22.0	19.1	18.7	16.7	16.6	17.5	18.6	16.4	16.1	16.6	17.1	17.9	18.1
% of total cash receipts	16.4	15.0	14.1	15.3	14.0	14.1	12.5	13.2	13.5	15.1	13.1	13.1	13.8	14.4	15.2	15.5
Farms in the U.S. (thou)	5,648	5,428	5,198	4,984	4,798	4,654	4,514	4,372	4,233	4,097	3,963	3,825	3,692	3,572	3,457	3,356
Acres per farm	213	222	232	242	251	258	265	273	280	289	297	305	314	322	332	340
Gross income per farm ($)	5,861	7,053	7,263	6,912	7,124	7,193	7,523	7,957	9,203	9,248	9,737	10,600	11,469	12,141	12,236	13,870
Real gross income per farm ($)[a]	34,887	40,072	40,573	37,975	38,717	37,659	38,188	39,005	44,247	43,830	45,289	48,849	51,660	53,960	53,434	59,023

[a]Deflated by implicit price deflator for GNP (1992 = 100).

Table A1 (*Continued*)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
National income originating in agriculture as a percentage of U.S. national income	3.1	2.8	2.7	2.8	2.7	2.6	2.8	3.9	3.3	3.1	2.5	2.4	2.7	2.9	2.4	2.7
National income per worker in 1992 dollars																
Agricultural sector ($)	15,925	15,672	15,797	17,482	17,119	17,379	20,189	29,975	24,507	22,885	19,301	20,264	25,060	29,042	24,687	28,708
Total U.S. economy ($)	36,379	36,611	37,181	37,250	36,540	37,223	38,008	38,794	37,474	37,170	37,753	38,020	38,451	38,405	37,697	37,737
Farm population (thou)	11,595	10,875	10,454	10,307	9,712	9,425	9,610	9,472	9,264	8,864	8,253	6,194	6,501	6,241	6,051	5,850
% of U.S. population	5.9	5.5	5.2	5.1	4.7	4.5	4.6	4.5	4.3	4.1	3.8	2.8	2.9	2.8	2.7	2.5
Rural population (thou)	54,919	54,816	54,643	54,455	54,339	55,032	55,622	56,156	56,457	57,017	57,561	58,179	58,762	59,415	59,769	60,395
% of U.S. population	27.9	27.2	26.9	26.5	26.5	26.5	26.5	26.4	26.4	26.4	26.4	26.4	26.4	26.2	26.3	
Households																
U.S. households (thou)	58,406	59,236	60,813	62,214	63,401	64,778	66,676	68,251	69,859	71,120	72,867	74,142	76,030	77,330	80,776	82,368
Farm households (thou)	3,214	2,934	2,944	2,870	2,747	2,644	2,563	2,483	2,402	2,322	2,241	2,161	2,080	2,000	1,919	1,891
U.S. household (size)	3.4	3.4	3.3	3.3	3.2	3.2	3.1	3.1	3.1	3.0	3.0	3.0	2.9	2.9	2.8	2.8
Farm household (size)	3.6	3.7	3.6	3.6	3.5	3.6	3.7	3.8	3.9	3.8	3.7	2.9	3.1	3.1	3.2	3.1
Total farm employment (thou)	5,214	4,903	4,749	4,596	4,523	4,436	4,373	4,337	4,389	4,342	4,374	4,170	3,957	3,774	3,699	3,582
% hired workers	26.1	25.6	25.5	25.6	26.0	26.2	26.2	26.9	29.9	30.3	31.5	31.3	32.0	33.7	35.2	35.9
% of farm population	45.0	45.1	45.4	44.6	46.6	47.1	45.5	45.8	47.4	49.0	53.0	67.3	60.9	60.5	61.1	61.2
% of U.S. employment	7.2	6.6	6.3	5.9	5.7	5.6	5.3	5.1	5.1	5.1	4.9	4.5	4.1	3.8	3.7	3.6
Capital expenditures on buildings, land, and equipment ($thou)	6,688	7,446	6,696	6,865	7,291	7,364	8,067	10,718	12,597	13,344	15,037	16,503	19,687	21,252	19,763	18,161
% of total production expenses	18.3	19.5	16.9	16.3	16.4	15.6	15.6	16.6	17.7	17.8	18.2	18.6	19.1	17.2	14.8	13.0
% of total cash receipts	15.4	17.4	15.2	14.2	14.4	14.0	13.2	12.3	13.6	15.0	15.8	17.1	17.5	16.2	14.1	12.8
Farms in the U.S. (thou)	3,257	3,162	3,071	3,000	2,949	2,902	2,860	2,823	2,795	2,521	2,497	2,456	2,436	2,437	2,440	2,440
Acres per farm	348	355	363	369	374	378	382	385	388	420	422	427	429	428	426	424
Gross income per farm ($)	15,496	15,977	16,883	18,802	19,945	21,406	24,876	35,037	35,151	39,901	41,216	44,286	52,729	61,847	61,178	68,165
Real gross income per farm ($)[a]	63,768	63,908	64,193	68,123	68,540	69,953	77,738	102,748	94,747	98,278	95,408	95,857	105,881	114,319	103,341	104,548

[a]Deflated by implicit price deflator for GNP (1992 = 100).

(*Continued*)

Table A1 (*Continued*)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
National income originating in agriculture as a percentage of U.S. national income	2.4	1.9	1.7	1.6	1.6	1.5	1.5	1.5	1.4	1.4	1.3	1.2	1.2	1.1	1.0	0.9	0.9
National income per worker in 1992 dollars																	
Agricultural sector ($)	25,647	21,702	21,417	22,588	24,253	23,946	24,474	25,147	24,676	23,597	23,332	22,884	22,645	20,640	20,116	21,076	21,617
Total U.S. economy ($)	37,304	38,036	39,725	40,101	40,107	40,679	41,651	41,489	41,831	41,502	42,436	42,669	43,226	43,911	44,793	45,969	47,211
Farm population (thou)	5,628	5,787	5,754	5,355	5,226	4,986	4,951	4,801	4,591	4,632	4,665	4,500	4,535	4,500	4,450	4,400	4,400
% of U.S. population	2.4	2.5	2.4	2.2	2.2	2.1	2.0	1.9	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.6	1.6
Rural population (thou)	60,782	61,382	62,000	62,500	63,133	63,889	64,798	66,211	66,964	67,564	67,940	68,877	69,541	70,230	70,900	71,500	72,200
% of U.S. population	26.2	26.2	26.2	26.2	26.2	26.3	26.4	26.8	26.8	26.7	26.6	26.7	26.7	26.7	26.7	26.7	26.7
Households																	
U.S. households (thou)	83,527	83,918	85,290	86,789	88,458	89,479	91,124	92,830	93,347	94,312	95,669	96,426	97,107	98,990	99,627	101,018	102,000
Farm households (thou)	1,863	1,834	1,806	1,778	1,805	1,704	1,684	1,606	1,637	1,642	1,614	1,597	1,550	1,552	1,550	1,570	1,550
U.S. household (size)	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Farm household (size)	3.0	3.2	3.2	3.0	2.9	2.9	2.9	3.0	2.8	2.8	2.9	2.8	2.9	2.9	2.9	2.8	2.8
Total farm employment (thou)	3,466	3,349	3,233	3,116	2,912	2,897	2,954	2,863	2,891	2,877	2,810	2,800	2,767	2,836	2,842	2,670	2,627
% hired workers	36.5	37.0	34.6	33.3	35.7	36.2	35.2	32.5	30.9	31.6	30.8	30.6	30.4	30.6	29.3	32.9	33.5
% of farm population	61.6	57.9	56.2	58.2	55.7	58.1	59.7	59.6	63.0	62.1	60.2	62.2	61.0	63.0	63.9	60.7	59.7
% of U.S. employment	3.5	3.3	3.1	2.9	2.7	2.6	2.6	2.4	2.5	2.5	2.4	2.3	2.2	2.3	2.2	2.1	2.0
Capital expenditures on buildings, land, and equipment ($thou)	14,910	13,866	13,902	10,124	9,173	12,108	12,784	14,325	16,152	14,342	14,066	15,376	15,526	15,088	17,082	18,132	18,955
% of total production expenses	10.6	9.9	9.8	7.6	7.3	9.2	9.1	9.8	10.5	9.4	9.2	9.6	9.3	8.7	9.4	9.5	10.0
% of total cash receipts	10.5	10.1	9.7	7.0	6.8	8.5	8.5	8.9	9.5	8.5	8.2	8.6	8.6	8.0	8.6	8.7	9.6
Farms in the U.S. (thou)	2,407	2,379	2,334	2,293	2,250	2,213	2,201	2,175	2,146	2,117	2,108	2,093	2,085	2,072	2,064	2,058	2,050
Acres per farm	427	430	436	441	447	451	452	456	460	464	464	460	460	458	457	457	456
Gross income per farm ($)	67,916	64,380	72,904	71,048	69,566	76,355	79,876	88,644	92,501	90,641	97,120	97,300	103,634	101,710	114,216	115,971	113,687
Real gross income per farm ($)[a]	98,145	89,417	97,077	91,087	86,958	92,439	93,096	98,933	98,932	93,156	97,120	94,834	98,605	94,351	103,644	103,917	100,876

[a]Deflated by implicit price deflator for GNP (1992=100).

Table A2 Percentage Distribution of Farms and of Farm Output, and Income of Farm Families as a Percentage of Money Income of All U.S. Households by Sales Category, 1950–98

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Number of farms by sales category as a percentage of all farms																
Under $20,000	—[f]	—	—	—	—	—	—	—	—	—	91.4	90.5	89.5	88.5	88.0	86.9
$20,000–$49,999[a]	—	—	—	—	—	—	—	—	—	—	5.7	6.2	6.9	7.5	7.8	8.3
$50,000–$99,999[b]	—	—	—	—	—	—	—	—	—	—	2.3	2.5	2.9	3.2	3.3	3.7
$100,000–$249,999[c]	—	—	—	—	—	—	—	—	—	—	0.6	0.7	0.8	0.9	0.9	1.1
$250,000–$499,999[d]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
$500,000 and over	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Percentage distribution of annual gross cash income from farming by sales category																
Under $20,000	—	—	—	—	—	—	—	—	—	—	48.6	45.9	42.9	40.5	39.6	36.7
$20,000–$49,999[a]	—	—	—	—	—	—	—	—	—	—	18.5	18.9	19.4	19.9	20.0	20.0
$50,000–$99,999[b]	—	—	—	—	—	—	—	—	—	—	15.5	16.2	17.0	17.7	17.8	18.7
$100,000–$249,999[c]	—	—	—	—	—	—	—	—	—	—	17.3	19.0	20.7	21.9	22.6	24.6
$250,000–$499,999[d]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
$500,000 and over	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Net cash income per farm from farm sources as a percentage of mean money income per U.S. household[e]																
Under $20,000	—	—	—	—	—	—	—	—	—	—	20.5	21.7	20.8	18.8	19.5	18.6
$20,000–$49,999[a]	—	—	—	—	—	—	—	—	—	—	109.0	113.9	108.5	100.1	101.3	98.7
$50,000–$99,999[b]	—	—	—	—	—	—	—	—	—	—	195.1	207.7	198.5	185.0	155.4	184.6
$100,000–$249,999[c]	—	—	—	—	—	—	—	—	—	—	449.0	478.0	445.0	413.0	427.0	429.0
$250,000–$499,999[d]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
$500,000 and over	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(*Continued*)

[a]This sales category is $20,000–$39,999 for 1950–92.

[b]This sales category is $40,000–$99,999 for 1950–92.

[c]This sales category is $100,000 and over for 1960 and 1965, and $100,000–$199,999 for 1970 through 1980.

[d]This sales category is $200,000–$499,999 for 1983 and earlier.

[e]Net cash income includes net farm income, off-farm income, government payments, and farm-related cash income. Prior to 1977 this series was estimated as gross cash income less total "production" expenses. Beginning in 1977 it is gross cash income less total "cash" expenses.

[f]Data not available.

Table A2 (*Continued*)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Number of farms by sales category as a percentage of all farms																
Under $20,000	85.0	84.7	83.7	83.1	82.4	81.6	79.3	72.7	71.0	69.2	68.1	67.8	65.1	64.0	62.8	61.6
$20,000–$49,999[a]	9.3	9.5	10.0	10.1	10.2	10.3	10.7	11.6	11.8	12.5	12.3	12.3	12.0	11.8	11.6	11.3
$50,000–$99,999[b]	4.4	4.5	4.9	5.2	5.6	6.0	7.2	10.9	11.8	12.5	13.0	13.2	14.3	14.4	14.5	14.7
$100,000–$249,999[c]	1.3	1.4	1.5	1.1	1.2	1.4	1.9	3.2	3.6	3.8	4.3	4.4	5.5	6.2	6.8	7.5
$250,000–$499,999[d]	—[f]	—	—	0.4	0.4	0.5	0.7	1.3	1.4	1.5	1.8	1.8	2.5	2.9	3.3	3.8
$500,000 and over	—	—	—	0.1	0.1	0.2	0.2	0.4	0.4	0.4	0.5	0.5	0.7	0.8	1.0	1.1
Percentage distribution of annual gross cash income from farming by sales category																
Under $20,000	32.3	31.7	30.1	27.5	25.5	23.6	19.9	13.0	11.6	11.3	10.3	10.1	8.8	7.8	6.9	6.1
$20,000–$49,999[a]	20.2	20.2	20.3	20.2	19.2	18.4	16.3	12.2	11.6	11.4	10.4	10.1	8.3	7.3	6.7	5.9
$50,000–$99,999[b]	19.9	20.0	20.6	21.2	21.7	22.1	22.8	24.0	23.9	24.8	23.8	23.6	21.7	19.7	18.8	17.3
$100,000–$249,999[c]	27.6	28.1	29.1	9.8	10.7	11.4	13.1	16.1	16.7	16.5	17.0	17.2	18.0	18.5	19.3	19.8
$250,000–$499,999[d]	—	—	—	7.5	8.2	8.9	10.5	13.4	14.1	14.0	14.9	15.1	16.8	18.5	20.0	21.6
$500,000 and over	—	—	—	13.8	14.7	15.6	17.4	21.4	22.1	22.0	23.6	23.9	26.4	28.2	28.3	29.3
Net cash income per farm from farm sources as a percentage of mean money income per U.S. household[e]																
Under $20,000	18.5	14.3	13.4	−0.0	−1.7	−5.0	−3.1	−2.3	−8.5	−15.9	−18.1	−21.5	0.6	−2.7	−5.8	−7.8
$20,000–$49,999[a]	110.5	88.9	86.4	100.3	88.4	79.0	84.9	82.8	57.8	29.9	18.9	6.6	48.4	35.0	28.9	15.3
$50,000–$99,999[b]	208.2	161.7	152.9	203.2	181.6	164.9	177.4	185.8	131.8	102.3	78.6	54.6	125.7	98.5.0	87.7	59.8
$100,000–$249,999[c]	545.0	341.0	334.0	408.0	396.0	364.0	408.0	454.0	379.0	275.0	222.0	170.0	274.0	239.0	219.0	177.0
$250,000–$499,999[d]	—	—	—	924.0	868.0	797.0	896.0	1,002.0	883.0	681.0	551.0	428.0	557.0	514.0	460.0	412.0
$500,000 and over	—	—	—	5,993.0	6,282.0	4,673.0	4,814.0	5,433.0	4,977.0	4,303.0	3,702.0	3,299.0	3,402.0	2,938.0	2,433.0	2,218.0

[a]This sales category is $20,000–$39,999 for 1950–92.

[b]This sales category is $40,000–$99,999 for 1950–92.

[b]This sales category is $40,000–$99,999 for 1950–92.

[c]This sales category is $100,000 and over for 1960 and 1965, and $100,000–$199,999 for 1970 through 1980.

[d]This sales category is $200,000–$499,999 for 1983 and earlier.

[e]Net cash income includes net farm income, off-farm income, government payments, and farm-related cash income. Prior to 1977 this series was estimated as gross cash income less total "production" expenses. Beginning in 1977 it is gross cash income less total "cash" expenses.

[f]Data not available.

Table A2 (*Continued*)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Number of farms by sales category as a percentage of all farms																	
Under $20,000	60.5	59.0	60.1	60.8	61.4	61.5	60.4	58.9	58.6	53.5	54.1	59.5	60.4	61.5	62.8	61.1	61.0
$20,000–$49,999[a]	11.1	12.1	10.6	10.6	11.0	10.6	11.3	12.2	12.1	12.4	12.1	13.9	12.5	12.6	11.1	13.1	13.1
$50,000–$99,999[b]	14.9	14.7	14.8	14.3	13.6	14.3	14.2	14.5	14.3	16.6	16.1	10.2	10.4	9.4	7.7	9.1	9.1
$100,000-$249,999[c]	9.6	10.0	9.9	9.7	9.6	9.6	9.9	9.5	10.0	11.6	11.8	10.8	10.9	10.6	10.4	10.1	10.1
$250,000-$499,999[d]	2.6	2.9	3.3	3.3	3.1	2.7	2.7	3.1	3.0	3.8	3.6	3.4	3.6	3.6	4.7	4.0	4.0
$500,000 and over	1.2	1.3	1.4	1.2	1.3	1.3	1.5	1.8	2.0	2.2	2.2	2.2	2.3	2.3	3.1	2.6	2.6
Percentage distribution of annual gross cash income from farming by sales category																	
Under $20,000	6.0	6.0	5.6	6.0	6.0	5.8	5.6	5.3	4.9	5.6	5.0	5.3	6.2	5.4	4.7	5.4	5.4
$20,000-$49,999[a]	5.6	6.3	4.9	5.5	5.6	5.1	5.3	5.3	4.8	5.7	5.0	6.2	6.6	5.5	5.0	5.6	5.6
$50,000-$99,999[b]	17.0	17.5	15.5	16.3	15.2	15.5	14.9	13.9	12.9	15.9	15.5	11.0	11.2	9.8	7.5	9.1	9.1
$100,000-$249,999[c]	25.0	27.6	24.1	25.1	24.4	24.3	24.2	20.9	21.1	23.8	24.5	22.8	21.9	21.0	19.2	19.1	19.1
$250,000-$499,999[d]	14.9	16.2	17.4	18.3	16.6	14.7	14.4	14.7	13.8	16.0	15.9	16.3	14.9	16.3	19.6	15.9	15.9
$500,000 and over	31.5	26.4	32.5	28.8	32.3	34.6	35.5	39.8	42.5	33.1	34.1	38.5	39.3	42.0	44.0	44.9	44.9
Net cash income per farm from farm sources as a percentage of mean money income per U.S. household[e]																	
Under $20,000	−2.9	−3.7	−4.2	−2.1	−1.4	−1.5	−1.5	−1.2	−2.0	−2.8	−6.1	−3.9	−4.8	−6.7	−5.9	−2.2	−4.7
$20,000–$49,999[a]	24.0	22.4	15.3	29.8	30.9	31.5	29.4	24.0	19.6	34.0	18.8	18.9	30.2	10.4	18.0	19.9	12.6
$50,000–$99,999[b]	70.2	69.9	52.0	79.8	78.3	84.5	78.9	63.5	58.8	72.0	64.3	79.6	76.7	62.0	52.5	70.8	74.6
$100,000–$249,999[c]	183.0	194.0	160.0	206.0	196.0	225.0	209.0	169.0	167.0	142.0	149.0	130.0	106.0	101.0	96.0	119.0	128.0
$250,000–$499,999[d]	428.0	423.0	368.0	450.0	415.0	487.0	463.0	368.0	384.0	327.0	331.0	279.0	213.0	300.0	260.0	235.0	270.0
$500,000 and over	2,004.0	1,584.0	1,729.0	1,909.0	1,812.0	2,194.0	1,722.0	1,645.0	1,545.0	1,062.0	1,408.0	1,441.0	1,247.0	1,344.0	1,057.0	1,178.0	1,123.0

[a]This sales category is $20,000–$39,999 for 1950–92.

[b]This sales category is $40,000–$99,999 for 1950–92.

[c]This sales category is $100,000 and over for 1960 and 1965, and $100,000–$199,999 for 1970 through 1980.

[d]This sales category is $200,000–$499,999 for 1983 and earlier.

[e]Net cash income includes net farm income, off-farm income, government payments, and farm-related cash income. Prior to 1977 this series was estimated as gross cash income less total "production" expenses. Beginning in 1977 it is gross cash income less total "cash" expenses. Beginning in 1977 it is gross cash income less total "cash" expenses.

[f]Data not available less total "production" expenses.

Table A3 Income of Farm Families, 1950–98

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Net farm income																
Total ($bil)	13,648	15,934	14,961	12,980	12,373	11,305	11,254	11,085	13,168	10,713	11,212	11,956	12,063	11,770	10,489	12,900
Per farm household ($)	2,366	2,845	2,754	2,465	2,428	2,294	2,363	2,413	2,975	2,515	2,741	3,189	3,207	3,398	3,136	3,851
Off-farm income[a]																
Total ($bil)	6,300	6,600	6,900	6,600	6,200	6,500	6,800	7,000	6,000	7,700	8,482	9,163	9,904	11,020	11,637	12,727
Per farm household ($)	1,092	1,179	1,270	1,254	1,216	1,319	1,428	1,524	1,356	1,808	2,073	2,444	2,633	3,181	3,479	3,799
Money income of households																
Farm households ($)[b]	2,706	3,114	3,126	3,121	2,861	2,875	3,190	3,090	3,384	3,541	3,927	4,660	4,810	5,450	5,879	6,356
All U.S. households ($)	4,205	4,506	4,703	4,888	4,828	5,039	5,340	5,392	5,462	5,793	5,979	6,159	6,298	6,554	6,818	7,110
Farm as % of all U.S. households	64.4	69.1	66.5	63.9	59.3	57.1	59.7	57.3	62.0	61.1	65.7	75.7	76.4	83.2	86.2	89.4
Farm as % of all U.S. households, excluding government payments	63.2	68.0	65.4	63.0	58.2	56.1	57.6	53.2	57.4	58.4	62.8	69.2	69.0	75.7	76.7	79.1
Farm as % of all U.S. households, excluding government payments and off-farm income	37.2	41.8	38.4	37.4	33.0	30.0	30.8	24.9	32.6	27.1	28.1	29.5	27.2	27.2	25.6	25.6
	Off-farm income and government payments as a percentage of money income of farm families[c]															
Off-farm as % of total	31.6	29.3	31.6	33.7	33.4	36.5	37.7	38.7	31.3	41.8	43.1	43.4	45.1	48.4	52.6	49.7
Government payments as % of total	1.4	1.3	1.3	1.1	1.4	1.3	3.1	5.6	5.7	3.7	3.6	7.1	8.0	7.4	9.9	9.6
	Income from off-farm sources as a percentage of net cash income of farm families from all sources[d]															
Under $20,000	—[i]	—	—	—	—	—	—	—	—	—	63.9	64.6	67.6	71.8	72.1	74.5
$20,000–$49,999[e]	—	—	—	—	—	—	—	—	—	—	20.5	20.0	21.7	24.8	24.9	26.3
$50,000–$99,999[f]	—	—	—	—	—	—	—	—	—	—	19.0	19.7	22.7	27.1	32.0	21.9
$100,000–$249,999[g]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.3
$250,000–$499,999[h]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
$500,000 and over	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Net cash income per farm from farm and off-farm sources as a percentage of mean money income per U.S. household[d]															
Under $20,000	—	—	—	—	—	—	—	—	—	—	56.7	61.3	64.2	66.8	69.9	73.2
$20,000–$49,999[e]	—	—	—	—	—	—	—	—	—	—	137.0	142.5	138.6	133.2	134.9	134.0
$50,000–$99,999[f]	—	—	—	—	—	—	—	—	—	—	240.9	258.6	256.9	253.6	228.5	236.4
$100,000–$249,999[g]	—	—	—	—	—	—	—	—	—	—	449.0	478.0	445.0	413.0	427.0	532.0
$250,000–$499,999[h]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
$500,000 and over	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

[a]Beginning in 1993, aggregate off-farm income is estimated as the income from off-farm sources per farm operator household times the number of farm households. Beginning in 1983, off-farm income by farm size was estimated by the author on the basis of the distribution of off-farm income by farm size in previous years.

[b]Net farm income plus off-farm income less the value of commodities produced and consumed on the farm, rental value of farm dwellings, and net change in farm inventories.

[c]Total income of farm families includes all money and nonmoney income.

[d]Net cash income includes net farm income, off-farm income, government payments, and farm related cash income. Prior to 1977 this series was estimated as gross cash income less total "production" expenses. Beginning in 1977 it is gross cash income less total "cash" expenses.

[e]Sales category of $20,000–$39,999 for 1950–92.

[f]Sales category of $40,000–$99,999 for 1950–92.

[g]Sales category of $100,000 and over in 1960 and 1965, and $100,000–$199,999 for 1970 through 1980.

[h]Sales category of $200,000–$499,999 for 1983 and earlier.

[i]Data not available.

Table A3 (*Continued*)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Net farm income																
Total ($bil)	13,962	12,338	12,323	14,292	14,366	15,012	19,457	34,357	27,266	25,547	20,176	19,882	25,197	27,416	16,135	26,879
Per farm household ($)	4,344	4,205	4,186	4,980	5,230	5,678	7,591	13,837	11,351	11,002	9,003	9,200	12,114	13,708	8,408	14,214
Off-farm income[a]																
Total ($bil)	13,882	14,495	15,466	16,612	17,617	19,110	21,265	24,714	28,135	23,901	26,681	26,120	29,704	33,840	34,694	35,800
Per farm household ($)	4,319	4,940	5,253	5,788	6,413	7,228	8,297	9,953	11,713	10,293	11,906	12,087	14,281	16,920	18,079	18,932
Money income of households																
Farm households ($)[b]	7,624	7,734	8,189	9,418	10,169	10,781	13,757	20,299	21,182	17,039	18,344	16,895	21,027	22,840	23,372	22,411
All U.S. households ($)	7,693	7,989	8,760	9,544	10,001	10,383	11,286	12,157	13,094	13,779	14,922	16,100	17,730	19,554	21,063	22,787
Farm as % of all U.S. households	99.1	96.8	93.5	98.7	101.7	103.8	121.9	167.0	161.8	123.7	122.9	104.9	118.6	116.8	111.0	98.4
Farm as % of all U.S. households, excluding government payments	85.9	83.7	80.1	84.8	88.1	92.4	108.2	158.3	160.1	121.1	120.7	99.7	110.4	113.3	107.8	93.9
Farm as % of all U.S. households, excluding government payments and off-farm income	29.7	21.8	20.1	24.2	24.0	22.8	34.7	76.5	70.6	46.4	40.9	24.6	29.8	26.8	21.9	10.8
	Off-farm income and government payments as a percentage of money income of farm families[c]															
Off-farm as % of total	49.9	54.0	55.7	53.8	55.1	56.0	52.2	41.8	50.8	48.3	56.9	56.8	54.1	55.2	68.3	57.1
Government payments as % of total	11.8	11.5	12.5	12.3	11.6	9.2	9.7	4.4	1.0	1.6	1.6	4.0	5.5	2.2	2.5	3.1
	Income from off-farm sources as a percentage of net cash income of farm families from all sources[d]															
Under $20,000	75.6	80.7	81.9	100.0	102.8	107.8	104.5	102.9	110.6	124.7	127.8	139.1	99.3	103.4	108.0	111.4
$20,000–$49,999[e]	24.1	28.3	28.5	25.1	27.6	31.4	30.7	33.6	44.2	58.5	71.6	87.6	51.2	60.9	64.7	77.3
$50,000–$99,999[f]	18.8	22.1	22.1	16.8	18.0	19.4	17.8	17.4	23.9	26.5	33.9	41.4	25.0	31.1	32.2	39.7
$100,000–$249,999[g]	14.7	20.8	20.2	22.2	22.4	23.3	20.0	17.9	21.5	15.9	18.7	21.0	14.4	16.1	16.6	19.0
$250,000–$499,999[h]	—[i]	—	—	—	—	—	—	—	—	8.9	10.5	11.7	9.2	9.9	10.2	10.5
$500,000 and over	—	—	—	—	—	—	—	—	—	2.0	2.5	2.8	2.9	3.7	3.7	3.5
	Net cash income per farm from farm and off-farm sources as a percentage of mean money income per U.S. household[d]															
Under $20,000	76.0	74.3	74.0	61.6	62.2	63.4	69.0	79.8	80.1	64.3	65.1	54.9	80.7	80.0	73.3	68.3
$20,000–$49,999[e]	145.5	124.1	120.9	133.9	122.1	115.1	122.7	124.6	103.6	72.1	66.4	52.8	99.1	89.5	81.9	67.2
$50,000–$99,999[f]	256.3	207.5	196.3	244.3	221.4	204.6	215.7	224.9	173.3	139.2	119.0	93.2	167.6	143.1	129.4	99.1
$100,000–$249,999[g]	638.0	431.0	418.0	525.0	511.0	474.0	510.0	554.0	483.0	328.0	274.0	215.0	319.0	285.0	263.0	218.0
$250,000–$499,999[h]	—	—	—	924.0	868.0	797.0	896.0	1,002.0	883.0	748.0	615.0	484.0	614.0	570.0	512.0	460.0
$500,000 and over	—	—	—	5,993.0	6,282.0	4,673.0	4,814.0	5,433.0	4,977.0	4,391.0	3,798.0	3,393.0	3,505.0	3,049.0	2,526.0	2,299.0

[a]Beginning in 1993, aggregate off-farm income is estimated as the income from off-farm sources per farm operator household times the number of farm households. Beginning in 1983, off-farm income by farm size was estimated by the author on the basis of the distribution of off-farm income by farm size in previous years. (*Continued*)

[b]Net farm income plus off-farm income less the value of commodities produced and consumed on the farm, rental value of farm dwellings, and net change in farm inventories.

[c]Total income of farm families includes all money and nonmoney income.

[d]Net cash income includes net farm income, off-farm income, government payments, and farm related cash income. Prior to 1977 this series was estimated as gross cash income less total "production" expenses. Beginning in 1977 it is gross cash income less total "cash" expenses.

[e]Sales category of $20,000–$39,999 for 1950–92.

[f]Sales category of $40,000–$99,999 for 1950–92.

[g]Sales category of $100,000 and over in 1960 and 1965, and $100,000–$199,999 for 1970 through 1980.

[h]Sales category of $200,000–$499,999 for 1983 and earlier.

[i]Data not available.

Table A3 (*Continued*)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Net farm income																	
Total ($bil)	23,841	14,248	26,105	28,767	31,000	39,721	38,000	47,907	44,796	38,526	48,047	43,650	49,235	37,212	54,926	48,625	44,088
Per farm household ($)	12,797	7,769	14,455	16,179	17,175	23,310	22,565	29,830	27,365	23,463	29,769	27,332	31,765	23,977	35,436	30,971	28,444
Off-farm income[a]																	
Total ($bil)	36,428	37,019	39,179	55,160	54,547	56,319	62,812	56,039	54,455	51,950	57,670	56,547	59,043	61,569	65,805	72,782	81,573
Per farm household ($)	19,553	20,185	21,694	31,024	30,220	33,051	37,299	34,894	33,265	31,638	35,731	35,408	38,092	39,671	42,455	46,358	52,628
Money income of households																	
Farm households ($)[b]	25,443	26,463	29,579	45,321	45,581	54,410	58,139	56,952	53,588	50,491	58,219	60,511	58,333	60,491	66,090	70,185	74,439
All U.S. households ($)	24,309	25,401	27,464	29,066	30,759	32,410	34,017	36,520	37,403	37,922	38,840	41,428	43,133	44,938	47,123	49,692	52,000
Farm as % of all U.S. households	104.7	104.2	107.7	155.9	148.2	167.9	170.9	155.9	143.3	133.1	149.9	146.1	135.2	134.6	140.3	141.2	143.2
Farm as % of all U.S. households, excluding government payments	97.0	84.2	90.7	141.0	126.9	137.6	145.6	137.4	128.1	120.0	135.3	125.8	123.5	124.2	130.2	131.6	128.9
Farm as % of all U.S. households, excluding government payments and off-farm income	16.5	4.8	11.7	34.3	28.7	35.6	36.0	41.8	39.1	36.5	43.3	40.3	35.1	35.9	40.1	38.3	26.8
	Off-farm income and government payments as a percentage of money income of farm families[c]																
Off-farm as % of total	60.4	72.2	60.0	65.7	63.8	58.6	62.3	53.9	54.9	57.4	54.6	56.4	54.5	62.3	54.5	59.9	64.9
Government payments as % of total	5.8	18.1	12.9	9.2	13.8	17.4	14.4	10.5	9.4	9.1	8.7	13.4	7.3	7.3	6.1	6.2	9.7
	Income from off-farm sources as a percentage of net cash income of farm families from all sources[d]																
Under $20,000	104.1	105.2	106.0	102.2	101.5	101.8	101.8	101.5	102.2	103.1	106.8	105.2	106.6	109.7	108.3	102.8	106.6
$20,000–$49,999[e]	68.2	67.0	77.2	71.6	66.0	71.1	72.1	73.6	81.3	66.0	77.4	72.7	65.2	84.4	78.3	74.5	80.8
$50,000–$99,999[f]	34.9	34.0	41.2	43.6	39.4	38.3	40.3	44.7	53.5	41.9	44.3	47.7	48.6	56.2	65.3	55.5	52.1
$100,000–$249,999[g]	18.1	16.4	19.8	17.8	18.9	19.1	20.8	20.7	22.5	19.8	8.1	9.1	11.0	11.7	12.7	11.3	9.8
$250,000–$499,999[h]	9.6	8.7	10.3	10.3	12.0	14.1	15.2	15.5	16.2	14.0	11.7	13.1	16.0	11.8	10.7	14.1	11.6
$500,000 and over	3.4	3.5	3.0	4.0	5.1	3.8	4.5	3.8	4.4	5.3	5.9	5.4	5.8	5.4	5.2	6.0	5.8
	Net cash income per farm from farm and off-farm sources as a percentage of mean money income per U.S. household[d]																
Under $20,000	71.4	71.5	69.5	94.9	92.9	87.0	83.6	82.4	92.1	90.8	89.4	74.2	73.1	69.6	70.5	80.4	71.2
$20,000–$49,999[e]	75.5	68.0	67.1	104.9	90.7	109.0	105.3	91.0	104.9	99.9	83.0	69.5	87.0	66.6	83.0	78.0	65.9
$50,000–$99,999[f]	107.9	105.9	88.3	141.4	129.3	136.9	132.0	114.8	126.6	123.9	115.5	152.3	149.2	141.7	151.5	159.1	155.6
$100,000–$249,999[g]	223.0	232.0	199.0	251.0	242.0	278.0	264.0	213.0	215.0	177.0	163.0	143.0	119.0	114.0	110.0	134.0	141.0
$250,000–$499,999[h]	474.0	463.0	411.0	501.0	471.0	566.0	547.0	436.0	458.0	380.0	375.0	321.0	253.0	340.0	292.0	273.0	306.0
$500,000 and over	2,074.0	1,641.0	1,782.0	1,988.0	1,909.0	2,280.0	1,803.0	1,711.0	1,617.0	1,122.0	1,496.0	1,523.0	1,324.0	1,421.0	1,115.0	1,253.0	1,192.0

[a]Beginning in 1993, aggregate off-farm income is estimated as the income from off-farm sources per farm operator household times the number of farm households. Beginning in 1983, off-farm income by farm size was estimated by the author on the basis of the distribution of off-farm income by farm size in previous years.

[b]Net farm income plus off-farm income less the value of commodities produced and consumed on the farm, rental value of farm dwellings, and net change in farm inventories.

[c]Total income of farm families includes all money and nonmoney income.

[d]Net cash income includes net farm income, off-farm income, government payments, and farm related cash income. Prior to 1977 this series was estimated as gross cash income less total "production" expenses. Beginning in 1977 it is gross cash income less total "cash" expenses.

[e]Sales category of $20,000–$39,999 for 1950–92.

[f]Sales category of $40,000–$99,999 for 1950–92.

[g]Sales category of $100,000 and over in 1960 and 1965, and $100,000–$199,999 for 1970 through 1980.

[h]Sales category of $200,000–$499,999 for 1983 and earlier.

[i]Data not available.

Table A4 Farm Acreage and Relative Importance of Cash Receipts from Selected Farm Enterprises, 1950–98

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Farm acreage (mil)	1,202	1,204	1,205	1,206	1,206	1,202	1,197	1,191	1,185	1,183	1,176	1,168	1,159	1,152	1,146	1,140
Percentage harvested	28.0	27.9	28.3	28.3	28.0	27.6	26.4	26.5	26.6	26.7	26.9	25.2	24.7	25.2	25.3	25.5
Cash receipts from farming ($bil)	28.5	32.9	32.5	31.0	29.8	29.5	30.4	29.7	33.5	33.6	34.2	35.2	36.5	37.5	37.3	39.4
% from hogs	11.3	11.8	10.6	11.2	11.6	9.1	8.7	10.3	10.1	8.3	8.4	9.0	8.7	8.1	8.1	9.2
% from beef	19.9	21.3	19.1	15.7	17.1	17.8	17.6	20.0	21.9	23.3	21.5	21.5	22.4	21.6	20.9	22.7
% from dairy	13.1	12.9	14.0	14.1	13.8	14.3	14.8	15.6	13.6	13.7	13.9	14.0	13.3	13.0	13.5	12.8
% from poultry	3.3	3.5	3.4	3.7	3.4	3.6	3.4	3.4	3.4	3.1	3.0	2.7	2.9	2.8	2.9	3.1
% from eggs	5.5	6.3	5.5	6.7	5.5	6.0	6.0	5.7	5.5	4.6	5.1	5.0	4.7	4.7	4.7	4.5
% from feed grains	7.5	6.4	7.0	7.7	8.5	8.7	8.7	8.1	8.7	8.2	8.7	7.9	8.1	9.1	9.2	9.4
% from food grains	6.8	6.1	7.9	7.9	7.8	6.7	7.1	6.3	7.3	6.6	7.2	7.0	6.9	6.8	5.3	5.2
% from wheat	7.2	6.3	8.4	7.7	7.0	6.3	6.5	6.2	7.6	5.9	6.9	6.4	6.1	5.7	4.7	4.5
% from rice	0.7	0.7	0.9	0.9	1.0	0.9	0.8	0.7	0.6	0.7	0.7	0.8	0.9	0.9	1.0	1.0
% from oil crops	3.3	3.0	3.3	3.1	3.2	3.8	3.8	4.0	4.2	3.8	4.0	4.6	4.9	5.2	5.7	5.5
% from soybeans	2.6	2.4	2.5	2.4	2.8	2.8	3.2	3.4	3.5	3.1	3.5	4.4	4.3	4.7	4.9	5.5
% from fruits and nuts	4.2	3.5	3.4	3.9	4.1	4.3	4.5	4.3	4.2	4.5	4.5	4.6	4.3	4.5	4.8	4.2
% from vegetables	5.0	5.3	6.2	5.4	5.2	5.7	6.2	5.8	5.2	5.5	5.8	5.4	5.6	5.3	6.2	6.7
% from tobacco	3.7	3.6	3.4	3.5	3.9	4.2	3.8	3.3	3.0	3.2	3.4	3.8	3.6	3.4	3.8	3.0
% from cotton	8.6	8.7	9.1	10.3	7.7	8.7	8.2	5.9	6.4	8.0	6.9	7.0	7.0	7.6	6.8	5.9
% from nursery & greenhouse	1.7	1.4	1.5	1.5	1.9	1.8	1.8	2.0	1.8	1.9	2.0	1.9	1.9	1.9	2.0	2.1
% from crops	43.4	40.3	43.9	45.4	45.4	45.9	46.2	41.5	42.5	43.8	44.6	44.5	44.7	46.5	46.6	44.4
% from livestock	56.6	59.7	56.1	54.6	54.6	54.1	53.8	58.5	57.5	56.2	55.4	55.5	55.3	53.5	53.4	55.6

(*Continued*)

Table A4 (*Continued*)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Farm acreage (mil)	1,132	1,123	1,115	1,108	1,102	1,097	1,092	1,088	1,084	1,059	1,054	1,048	1,045	1,042	1,039	1,034
Percentage harvested	25.4	26.7	26.5	25.9	26.2	27.6	26.6	29.3	29.9	31.4	31.6	32.4	32.3	33.5	33.9	35.4
Cash receipts from farming ($bil)	43.4	42.8	44.2	48.2	50.5	52.7	61.1	86.9	92.4	88.9	95.4	96.2	112.4	131.5	139.7	141.6
% from hogs	9.6	8.9	8.6	9.8	8.9	7.8	8.7	8.7	7.5	8.9	7.9	7.6	7.8	6.9	6.4	6.9
% from beef	24.0	24.6	25.5	26.1	27.0	28.4	29.8	25.7	19.3	19.7	20.2	21.0	25.1	26.6	22.8	20.9
% from dairy	12.7	13.4	13.5	12.9	12.9	12.9	11.7	9.3	10.2	11.2	12.0	12.2	11.3	11.1	11.7	12.8
% from poultry	3.2	2.9	3.0	3.2	2.9	2.8	2.7	3.2	2.7	3.3	3.1	3.2	3.3	3.1	3.1	3.3
% from eggs	4.8	4.1	4.3	4.6	4.2	3.4	3.0	3.4	3.1	3.2	3.3	3.0	2.6	2.5	2.3	2.6
% from feed grains	10.0	10.3	9.8	9.5	10.1	10.5	9.6	12.2	15.1	13.7	13.8	12.4	10.2	10.7	13.1	12.5
% from food grains	5.5	5.5	4.7	4.6	5.0	4.7	5.7	8.3	9.3	9.2	7.5	6.3	5.2	6.9	7.4	8.2
% from wheat	4.9	4.9	4.4	3.7	3.6	4.1	4.5	7.8	7.9	8.5	7.1	4.8	4.5	5.7	6.3	7.0
% from rice	1.0	1.0	1.2	0.9	0.9	0.9	0.9	1.5	1.4	1.2	0.9	1.0	1.0	0.9	1.1	1.2
% from oil crops	6.2	6.5	6.4	6.3	7.1	7.2	7.2	8.7	10.8	8.4	9.9	10.1	11.6	10.9	11.1	9.8
% from soybeans	5.9	5.7	6.1	5.5	6.4	6.8	9.1	10.1	8.7	8.6	7.5	12.5	10.4	11.8	10.2	8.6
% from fruits and nuts	4.0	4.2	4.6	4.5	4.1	4.4	4.2	4.0	3.7	4.0	3.9	4.8	5.1	4.9	4.7	4.7
% from vegetables	6.0	6.3	6.5	5.9	5.6	5.7	5.4	5.0	5.8	6.0	5.5	5.8	5.5	4.9	5.2	6.2
% from tobacco	2.8	3.2	2.7	2.7	2.7	2.5	2.4	1.8	2.3	2.4	2.4	2.4	2.3	1.7	1.9	2.3
% from cotton	3.7	2.6	3.0	2.8	2.5	2.8	3.0	3.2	3.1	2.6	3.6	3.6	3.1	3.3	3.2	2.9
% from nursery & greenhouse	2.0	2.0	1.9	1.9	1.9	1.9	1.8	1.5	1.6	1.9	2.1	2.3	2.3	2.3	2.4	2.6
% from crops	42.4	43.1	42.3	40.7	41.5	42.2	41.8	47.3	55.3	51.5	51.4	50.5	47.3	47.4	51.3	51.2
% from livestock	57.6	56.9	57.7	59.3	58.5	57.8	58.2	52.7	44.7	48.5	48.6	49.5	52.7	52.6	48.7	48.8

Table A4 (*Continued*)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Farm acreage (mil)	1,028	1,023	1,018	1,012	1,005	999	994	991	987	982	979	976	973	972	970	968	964
Percentage harvested	33.0	28.6	32.9	32.6	30.8	28.9	29.1	30.7	31.2	30.9	31.3	30.3	31.6	31.0	32.3	32.8	32.3
Cash receipts from farming ($bil)	142.6	136.8	142.8	144.1	135.4	141.8	151.2	161.2	169.4	167.9	171.3	177.9	181.3	188.1	199.1	207.6	196.8
% from hogs	7.5	7.2	6.8	6.3	7.2	7.3	6.1	5.9	6.8	6.6	5.8	6.2	5.5	5.5	6.3	6.3	4.8
% from beef	20.9	21.1	21.4	20.1	21.3	23.7	24.4	22.9	23.2	23.1	21.8	22.2	20.0	18.1	15.6	17.3	17.1
% from dairy	12.8	13.7	12.6	12.5	13.1	12.5	11.7	12.0	11.9	10.7	11.5	10.8	11.0	10.6	11.4	10.1	12.4
% from poultry	3.1	3.6	4.2	3.9	5.0	4.4	4.9	5.4	4.9	5.0	5.4	5.9	6.3	6.3	7.0	6.8	7.7
% from eggs	2.4	2.5	2.9	2.3	2.6	2.3	2.0	2.4	2.4	2.3	2.0	2.1	2.1	2.1	2.4	2.2	2.2
% from feed grains	12.2	11.4	11.3	15.7	12.6	10.3	9.4	10.6	11.0	11.5	11.7	11.4	11.2	13.0	13.7	13.1	11.7
% from food grains	8.0	7.1	6.8	6.2	4.2	4.1	4.9	5.1	4.4	4.4	4.9	4.6	5.3	5.5	5.4	4.9	4.4
% from wheat	6.9	6.4	6.0	5.5	3.7	3.6	4.2	4.5	3.8	3.7	4.2	4.2	4.3	4.8	4.6	4.1	3.5
% from rice	1.1	0.6	0.8	0.7	0.5	0.5	0.7	0.6	0.6	0.6	0.7	0.4	0.9	0.7	0.8	0.8	0.9
% from oil crops	9.7	9.9	9.6	8.7	7.8	8.0	8.9	7.4	7.2	7.6	7.8	7.4	8.1	8.2	8.2	9.5	8.7
% from soybeans	8.8	8.9	8.4	7.7	6.8	7.1	8.0	6.5	6.3	6.5	6.8	6.6	7.1	7.4	7.4	8.7	7.9
% from fruits and nuts	4.8	4.4	4.7	4.8	5.4	5.7	6.0	5.7	5.6	5.9	5.9	5.8	5.7	5.9	6.0	6.3	6.0
% from vegetables	5.7	6.2	6.4	5.9	6.5	7.0	6.5	7.2	6.8	6.9	6.9	7.7	7.8	8.0	7.3	7.2	7.8
% from tobacco	2.3	2.0	2.0	1.9	1.4	1.3	1.4	1.5	1.6	1.7	1.7	1.7	1.5	1.4	1.4	1.4	1.5
% from cotton	3.1	2.7	2.6	2.6	2.5	3.0	3.0	3.1	3.2	3.1	3.0	3.0	3.7	3.6	3.5	3.1	3.1
% from nursery & greenhouse	2.8	3.3	3.6	3.8	4.4	4.8	4.8	4.9	5.1	5.4	5.4	5.3	5.4	5.5	5.4	5.7	6.2
% from crops	50.7	49.1	48.9	51.6	47.1	46.4	47.4	47.7	47.4	48.9	50.0	49.2	51.4	53.7	53.3	53.5	52.0
% from livestock	49.3	50.9	51.1	48.4	52.9	53.6	52.6	52.2	52.6	51.1	50.0	50.8	48.6	46.3	46.7	46.5	48.0

Table A5 (*Continued*)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Corn	19.8	20.2	19.0	19.0	19.9	21.1	19.8	19.5	20.1	20.3	21.4	21.1	21.3	20.7	20.7	20.4
Barley	3.6	3.1	3.3	3.3	3.4	3.3	3.3	3.2	2.4	2.6	2.5	2.9	2.7	2.2	2.1	2.5
Oats	6.2	5.4	6.0	6.3	6.4	5.2	4.6	4.3	3.9	3.9	3.5	4.0	3.3	2.8	2.5	2.6
Rye	1.4	1.2	1.2	1.4	1.5	1.6	1.2	1.1	0.9	0.8	0.8	0.8	0.9	0.8	0.7	0.7
Grain sorghum	4.5	5.0	4.7	4.7	4.7	5.3	4.5	4.9	4.3	4.6	4.3	4.1	4.0	3.7	3.6	3.7
Soybeans	12.7	13.2	14.0	14.4	14.6	14.1	15.7	17.5	15.8	16.1	14.8	17.0	18.9	20.2	19.3	18.1
Rice	0.7	0.7	0.8	0.7	0.6	0.6	0.6	0.7	0.8	0.8	0.7	0.7	0.9	0.8	0.9	1.0
Wheat	17.2	19.4	18.6	16.4	15.1	15.7	16.3	17.0	20.1	20.9	21.3	19.6	16.8	17.9	20.2	22.0
Cotton	3.3	2.7	3.4	3.9	3.9	3.8	4.5	3.8	3.9	2.6	3.3	3.9	3.7	3.7	3.8	3.8
Tobacco	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3
Hay	22.4	21.1	20.6	20.8	21.3	20.2	20.5	19.4	18.5	18.4	18.1	18.0	18.4	17.6	16.7	16.3
Peanuts	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4
Potatoes	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3
Sugar beets	0.4	0.4	0.5	0.5	0.5	0.4	0.5	0.4	0.4	0.5	0.4	0.4	0.4	0.3	0.3	0.3
Sugar cane	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
All vegetables	1.2	1.2	1.2	1.2	1.1	1.0	1.1	1.1	1.0	1.0	1.0	0.9	1.0	0.9	0.9	0.8

(*Continued*)

Table A5 (*Continued*)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Corn	21.4	17.6	21.5	22.8	22.2	20.6	20.2	21.2	21.8	22.7	23.5	21.3	23.7	21.6	23.2	22.8	23.3
Barley	2.7	3.3	3.4	3.5	3.9	3.5	2.6	2.7	2.4	2.8	2.4	2.3	2.2	2.1	2.1	1.9	1.9
Oats	3.0	3.1	2.4	2.5	2.2	2.4	1.9	2.3	1.9	1.6	1.5	1.3	1.3	1.0	0.8	0.9	0.9
Rye	0.7	0.9	0.9	0.8	0.8	0.8	0.8	0.7	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.4	0.5
Grain sorghum	4.2	3.4	4.6	5.1	4.5	3.6	3.1	3.6	3.0	3.3	3.9	3.0	2.9	2.7	3.8	2.9	2.5
Soybeans	20.5	21.3	19.7	18.7	18.8	19.8	19.9	19.5	18.4	19.1	19.0	19.4	19.8	20.4	20.2	21.7	22.6
Rice	1.0	0.7	0.8	0.8	0.8	0.8	1.0	0.9	0.9	0.9	1.0	1.0	1.1	1.0	0.9	1.0	1.1
Wheat	23.0	20.9	20.0	19.6	19.6	19.4	18.4	20.4	22.5	19.1	20.5	21.2	20.1	20.2	20.1	19.7	18.9
Cotton	2.9	2.5	3.1	3.1	2.7	3.4	4.1	3.0	3.7	4.2	3.5	4.3	4.3	5.2	4.0	4.1	3.4
Tobacco	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.2
Hay	17.6	20.4	18.3	18.3	20.1	20.8	22.4	20.6	19.8	20.4	19.2	20.2	19.1	19.8	19.5	19.2	19.3
Peanuts	0.4	0.5	0.5	0.4	0.5	0.5	0.6	0.5	0.6	0.7	0.5	0.6	0.5	0.5	0.4	0.4	0.5
Potatoes	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.5	0.5	0.4	0.4
Sugar beets	0.3	0.4	0.3	0.3	0.4	0.4	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.5
Sugar cane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
All vegetables	0.6	0.7	0.7	0.7	0.7	0.8	0.9	0.9	0.9	0.9	1.1	1.1	1.1	1.1	1.1	1.0	1.1

Table A6 Farm Assets, Farm Debts, and Land Value in the United States, and Cash Rent Relative to Land Value in Iowa, 1950–98

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Assets, debts, and value of land																
Total farm assets ($bil)	111	122	133	129	133	137	146	155	169	173	174	181	189	197	204	221
Assets per farm ($)	20	22	26	26	28	29	32	35	40	42	44	47	51	55	59	66
Farm debt-asset ratio (%)	9.8	10.3	10.0	10.0	10.4	11.0	10.9	11.1	11.3	12.4	12.9	13.3	14.1	15.1	15.8	16.2
Farm debt-equity ratio (%)	9.8	10.1	11.1	11.1	11.6	12.4	12.2	12.5	12.8	14.1	14.8	15.3	16.5	17.7	18.7	19.4
Value farm land ($/acre)	48	54	60	61	60	62	63	72	79	83	86	87	91	93	96	99
Cash rent for farms in Iowa as a percentage of value of land and buildings on farms in Iowa[a]	8.1	8.4	8.2	8.6	9.0	9.0	9.6	9.6	8.8	8.9	9.1	9.6	10.0	10.3	10.5	11.2
Interest on 10-year securities																
Nominal rate of interest	2.3	2.5	2.6	2.8	2.4	2.8	3.2	3.7	3.3	4.3	4.1	3.9	4.0	4.0	4.2	4.3
Real rate of interest[b]	−13.1	1.1	2.3	2.7	2.2	2.9	2.9	3.0	2.7	4.2	3.7	3.7	3.7	3.7	3.9	3.9

[a]Cash rent for farms is available only for 1950–94. Here cash rent for farms in Iowa was estimated for 1995–98 based on the 1967–94 relationship between cash rent for cropland in Iowa and cash rent for farms in Iowa.

[b]Nominal rate adjusted for inflation using the CPI (1990–92 = 100).

(*Continued*)

Table A6 (*Continued*)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Assets, debts, and value of land																
Total farm assets ($bil)	234	246	257	267	279	302	340	418	449	511	591	652	767	898	983	982
Assets per farm ($)	78	84		89	95	104	119	148	161	203	237	265	315	369	403	403
Farm debt-asset ratio (%)	16.8	17.2	17.1	17.4	17.5	17.6	17.3	16.2	16.9	16.6	16.3	17.0	16.6	16.9	17.0	18.6
Farm debt-equity ratio ($)	20.1	20.7	20.6	21.0	21.2	21.4	20.9	19.3	20.3	20.0	19.4	20.5	19.9	20.3	20.4	22.8
Value of farm land ($/acre)	109	124	135	148	157	166	179	202	253	288	338	403	450	537	633	706
Cash rent for farms in Iowa as a percentage of value of land and buildings on farms in Iowa[a]	11.2	10.0	10.1	10.3	10.2	10.2	10.2	9.7	10.1	9.4	8.5	7.1	7.0	6.5	5.9	5.7
Interest on 10-year securities																
Nominal rate of interest	4.9	5.1	5.7	6.7	7.3	6.2	6.2	6.8	7.6	8.0	7.6	7.4	8.4	9.4	11.5	13.9
Real rate of interest[b]	4.2	4.3	4.6	5.2	5.7	4.8	5.2	4.8	3.8	4.5	5.2	4.6	4.9	3.8	4.0	7.2

[a]Cash rent for farms is available only for 1950–94. Here cash rent for farms in Iowa was estimated for 1995–98 based on the 1967–94 relationship between cash rent for cropland in Iowa and cash rent for farms in Iowa.

[b]Nominal rate adjusted for inflation using the CPI (1990–92 = 100).

Table A6 (*Continued*)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Assets, debts, and value of land																	
Total farm assets ($bil)	945	943	857	773	724	773	801	830	848	844	868	910	936	967	1,004	1,052	1,064
Assets per farm ($)	392	396	367	337	322	349	364	381	395	399	412	413	426	440	458	480	486
Farm debt-asset ratio (%)	20.0	20.3	22.6	23.0	21.7	18.7	17.4	16.5	16.2	16.5	16.0	15.6	15.7	15.6	15.5	15.7	16.2
Farm debt-equity ratio (%)	25.0	25.4	29.2	29.8	27.7	23.0	21.1	19.8	19.3	19.8	19.1	18.5	18.6	18.5	18.4	18.7	19.4
Value of farm land ($/acre)	713	682	686	592	512	469	491	525	550	576	583	605	640	680	728	770	774
Cash rent for farms in Iowa as a percentage of value of land and buildings on farms in Iowa[a]	6.3	7.0	8.1	10.4	11.3	11.6	10.5	10.1	10.4	10.0	10.3	9.9	9.2	8.1	7.9	7.7	7.2
Interest on 10-year securities																	
Nominal rate of interest	13.0	11.1	12.4	10.6	7.7	8.4	8.9	8.5	8.6	7.9	7.0	5.9	7.1	6.6	6.4	6.3	5.3
Real rate of interest[b]	8.5	8.6	9.0	7.7	6.1	5.3	5.2	4.1	3.4	3.7	3.9	2.7	4.3	3.4	3.0	3.6	3.4

[a]Cash rent for farms is available only for 1950–94. Here cash rent for farms in Iowa was estimated for 1995–98 based on the 1967–94 relationship between cash rent for cropland in Iowa and cash rent for farms in Iowa.

[b]Nominal rate adjusted for inflation using the CPI (1990–92 = 100).

Table A7 Net Farm Income and Selected Farm Expenses as a Percentage of Gross Cash Farm Income, 1950–98

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Percentage of gross cash farm income																
Net farm income	41.2	41.6	39.6	37.7	36.2	33.8	33.1	31.9	33.8	28.3	29.1	29.5	28.5	27.1	24.8	27.7
Total production expenses	8.8	58.4	60.4	62.3	63.8	66.2	66.9	68.1	66.2	71.7	70.9	70.5	71.5	72.9	75.2	72.3
Fertilizer and lime expenses	2.6	2.5	2.9	3.2	3.3	3.3	3.2	3.1	2.9	3.3	3.2	3.3	3.4	3.9	4.2	4.0
Pesticide expenses	0.5	0.5	0.5	0.4	0.5	0.6	0.8	0.6	0.6	0.8	0.8	0.8	0.9	0.9	1.0	1.0
Labor expenses	8.5	7.6	7.6	7.9	7.6	7.8	7.8	7.9	7.3	7.7	7.9	7.9	7.8	7.8	8.2	7.7
Feed expenses	9.9	10.8	11.5	10.9	11.4	11.6	11.5	11.6	11.7	12.5	11.8	11.7	12.3	13.1	13.0	12.2
Livestock expenses	6.1	6.4	5.1	3.8	4.6	4.6	4.7	5.6	6.9	7.1	6.5	6.7	7.3	6.7	5.7	6.3
Depreciation expenses	8.1	8.2	8.8	10.0	10.5	11.1	11.0	11.2	10.3	11.2	11.2	10.8	10.7	10.8	11.6	11.0
Machine repairs	3.5	3.5	3.9	4.2	4.1	4.4	4.7	4.9	4.5	4.8	4.5	4.0	3.9	3.7	3.7	3.3
Building repairs	1.9	1.8	2.0	2.1	2.1	2.2	2.2	2.2	1.9	2.2	2.0	2.0	2.0	1.9	2.0	1.8
Fuel and oil	3.6	3.3	3.4	3.9	4.0	4.2	4.2	4.2	3.7	3.8	3.8	3.7	3.6	3.5	3.7	3.4
Electricity expenses	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.5
Interest	1.7	1.7	1.9	2.1	2.2	2.4	2.5	2.7	2.6	3.0	3.3	3.3	3.5	3.8	4.3	4.3
Building expenses[a]	4.6	4.2	4.3	4.4	4.2	4.1	4.1	4.1	3.5	4.4	4.4	4.3	4.3	4.3	4.5	4.1
Machine and equipment purchases	4.3	4.0	4.1	4.1	3.8	3.8	3.4	3.3	4.0	4.6	3.8	3.6	3.6	4.1	4.5	4.8

[a]New construction, additions, and major improvements to existing buildings.

Table A7 (*Continued*)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Percentage of gross cash farm income																
Net farm income	27.7	24.4	23.8	25.3	24.4	24.2	27.3	34.7	27.8	25.4	19.6	18.3	19.6	18.2	10.8	16.2
Total production expenses	72.3	75.6	76.2	74.7	75.6	75.8	72.7	65.3	72.2	74.6	80.4	81.7	80.4	81.8	89.2	83.8
Fertilizer and lime expenses	4.2	4.6	4.5	3.9	4.0	4.1	3.7	3.4	6.0	6.5	6.1	5.8	5.0	4.7	6.4	5.7
Pesticide expenses	1.1	1.6	1.6	1.6	1.6	1.8	1.9	1.4	1.5	1.8	2.0	1.8	2.1	2.3	2.4	2.5
Labor expenses	7.3	7.4	7.6	7.4	7.4	7.0	6.4	5.2	6.2	5.9	6.6	6.6	6.4	6.0	6.2	5.4
Feed expenses	12.7	13.2	12.3	12.6	13.6	13.0	11.8	13.4	14.8	12.8	14.0	12.8	12.5	12.8	14.0	12.5
Livestock expenses	7.0	6.8	7.1	7.5	7.4	8.2	9.4	8.2	5.2	4.9	5.7	6.5	7.9	8.6	7.1	5.4
Depreciation expenses	10.7	11.4	12.0	11.7	11.7	11.9	11.1	9.0	10.7	12.3	13.4	14.2	13.2	12.8	14.4	14.2
Machine repairs	3.3	3.5	3.6	3.3	3.2	3.3	3.0	2.4	3.0	3.4	3.8	3.9	3.5	3.4	3.5	3.2
Building repairs	1.7	1.9	1.7	1.7	1.6	1.5	1.3	1.0	1.0	1.1	1.2	1.4	1.3	1.1	1.3	1.0
Fuel and oil	3.2	3.3	3.2	3.0	2.9	2.8	2.4	1.9	2.7	3.3	3.9	4.0	3.6	3.7	5.3	5.2
Electricity expenses	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.6	0.8	1.0	1.1	1.0	1.0	1.1
Interest	4.4	4.9	5.1	5.1	5.4	5.4	5.2	4.5	5.5	6.0	6.8	7.5	7.6	8.3	10.5	11.5
Building expenses[a]	4.1	4.6	4.1	4.1	4.0	4.0	3.3	3.1	4.5	4.7	4.9	5.4	5.4	4.6	4.7	3.6
Machine and equipment purchases	4.9	5.9	4.8	4.5	4.9	4.4	4.5	4.6	4.9	4.8	5.2	5.2	5.6	5.3	4.7	3.9

[a]New construction, additions, and major improvements to existing buildings.

(*Continued*)

Table A7 (*Continued*)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Percentage of gross cash farm income																	
Net farm income	14.6	9.3	15.3	17.7	19.8	23.5	21.6	24.8	22.6	20.1	23.5	21.4	22.8	17.7	23.3	20.4	18.9
Total production expenses	85.8	91.2	83.5	81.4	80.0	77.5	79.6	76.1	77.2	79.9	74.5	78.7	77.2	82.3	76.7	79.6	81.1
Fertilizer and lime expenses	4.9	4.6	4.9	4.6	4.4	3.8	4.4	4.2	4.1	4.5	4.1	4.1	4.2	4.8	4.6	4.6	4.6
Pesticide expenses	2.6	2.5	2.8	2.7	2.8	2.7	2.4	2.6	2.7	3.3	3.2	3.3	3.3	3.7	3.6	3.8	3.9
Labor expenses	5.7	5.8	5.5	6.1	6.1	5.9	6.2	6.2	7.1	7.2	6.8	7.4	7.1	7.7	7.4	7.8	8.3
Feed expenses	11.4	13.4	11.4	10.4	11.2	10.3	11.5	10.8	10.3	10.1	9.8	10.5	10.5	11.3	10.7	10.6	10.7
Livestock expenses	5.9	5.8	5.6	5.6	6.2	7.0	7.4	6.7	7.4	7.4	6.6	7.2	6.2	5.9	4.8	5.8	5.4
Depreciation expenses	14.8	15.5	12.3	11.9	11.5	10.2	10.0	9.4	9.1	9.5	8.9	9.0	8.6	9.0	8.2	8.1	8.3
Machine repairs	2.8	3.1	2.9	3.0	3.1	3.0	3.3	3.4	3.2	3.3	2.9	2.9	2.8	3.0	2.6	2.8	2.8
Building repairs	1.1	1.1	0.9	0.9	1.0	1.0	1.1	0.9	1.1	1.2	1.2	1.2	1.2	1.3	1.2	1.3	1.3
Fuel and oil	4.7	4.7	4.3	4.0	3.4	2.9	2.7	2.5	2.9	2.9	2.6	2.6	2.5	2.6	2.5	2.6	2.4
Electricity expenses	1.2	1.3	1.2	1.2	1.1	1.3	1.3	1.4	1.3	1.4	1.3	1.3	1.2	1.4	1.3	1.3	1.2
Interest	12.8	13.4	11.9	10.9	10.0	8.6	7.9	7.0	6.6	6.1	5.2	5.1	5.3	6.0	5.5	5.7	5.8
Building expenses[a]	3.3	2.9	2.7	2.0	1.8	2.1	2.1	1.9	2.4	2.1	1.9	2.3	2.3	2.1	2.3	2.3	2.6
Machine and equipment purchases	3.1	3.1	2.8	2.0	2.0	2.5	2.4	2.6	2.8	2.8	2.5	2.7	2.4	2.4	2.3	2.3	2.5

[a]New construction, additions, and major improvements to existing buildings.

Table A8 Real Prices of Selected Agricultural Commodities and Real Prices Paid by Farmers, 1950–98

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Prices received deflated by CPI (1990–92 = 100)																
Wheat ($/bu)	11.26	11.01	10.71	10.37	10.70	10.03	9.83	9.32	8.22	8.21	7.98	8.31	9.17	8.21	6.00	5.82
Corn ($/bu)	8.56	8.66	7.79	7.52	7.21	6.84	6.44	5.36	5.26	4.90	4.59	4.99	5.03	4.92	5.12	5.00
Oats ($/bu)	4.45	4.28	4.05	3.76	3.58	3.04	3.44	2.95	2.72	3.03	2.75	2.91	2.79	2.75	2.76	2.67
Barley ($/bu)	6.70	6.58	7.02	5.95	5.50	4.66	4.94	4.30	4.23	4.01	3.85	4.45	4.13	3.99	4.16	4.39
Rye ($/bu)	7.38	7.93	8.81	6.56	6.10	5.37	5.79	5.22	4.79	4.66	4.03	4.58	4.27	4.79	4.55	4.22
Grain sorghum ($/bu)	5.91	6.89	8.09	6.71	6.36	4.96	5.74	4.69	4.70	4.01	3.85	4.58	4.58	4.35	4.60	4.22
Soybeans ($/bu)	13.91	14.25	13.93	13.83	12.41	11.25	10.88	10.00	9.39	9.14	9.77	10.35	10.52	11.14	11.47	10.94
Cotton (cents/lb)	225	198	179	163	172	162	160	145	155	149	138	150	144	133	123	90
Rice ($/cwt)	28.66	25.16	30.07	26.39	23.06	24.37	24.25	24.69	21.98	21.41	20.86	23.33	22.65	22.23	21.45	21.24
Sugarbeets ($/ton)	63.06	61.06	61.48	58.97	54.49	56.74	59.38	54.11	54.96	52.24	53.19	50.84	57.53	54.13	51.66	51.27
Peanuts (cents/lb)	61	54	56	56	62	59	56	50	50	45	46	49	49	50	49	49
Tobacco, burley (cents/lb)	276	267	258	267	251	297	317	291	310	283	295	302	263	263	264	289
Tobacco, flue-cured (cents/lb)	308	273	258	268	266	267	257	268	273	272	277	292	270	257	256	278
Potatoes ($/cwt)	8.45	13.99	16.44	6.66	10.85	8.97	10.08	9.23	6.15	10.59	9.17	6.17	7.91	7.90	15.32	10.90
Choice steers ($/cwt)	162.61	182.25	165.83	115.76	118.31	112.26	104.74	109.23	123.95	125.61	115.45	107.99	118.88	102.97	97.24	108.23
Choice veal calves ($/cwt)	180.18	203.55	174.18	127.10	116.04	131.71	119.76	125.60	150.31	149.25	132.97	131.64	139.33	128.66	118.21	120.64
Lamb ($/cwt)	155.01	166.54	113.47	93.34	96.17	95.64	92.32	96.14	98.64	87.22	82.07	71.72	80.22	80.30	87.13	98.23
Barrows and gilts ($/cwt)	103.72	107.31	92.88	111.79	112.26	76.95	73.95	88.36	95.12	68.28	73.18	77.89	75.60	68.23	67.03	91.77
Wool (cents/lb)	350	507	277	279	268	217	221	259	171	202	193	195	214	215	233	203
Broilers (cents/lb)	154	149	148	138	117	128	98	91	87	75	77	63	68	65	62	65
Turkeys (cents/lb)	144	136	133	135	134	137	136	113	112	111	116	86	97	99	92	96
Eggs (cents/dozen)	204	249	213	243	185	200	196	173	181	146	165	162	152	153	148	145
Milk, fluid ($/cwt)	24.55	26.20	27.20	24.50	22.45	22.80	23.15	22.95	21.89	21.78	21.50	21.11	20.40	20.10	20.05	19.95
All apples (cents/lb)	16	17	24	5	21	18	22	15	15	18	22	19	19	19	18	19
All grapes ($/ton)	381.76	208.25	204.41	246.06	260.85	218.84	257.98	302.90	317.52	252.33	249.43	251.02	282.25	235.58	275.39	194.31
All lemons ($/box)	20.21	14.72	17.73	19.83	13.77	14.13	15.67	10.97	10.29	9.00	8.80	11.30	9.75	17.75	11.69	14.26
All oranges ($/box)	12.61	10.28	7.68	8.69	9.74	9.78	12.03	10.05	14.42	15.11	12.61	16.34	12.04	15.35	20.45	13.57
All pecans (cents/lb)	162	103	113	83	144	166	92	114	132	152	142	82	158	82	99	77
Indexes of prices received and prices paid (1990–92 = 100) deflated by CPI (1990–92 = 100)																
All commodities	229	249	234	206	197	187	181	179	187	176	173	171	176	170	165	168
All crops	256	268	267	239	238	230	227	211	205	200	200	202	204	209	202	196
All livestock	207	231	204	177	163	157	148	156	170	156	154	149	151	143	136	147
Prices paid	110	113	114	108	107	107	106	107	107	106	107	106	107	106	106	107
CPI (1990–92 = 100)	18	19	20	20	20	20	20	21	21	21	22	22	22	23	23	23

(*Continued*)

Table A8 (*Continued*)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Prices received deflated by by CPI (1990–92 = 100)																
Wheat ($/bu)	6.83	5.65	4.84	4.59	4.65	4.49	5.71	12.08	11.26	8.98	7.51	5.13	5.87	6.56	6.44	5.51
Corn ($/bu)	5.19	4.19	4.21	4.25	4.65	3.62	5.10	7.80	8.31	6.41	5.94	4.52	4.68	4.41	4.45	3.69
Oats ($/bu)	2.81	2.68	2.34	2.18	2.17	2.01	2.34	3.61	4.21	3.68	3.72	2.46	2.50	2.54	2.95	2.81
Barley ($/bu)	4.40	4.06	3.55	3.22	3.36	3.32	3.93	6.54	7.74	6.10	5.37	3.99	4.00	4.28	4.69	3.70
Rye ($/bu)	4.44	4.35	3.98	3.74	3.46	3.02	3.12	5.84	6.91	5.95	5.89	4.59	4.14	3.87	4.35	4.48
Grain sorghum ($/bu)	4.27	4.02	3.71	3.96	3.99	3.49	4.45	6.54	7.63	5.98	4.84	4.08	7.14	7.31	7.69	7.05
Soybeans ($/bu)	11.52	10.12	9.48	8.69	9.97	10.15	14.19	17.36	18.28	12.41	13.31	15.27	13.07	12.82	12.47	9.06
Cotton (cents/lb)	109	89	82	81	77	94	88	138	118	129	153	116	121	116	123	81
Rice ($/cwt)	20.74	20.20	19.50	18.31	18.08	17.79	19.64	33.63	38.38	25.53	16.46	17.78	19.34	16.92	18.28	17.77
Sugarbeets ($/ton)	53.62	54.86	53.82	46.97	51.77	51.61	51.95	90.49	128.85	69.63	50.10	54.20	52.46	63.38	77.75	43.60
Peanuts (cents/lb)	47	46	46	45	45	46	47	50	49	49	48	47	44	39	41	40
Tobacco, burley (cents/lb)	280	292	287	257	253	271	257	284	313	266	272	269	273	271	273	270
Tobacco, flue-cured (cents/lb)	280	264	260	268	252	259	277	269	289	252	263	263	281	262	238	248
Potatoes ($/cwt)	8.55	7.60	8.70	8.28	7.73	6.37	9.81	14.98	11.04	11.30	8.56	8.15	8.06	5.91	7.87	8.09
Choice steers ($/cwt)	107.62	102.76	104.80	108.91	102.69	108.55	116.17	136.17	115.34	112.54	93.30	90.44	108.95	126.66	110.29	95.33
Choice veal calves ($/cwt)	134.06	130.03	132.61	144.23	157.40	154.16	178.57	195.66	137.67	100.91	107.35	107.50	143.63	170.89	124.41	115.22
Lamb ($/cwt)	98.03	89.80	95.16	100.59	92.34	86.80	94.48	107.31	101.87	106.21	111.88	114.89	130.72	125.44	104.60	81.98
Barrows and gilts ($/cwt)	98.41	78.71	74.84	87.68	76.78	61.83	86.59	123.11	96.70	121.90	102.84	91.98	100.94	78.63	65.95	66.37
Wool (cents/lb)	218	162	158	155	124	65	114	253	163	113	157	161	155	161	145	141
Broilers (cents/lb)	64	54	55	56	48	46	46	73	59	66	56	53	55	48	46	43
Turkeys (cents/lb)	97	79	80	83	79	74	72	117	77	88	76	78	87	78	66	57
Eggs (cents/dozen)	164	127	133	148	137	105	100	161	146	132	139	125	109	109	93	94
Milk, fluid ($/cwt)	21.66	22.06	22.11	21.71	21.16	20.74	20.71	22.68	23.84	22.75	23.69	22.31	22.46	22.86	21.78	20.82
All apples (cents/lb)	19	23	24	15	16	16	21	27	23	16	22	24	22	20	14	17
All grapes ($/ton)	232.93	281.59	259.75	268.12	331.93	320.04	535.71	495.26	382.71	358.22	369.75	434.49	276.85	441.20	395.32	443.48
All lemons ($/box)	13.78	13.33	15.02	16.27	16.96	16.69	15.62	13.39	16.99	9.71	13.81	7.97	8.83	12.84	13.36	7.21
All oranges ($/box)	10.39	7.52	12.01	8.99	7.31	8.21	9.32	8.22	7.65	6.94	6.68	7.48	11.53	11.50	7.99	7.91
All pecans (cents/lb)	121	137	146	110	136	111	138	112	130	100	194	129	126	104	129	81
Indexes of prices received and prices paid (1990–92 = 100) deflated by CPI (1990–92 = 100)																
All commodities	176	162	158	155	152	150	160	217	210	184	179	163	173	176	161	149
All crops	194	178	170	159	153	158	161	234	271	222	208	186	185	183	176	166
All livestock	162	147	145	157	148	142	160	203	164	156	153	143	162	168	147	133
Prices paid	109	108	105	104	102	103	106	115	118	119	119	119	121	123	124	122
CPI (1990–92 = 100)	24	25	26	27	29	30	31	33	36	40	42	45	48	53	61	67

Table A8 (*Continued*)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Prices received deflated by CPI (1990–92 = 100)																	
Wheat ($/bu)	4.85	4.78	4.43	3.89	3.00	3.07	4.27	4.07	2.71	2.99	3.13	3.06	3.16	4.05	3.72	2.86	2.21
Corn ($/bu)	3.59	4.37	3.44	2.81	1.86	2.32	2.91	2.58	2.37	2.36	2.00	2.35	2.07	2.89	2.34	2.05	1.62
Oats ($/bu)	2.10	2.21	2.18	1.55	1.50	1.86	2.99	1.63	1.18	1.21	1.28	1.28	1.12	1.49	1.70	1.35	0.92
Barley ($/bu)	3.07	3.37	2.99	2.50	1.99	2.16	3.21	2.65	2.22	2.09	1.97	1.87	1.86	2.57	2.37	2.01	1.62
Rye ($/bu)	3.36	2.96	2.61	2.56	1.83	1.94	2.89	2.25	2.17	2.19	2.30	2.40	2.47	2.58	3.20	3.17	2.07
Grain sorghum ($/bu)	5.63	6.66	5.42	4.35	3.03	3.63	4.65	4.10	3.94	4.00	3.27	3.88	3.48	5.08	3.62	3.34	2.58
Soybeans ($/bu)	8.03	10.67	7.63	6.37	5.92	7.03	8.51	6.23	5.96	5.56	5.38	6.01	5.02	5.99	6.36	5.47	4.45
Cotton (cents/lb)	84	91	77	71	65	77	64	72	71	58	53	55	66	67	60	55	53
Rice ($/cwt)	11.76	11.68	10.50	8.24	4.64	8.69	7.84	8.05	6.96	7.55	5.70	7.50	6.21	8.15	8.62	8.20	7.08
Sugarbeets ($/ton)	49.79	50.42	44.28	42.64	44.46	45.64	47.27	46.08	44.66	38.37	40.05	36.63	35.54	33.93	39.28	32.81	34.97
Peanuts (cents/lb)	35	34	36	31	36	33	32	30	36	28	29	29	26	26	24	24	21
Tobacco, burley (cents/lb)	255	242	245	201	194	187	185	183	182	178	176	170	166	165	166	162	158
Tobacco, flue-cured (cents/lb)	251	242	237	217	189	190	185	183	174	172	167	158	156	159	159	146	146
Potatoes ($/cwt)	6.26	7.93	7.43	4.95	6.23	5.23	6.91	8.06	6.31	4.94	5.34	5.80	5.11	5.66	5.86	4.75	4.36
Choice steers ($/cwt)	90.44	85.00	85.36	72.79	70.22	78.03	81.92	81.33	81.63	73.55	73.25	72.35	63.75	59.01	56.41	56.08	51.19
Choice veal calves ($/cwt)	109.28	99.44	83.54	78.34	75.67	93.80	102.34	99.39	99.28	97.67	86.47	90.08	79.78	65.11	50.52	69.60	68.28
Lamb ($/cwt)	74.68	73.45	78.51	85.40	85.45	92.72	79.28	72.35	57.64	52.02	58.82	60.68	59.35	69.74	76.39	76.36	60.20
Barrows and gilts ($/cwt)	77.97	65.02	63.83	56.48	61.92	62.13	49.68	47.39	56.50	49.93	41.02	43.30	36.64	37.72	46.19	43.47	28.91
Wool (cents/lb)	96	84	104	80	83	110	158	136	83	55	72	48	71	93	61	71	50
Broilers (cents/lb)	38	40	43	38	43	34	38	40	34	31	30	32	32	31	33	32	33
Turkeys (cents/lb)	56	52	64	56	58	42	44	45	41	38	36	35	37	37	37	34	32
Eggs (cents/dozen)	84	83	94	72	76	66	61	75	74	66	55	59	56	56	65	59	55
Milk, fluid ($/cwt)	19.41	18.74	17.78	16.27	15.63	15.13	14.18	14.95	14.43	12.26	12.76	12.10	11.93	11.40	12.80	11.33	12.86
All apples (cents/lb)	14	14	15	15	17	10	15	11	16	18	13	12	12	15	14	13	10
All grapes ($/ton)	326.30	271.19	248.20	216.98	279.88	309.48	305.19	343.70	306.37	310.94	296.05	312.79	294.01	308.16	371.14	362.79	378.05
All lemons ($/box)	5.99	5.98	7.72	8.21	14.80	7.61	11.22	9.57	15.62	15.27	12.32	9.34	10.09	9.94	8.66	10.15	8.50
All oranges ($/box)	9.30	7.97	10.05	11.59	7.81	7.62	8.24	7.75	6.40	8.66	7.19	5.42	5.83	5.42	5.93	5.21	5.10
All pecans (cents/lb)	95	80	81	86	89	63	62	78	126	104	140	55	95	90	55	65	101
Indexes of prices received and prices paid (1990–92 = 100) deflated by CPI (1990–92 = 100)																	
All commodities	132	134	132	115	108	106	114	114	108	100	95	95	92	91	97	90	84
All crops	138	147	145	124	108	103	119	119	107	101	98	96	96	100	109	97	88
All livestock	127	120	119	108	109	109	107	109	109	99	94	94	87	82	86	84	80
Prices paid	121	117	116	108	105	104	104	105	103	100	98	97	97	97	99	100	97
CPI (1990–92 = 100)	71	73	77	79	81	84	87	91	96	100	103	106	109	112	116	118	120

Table A9 Indexes of Prices Received and Paid, and Ratios of Animal Product Prices to Corn Prices, 1950–98

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Index of prices received (1990–92=100)																
Crops	45	51	52	47	47	45	45	44	44	43	44	45	45	47	46	45
Livestock	37	44	40	35	32	31	30	32	36	34	34	33	34	32	31	34
All commodities	41	48	46	41	39	37	36	37	40	38	38	38	39	38	38	39
Index of prices paid (1990–92=100)																
Labor	11	12	13	14	14	14	15	15	16	17	17	18	18	18	19	20
Feed	43	49	52	48	48	44	43	42	41	42	40	41	42	43	43	43
Fertilizer	38	40	41	41	41	41	40	40	40	40	40	40	40	40	40	40
Fuel and energy	19	20	20	20	20	20	21	22	21	22	22	22	22	22	22	22
Tractors and combines	12	13	13	13	13	13	14	14	15	16	16	16	17	17	18	18
All inputs	20	22	22	21	21	21	21	22	23	23	23	23	24	24	24	25
Ratio of prices received to prices paid (1990–92=100)	207	220	206	192	184	175	171	167	175	165	162	162	164	161	155	157
Parity ratio (1910–14=100)	101	107	100	92	88	84	83	82	85	81	80	79	79	78	76	76
CPI (1990–92=100)	18	19	20	20	20	20	20	21	21	21	22	22	22	23	23	23
Livestock-Corn price ratios																
Hog-Corn price ratio	12.1	12.4	11.9	14.9	15.6	11.3	11.5	16.5	18.1	13.9	16.0	15.6	15.0	13.9	13.1	18.4
Steer-Corn price ratio	19.0	21.0	21.3	15.4	16.4	16.4	16.3	20.4	23.6	25.6	25.2	21.6	23.6	20.9	19.0	21.7
Lamb-Corn price ratio	18.1	19.2	14.6	12.4	13.3	14.0	14.3	17.9	18.8	17.8	17.9	14.4	15.9	16.3	17.0	19.7
Broiler-Corn price ratio	18.0	17.2	18.9	18.3	16.2	18.7	15.2	17.0	16.5	15.3	16.9	12.6	13.6	13.2	12.1	12.9
Turkey-Corn price ratio	16.8	15.7	17.1	17.9	18.5	20.0	21.1	21.1	21.3	22.8	25.4	17.2	19.3	20.1	17.9	19.1
Egg-Corn price ratio	23.9	28.7	27.4	32.2	25.6	29.3	30.5	32.3	34.4	29.9	36.0	32.4	30.2	31.1	28.9	29.1
Milk-Corn price ratio	2.6	2.8	3.2	2.9	2.8	3.0	3.2	3.8	3.7	4.0	4.2	3.8	3.7	3.7	3.5	3.6

Table A9 (*Continued*)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Index of prices received (1990–92 = 100)																
Crops	46	44	44	43	44	47	50	77	98	88	87	83	89	98	107	111
Livestock	39	36	37	42	42	42	49	67	60	62	64	64	78	90	89	89
All commodities	42	40	41	42	44	45	49	71	76	73	75	73	83	94	98	100
Index of prices paid (1990–92 = 100)																
Labor	21	23	25	27	30	31	33	36	41	44	48	51	55	60	65	79
Feed	45	44	42	43	44	46	47	70	85	83	83	82	80	89	98	110
Fertilizer	40	40	38	35	36	36	38	41	67	87	74	72	72	77	96	104
Fuel and energy	22	23	23	23	23	24	24	26	36	40	43	46	48	61	86	98
Tractors and combines	19	19	20	22	23	24	25	27	31	38	43	47	51	56	63	70
All inputs	26	27	27	28	29	31	33	38	43	47	50	53	58	66	75	82
Ratio of prices received to prices paid (1990–92 = 100)	162	151	150	150	149	146	150	189	177	155	150	138	143	142	131	122
Parity ratio (1910–14 = 100)	79	73	73	73	72	70	74	91	86	76	71	66	70	71	65	61
CPI (1990–92 = 100)	24	25	26	27	29	30	31	33	36	40	42	45	48	53	61	67
Livestock-Corn price ratios																
Hog-Corn price ratio	18.9	18.8	17.8	20.6	16.5	17.1	17.0	15.8	11.6	19.0	17.3	20.3	21.6	17.8	14.8	18.0
Steer-Corn price ratio	20.7	24.6	24.9	25.6	22.1	30.0	22.8	17.5	13.9	17.6	15.7	20.0	23.3	28.7	24.8	25.8
Lamb-Corn price ratio	18.9	21.5	22.6	23.7	19.8	24.0	18.5	13.8	12.3	16.6	18.8	25.4	27.9	28.4	23.5	22.2
Broiler-Corn price ratio	12.3	12.9	13.1	13.2	10.2	12.8	9.0	9.4	7.1	10.4	9.5	11.7	11.7	11.0	10.3	11.5
Turkey-Corn price ratio	18.6	18.9	19.0	19.5	17.0	20.5	14.1	15.0	9.3	13.7	12.7	17.2	18.7	17.8	14.8	15.5
Egg-Corn price ratio	31.5	30.4	31.5	34.8	29.4	29.1	19.7	20.6	17.6	20.6	23.4	27.5	23.2	24.7	20.9	25.5
Milk-Corn price ratio	3.9	4.9	4.9	4.8	4.3	5.4	3.9	2.8	2.8	3.4	3.9	4.8	4.7	5.1	4.8	5.6

(*Continued*)

Table A9 (*Continued*)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Index of prices received (1990–92 = 100)																	
Crops	98	108	111	98	87	86	104	109	103	101	101	102	105	112	126	115	106
Livestock	90	88	91	86	88	91	93	100	105	99	97	100	95	92	99	99	97
All commodities	94	98	101	91	87	89	99	104	104	100	98	101	100	102	112	107	101
Index of prices paid (1990–92 = 100)																	
Labor	74	76	77	78	81	85	87	95	96	100	105	108	110	114	117	123	129
Feed	99	107	112	95	88	83	104	110	103	98	99	99	105	103	129	125	110
Fertilizer	105	100	103	98	90	86	94	99	97	103	100	97	105	121	125	121	112
Fuel and energy	97	94	93	93	76	76	77	83	100	104	96	93	95	89	102	106	88
Tractors and combines	76	81	85	85	83	85	89	94	96	100	104	107	113	120	125	128	133
All inputs	86	86	89	86	85	87	91	96	99	100	101	103	106	109	115	118	117
Ratio of prices received to prices paid (1990–92 = 100)	109	114	113	106	102	102	109	108	105	100	97	98	94	94	97	91	87
Parity ratio (1910–14 = 100)	56	56	57	53	51	52	54	54	53	51	47	47	45	44	47	43	41
CPI (1990–92 = 100)	71	73	77	79	81	84	87	91	96	100	103	106	109	112	116	118	120
Livestock-Corn price ratios																	
Hog-Corn price ratio	21.7	14.9	18.6	20.1	33.3	26.8	17.0	18.3	23.9	21.1	20.5	18.4	17.7	13.1	19.7	21.2	16.2
Steer-Corn price ratio	25.2	19.4	24.8	25.9	37.8	33.7	28.1	31.5	34.5	31.1	36.6	30.8	30.8	20.5	24.1	27.3	31.5
Lamb-Corn price ratio	20.8	16.8	22.9	30.4	46.0	40.0	27.2	28.0	24.3	22.0	29.4	25.8	28.7	24.2	32.6	37.2	37.1
Broiler-Corn price ratio	10.5	9.1	12.6	13.5	23.0	14.8	13.0	15.5	14.3	13.1	14.9	13.7	15.5	10.6	14.1	15.5	20.2
Turkey-Corn price ratio	15.5	11.8	18.6	19.8	31.4	17.9	15.2	17.3	17.3	15.9	18.2	15.0	18.0	12.7	16.0	16.4	19.5
Egg-Corn price ratio	23.3	19.0	27.5	25.6	41.1	28.3	20.8	29.2	31.1	27.8	27.2	25.2	27.0	19.3	27.7	28.9	33.6
Milk-Corn price ratio	5.3	4.2	5.1	5.7	8.3	6.5	4.8	5.7	6.0	5.2	6.4	5.1	5.8	3.9	5.4	5.5	7.9

Table A10 Farm Output and Farm Inputs Used, 1950–98

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Index of farm output (1992=100)																
Crops	48	49	51	51	50	51	51	51	56	55	59	57	58	60	59	62
Livestock	58	61	62	62	64	66	66	65	66	69	68	72	72	74	76	74
All farm products	48	49	52	52	52	54	54	52	57	58	59	59	60	63	62	64
Index of farm inputs (1992=100)																
Farm labor	335	318	300	279	271	279	268	248	230	232	224	211	206	196	187	182
Fertilizers and pesticides	16	17	19	20	20	21	22	22	23	26	26	29	31	35	38	40
Power and machinery	106	113	119	121	121	122	124	122	122	124	122	118	118	116	118	118
Taxes and interest	93	94	97	98	98	100	100	99	100	106	107	108	110	111	114	114
All farm inputs	117	121	121	120	119	119	117	114	114	115	114	113	113	113	113	112
Hours of farmwork per acre planted	55	50	49	45	44	45	44	42	40	39	39	38	38	36	35	34
Commercial fertilizer use per acre planted (lbs)																
Nitrogen	5.7	6.8	8.0	9.1	10.4	11.1	11.3	12.9	14.0	16.2	16.9	19.6	22.5	25.7	29.2	31.2
Phosphate	11.0	11.6	12.4	12.6	12.6	12.9	13.1	13.9	14.1	15.6	15.9	17.1	18.7	20.1	22.6	23.6
Potash	6.2	7.6	8.9	9.6	10.2	10.6	10.9	11.7	11.9	13.3	13.3	14.1	15.1	16.4	18.3	19.1
Pesticide use/acre planted ($)[a]	1.2	1.0	1.2	1.0	1.0	1.3	1.7	1.3	1.5	1.9	1.9	2.3	2.7	2.8	3.0	3.6
Tractors per 100 acres planted[b]																
Number	1.0	1.0	1.1	1.1	1.2	1.2	1.3	1.4	1.4	1.4	1.4	1.5	1.6	1.6	1.6	1.6
Horsepower	26	28	30	32	34	36	39	42	44	46	47	51	54	55	58	59

[a]Total expenditure on pesticides deflated by the index of prices paid by farmers for all inputs (1990–92=100).

[b]Estimated for census years from census of agriculture, and interpolated for intercensus years.

(*Continued*)

Table A10 (*Continued*)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Index of farm output (1992 = 100)																
Crops	60	63	64	65	63	70	71	75	69	76	75	82	86	92	82	95
Livestock	76	78	78	79	83	83	84	83	83	79	83	83	83	87	90	91
All farm products	62	65	66	66	66	72	71	73	69	74	76	78	81	87	81	92
Index of farm inputs (1992 = 100)																
Farm labor	167	162	157	149	142	137	139	138	138	134	127	127	127	125	122	122
Fertilizers and pesticides	46	54	57	60	62	66	71	74	75	68	79	82	88	101	101	106
Power and machinery	121	125	127	127	125	128	127	132	135	141	144	147	153	153	149	144
Taxes and interest	115	115	115	114	115	114	115	115	116	112	115	112	111	116	112	111
All farm inputs	112	114	113	113	113	113	113	114	114	113	114	116	119	122	120	119
Hours of farmwork per acre planted	31	29	29	28	27	25	26	24	23	22	21	20	21	20	19	18
Commercial fertilizer use per acre planted (lbs)																
Nitrogen	36.4	39.4	45.3	47.8	50.9	53.2	54.5	52.1	56.2	51.8	62.0	61.7	59.2	61.8	64.1	65.7
Phosphate	26.6	28.2	29.8	32.0	31.2	31.4	33.0	31.9	31.3	27.2	31.1	32.6	30.3	32.3	30.5	29.9
Potash	22.0	23.8	25.3	26.7	27.5	27.7	29.4	29.2	31.2	26.8	31.0	33.8	32.9	36.0	35.1	34.8
Pesticide use/acre planted ($)[a]	4.4	5.7	6.1	7.1	7.4	8.5	10.1	9.4	8.6	7.5	8.0	7.9	12.0	14.8	14.0	15.0
Tractors per 100 acres planted[b]																
Number	1.6	1.6	1.6	1.6	1.6	1.5	1.5	1.4	1.4	1.3	1.3	1.3	1.4	1.3	1.3	1.3
Horsepower	62	62	65	68	69	67	71	67	67	67	68	67	89	87	86	85

[a]Total expenditure on pesticides deflated by the index of prices paid by farmers for all inputs (1990–92 = 100).
[b]Estimated for census years from census of agriculture, and interpolated for intercensus years.

Table A10 (*Continued*)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Index of farm output (1992=100)																	
Crops	95	72	91	96	89	86	75	86	92	92	100	90	106	96	103	105	100
Livestock	89	91	89	92	92	92	93	94	95	98	100	100	108	110	109	108	106
All farm products	91	75	87	92	87	88	83	89	94	94	100	94	107	101	106	111	109
Index of farm inputs (1992=100)																	
Farm labor	118	123	117	108	101	101	103	104	102	106	100	96	96	92	100	101	100
Fertilizers and pesticides	97	84	98	94	89	92	79	93	90	100	100	97	103	94	106	107	109
Power and machinery	135	131	127	118	113	120	113	108	105	103	100	97	94	92	89	88	86
Taxes and interest	106	110	101	103	105	105	100	97	100	101	100	103	108	107	107	108	108
All farm inputs	114	112	111	106	104	101	100	100	101	102	100	101	102	101	100	101	100
Hours of farmwork per acre planted	18	21	18	17	16	17	16	16	17	17	17	17	17	18	17	17	17
Commercial fertilizer use per acre planted (lbs)																	
Nitrogen	61.2	56.1	61.9	65.1	61.6	64.8	66.1	64.0	67.9	69.4	70.1	71.3	78.0	73.5	71.8	74.2	74.6
Phosphate	26.8	25.5	27.4	26.4	24.7	25.4	26.0	24.9	26.6	25.8	25.8	27.7	27.9	27.7	26.6	27.7	28.0
Potash	31.4	29.7	32.4	31.5	29.9	30.7	25.0	29.1	31.9	30.7	30.9	32.2	32.5	32.1	30.8	32.6	32.4
Pesticide use/acre planted ($)[a]	14.4	13.7	14.5	13.6	14.4	16.5	14.6	16.3	17.3	19.2	19.2	19.7	19.9	20.9	21.4	22.6	22.7
Tractors per 100 acres planted[b]																	
Number	1.3	1.4	1.3	1.3	1.4	1.5	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.2
Horsepower	86	95	87	88	92	101	98	94	93	93	92	93	91	91	86	85	85

[a] Total expenditure on pesticides deflated by the index of prices paid by farmers for all inputs (1990–92=100).
[b] Estimated for census years from census of agriculture, and interpolated for intercensus years.

Table A11 Crop and Animal Yields and General Productivity Measures, 1950–98

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
People fed/Farm worker	15.3	16.2	17.2	18.1	18.8	19.8	21.5	22.6	23.3	24.2	25.6	26.5	27.8	29.0	31.4	34.6
Real receipts/Farm worker[a]	16,145	17,965	18,214	17,780	17,399	17,825	19,320	18,888	20,944	21,375	22,252	23,070	24,463	25,509	26,747	30,232
Crop and animal yields																
Wheat (bu/acre)	17	16	18	17	18	20	20	22	27	22	26	24	25	25	26	27
Corn (bu/acre)	38	37	42	41	39	42	47	48	53	53	55	62	64	68	63	74
Oats (bu/acre)	35	36	33	31	35	38	35	38	45	38	43	42	45	45	43	50
Barley (bu/acre)	27	27	28	28	28	28	29	30	32	28	31	30	34	35	38	43
Grain sorghum (bu/acre)	23	19	17	18	20	19	22	29	35	36	40	44	44	44	42	52
Soybeans (bu/acre)	22	21	21	18	20	20	22	23	24	24	23	25	24	24	23	25
Rice (cwt/acre)	237	231	241	245	252	306	315	320	316	338	342	341	373	397	410	425
Cotton (lbs/acre)	269	270	280	325	342	417	409	388	466	462	447	440	458	518	517	527
Tobacco (lbs/acre)	1,269	1,310	1,273	1,261	1,346	1,466	1,596	1,486	1,611	1,558	1,703	1,755	1,891	1,998	2,067	1,898
Sugar beets (tons/acre)	2.2	2.2	2.3	2.4	2.3	2.3	2.5	2.5	2.5	2.6	2.6	2.2	2.4	2.5	2.4	2.3
Peanuts (lbs/acre)	896	848	942	1,036	725	927	1,164	970	1,193	1,058	1,227	1,184	1,228	1,387	1,499	1,660
Potatoes (cwt/acre)	153	145	151	151	155	161	177	175	187	184	186	198	197	205	190	210
Milk production (lbs/cow)	5,273	5,282	5,318	5,480	5,589	5,776	6,020	6,175	6,413	6,707	6,977	7,232	7,393	7,564	7,964	8,074
Egg production (eggs/layer)	172	175	178	183	184	192	197	199	202	207	209	210	212	213	217	218
General productivity (1992 = 100)																
All output/All inputs	41	41	43	43	43	45	46	46	50	50	52	53	53	55	55	57
All output/Land input	41	42	44	44	44	46	47	46	51	51	54	54	54	56	55	58
All output/Labor input	14	15	17	18	19	19	20	21	25	25	26	28	29	32	33	35
All output/Chemical input	305	286	272	261	261	253	244	237	248	221	226	207	193	178	164	159
All output/Machinery input	45	43	43	43	43	44	44	43	47	47	49	50	51	54	52	54
Crop output/Labor input	14	15	17	18	18	18	19	20	24	24	26	27	28	31	31	34
Crop output/Machinery input	45	43	42	42	41	42	42	41	46	45	48	48	49	52	50	53
Crop output/Chemical input	308	284	267	256	252	241	232	229	244	211	224	199	186	171	156	154
Animal output/Labor input	17	19	21	22	24	24	25	26	29	30	30	34	35	38	40	41
Animal output/Machinery input	55	54	52	51	53	54	53	53	54	56	56	61	61	64	64	63

[a]Cash receipts from farm marketings deflated by CPI (1990–92 = 100).

Table A11 *(Continued)*

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
People fed/Farm worker	37.7	40.5	42.3	44.1	45.3	46.8	48.0	48.9	48.7	49.7	49.8	52.8	56.3	59.6	61.6	64.2
Real receipts/Farm worker[a]	34,899	35,485	36,286	38,768	39,060	39,849	45,368	61,246	57,959	51,652	52,005	51,686	59,108	65,155	62,225	59,035
Crop and animal yields																
Wheat (bu/acre)	26	26	28	31	31	34	33	32	27	31	30	31	31	34	33	35
Corn (bu/acre)	73	80	79	86	72	88	97	91	72	86	88	91	101	110	91	109
Oats (bu/acre)	45	49	54	54	49	56	52	48	48	49	46	56	52	54	53	54
Barley (bu/acre)	38	41	44	45	43	46	44	41	38	44	45	44	49	51	50	52
Grain sorghum (bu/acre)	56	50	53	54	50	54	61	59	45	49	49	57	55	63	46	64
Soybeans (bu/acre)	25	25	27	27	27	28	28	28	24	29	26	31	29	32	27	30
Rice (cwt/acre)	432	454	443	432	462	472	470	427	444	456	466	441	448	460	441	482
Cotton (lbs/acre)	480	447	516	434	439	438	507	520	441	453	465	520	420	547	404	543
Tobacco (lbs/acre)	1,939	2,050	1,945	1,964	2,134	2,035	2,076	1,965	2,067	2,008	2,041	1,982	2,101	1,844	1,939	2,113
Sugar beets (tons/acre)	2.5	2.4	2.4	2.2	2.4	2.7	2.7	2.6	2.4	2.6	2.6	2.6	2.6	2.6	2.6	2.8
Peanuts (lbs/acre)	1,701	1,769	1,769	1,736	2,029	2,072	2,198	2,316	2,495	2,565	2,460	2,460	2,617	2,611	1,645	2,672
Potatoes (cwt/acre)	210	209	214	221	229	230	236	230	246	256	261	261	267	272	265	276
Milk production (lbs/cow)	8,276	8,651	8,938	9,252	9,677	9,956	10,192	9,937	10,232	10,285	10,855	11,152	11,147	11,432	11,936	12,238
Egg production (eggs/layer)	218	221	220	220	218	223	227	227	230	232	235	235	239	240	242	243
General productivity (1992=100)																
All output/All inputs	55	57	59	59	58	64	63	64	60	66	66	67	68	71	68	78
All output/Land input	56	58	61	61	58	65	65	68	65	71	72	73	76	78	73	82
All output/Labor input	37	40	42	44	46	53	51	53	50	55	60	62	64	69	67	76
All output/Chemical input	134	120	117	111	107	108	101	98	91	109	96	95	93	86	81	87
All output/Machinery input	51	52	52	52	52	56	56	55	51	53	53	53	53	57	55	64
Crop output/Labor input	36	39	41	44	44	51	51	54	50	56	59	64	68	74	68	79
Crop output/Machinery input	49	50	51	52	50	55	56	57	51	54	52	55	57	60	55	66
Crop output/Chemical input	130	116	114	109	102	106	101	102	91	111	95	99	99	91	82	90
Animal output/Labor input	45	48	50	53	58	61	60	60	60	59	65	66	66	69	74	75
Animal output/Machinery input	63	63	62	63	66	65	67	62	62	56	57	57	54	57	61	63

[a]Cash receipts from farm marketings deflated by CPI (1990–92=100).

(Continued)

Table A11 (*Continued*)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
People fed/Farm worker	67.0	70.0	73.1	76.5	82.6	83.8	82.9	86.4	86.4	87.8	90.9	92.2	94.2	92.8	93.4	100.4	103.0
Real receipts/Farm worker[a]	57,850	55,654	57,694	58,345	57,565	58,504	58,707	61,616	60,871	58,149	58,987	59,678	60,001	59,058	60,619	65,756	62,369
Crop and animal yields																	
Wheat (bu/acre)	35	39	39	37	34	38	34	33	40	34	39	38	38	36	36	39	43
Corn (bu/acre)	113	81	107	118	119	120	85	116	119	109	131	101	139	113	127	127	134
Oats (bu/acre)	58	53	58	63	56	54	39	54	60	51	65	54	57	55	58	59	60
Barley (bu/acre)	57	52	53	51	51	52	38	49	56	55	62	59	56	57	58	58	60
Grain sorghum (bu/acre)	59	49	56	67	68	69	64	55	63	59	73	60	73	56	67	69	67
Soybeans (bu/acre)	32	26	28	34	33	34	27	32	34	34	38	33	41	35	38	39	39
Rice (cwt/acre)	471	460	495	541	565	556	551	575	553	575	574	551	596	562	612	590	567
Cotton (lbs/acre)	590	508	600	630	559	716	629	639	647	665	715	615	717	544	700	666	619
Tobacco (lbs/acre)	2,185	1,811	2,183	2,197	2,001	2,029	2,161	2,016	2,216	2,179	2,195	2,161	2,359	1,914	2,072	2,137	2,062
Sugar beets (tons/acre)	2.7	2.6	2.7	2.7	2.9	3.2	2.7	2.7	2.8	2.7	3.1	2.9	3.1	2.8	3.1	2.8	3.0
Peanuts (lbs/acre)	2,688	2,399	2,884	2,810	2,408	2,531	2,445	2,426	1,991	2,444	2,562	2,007	2,624	2,281	2,653	2,503	2,701
Potatoes (cwt/acre)	280	269	279	300	297	301	283	289	293	304	323	326	338	323	350	345	343
Milk production (lbs/cow)	12,334	12,636	12,239	13,270	12,875	13,635	14,066	14,193	14,750	14,820	15,506	15,597	16,154	16,378	16,349	16,752	17,105
Egg production (eggs/layer)	243	247	245	247	247	248	251	250	252	252	254	253	254	253	256	255	255
General productivity (1992=100)																	
All output/All inputs	79	67	79	87	84	87	83	89	93	92	100	93	105	100	106	110	109
All output/Land input	83	69	82	88	84	88	83	87	93	94	100	96	108	103	107	112	110
All output/Labor input	77	61	75	86	86	87	81	86	92	89	100	98	111	110	106	110	109
All output/Chemical input	94	90	89	98	97	96	105	96	104	94	100	97	104	107	100	104	100
All output/Machinery input	67	57	69	78	77	73	73	82	90	91	100	97	114	110	119	126	127
Crop output/Labor input	81	58	78	89	88	85	73	83	90	87	100	94	110	104	103	104	100
Crop output/Machinery input	71	55	72	82	78	72	66	80	88	89	100	93	113	104	116	119	116
Crop output/Chemical input	99	86	92	102	99	93	95	92	102	92	100	93	103	102	97	98	92
Animal output/Labor input	76	74	77	85	91	91	90	90	93	92	100	104	113	120	109	107	106
Animal output/Machinery input	66	69	71	78	81	77	82	87	90	95	100	103	115	120	122	123	123

[a]Cash receipts from farm marketings deflated by CPI (1990–92=100).

Table A12 Ratios of Quantities of Farm Inputs and Ratios of Prices of Farm Inputs, 1950–98

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Input quantities (1992=100)																
Land/Labor	35	37	39	42	43	42	42	46	49	49	49	52	54	57	60	61
Machinery/Labor	32	36	40	43	45	44	46	49	53	53	54	56	57	59	63	65
Chemicals/Labor	5	5	6	7	7	8	8	9	10	11	12	14	15	18	20	22
Chemicals/Land	13	15	16	17	17	18	19	20	21	23	24	26	28	31	34	36
Chemicals/Machinery	15	15	16	16	16	17	18	18	19	21	21	24	26	30	32	34
Machinery/Land	90	97	103	104	104	105	108	108	109	109	110	106	105	104	105	106
Purchased/Farm origin[a]	29	30	31	32	32	33	35	37	40	42	46	47	49	52	55	57
Input prices (1990–92=100)																
Land/Labor	112	115	117	111	109	112	106	120	124	122	125	119	123	126	123	118
Tractors/Labor	109	108	100	93	93	93	93	93	94	94	94	89	94	94	95	90
Chemicals/Labor	345	333	315	293	293	293	267	267	250	235	235	222	222	222	211	200
Chemicals/Land	309	290	269	263	268	262	252	222	202	192	188	187	181	177	172	169
Chemicals/Tractors	317	308	315	315	315	315	286	286	267	250	250	250	235	235	222	222
Tractors/Land	98	94	85	83	85	83	88	78	76	77	75	75	77	75	77	76

[a]Purchased inputs include fertilizer and lime, pesticides and herbicides, electricity, and fuel and oil. Farm origin inputs include feed, seed, and livestock purchased.

(*Continued*)

Table A12 (*Continued*)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Input quantities (1992 = 100)																
Land/Labor	66	69	70	73	80	81	79	78	77	78	83	85	85	88	91	92
Machinery/Labor	72	77	81	85	88	94	91	96	98	105	114	116	121	122	122	119
Chemicals/Labor	27	33	36	40	43	49	51	53	55	51	62	65	69	80	83	87
Chemicals/Land	42	48	52	55	54	60	64	69	71	65	75	76	82	91	91	95
Chemicals/Machinery	38	43	45	47	49	52	56	56	56	48	55	56	57	66	68	73
Machinery/Land	110	112	115	115	111	115	115	123	127	135	137	137	142	138	134	129
Purchased/Farm origin[a]	61	64	64	65	67	71	72	73	73	71	76	81	85	90	86	88
Input prices (1990–92 = 100)																
Land/Labor	124	127	127	128	121	124	125	129	141	146	156	175	180	197	214	195
Tractors/Labor	90	83	80	81	77	77	76	75	76	86	90	92	93	93	97	89
Chemicals/Labor	190	174	152	130	120	116	115	114	163	198	154	141	131	128	148	132
Chemicals/Land	154	137	120	101	99	93	92	88	116	135	99	81	73	65	69	67
Chemicals/Tractors	211	211	190	159	157	150	152	152	216	229	172	153	141	138	152	149
Tractors/Land	73	65	63	64	63	62	61	58	54	59	57	53	51	47	45	45

[a]Purchased inputs include fertilizer and lime, pesticides and herbicides, electricity, and fuel and oil. Farm origin inputs include feed, seed, and livestock purchased.

Table A12 (*Continued*)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Input quantities (1992=100)																	
Land/Labor	93	88	91	97	102	99	97	98	99	94	100	102	103	107	99	98	99
Machinery/Labor	115	107	109	109	112	119	110	104	103	97	100	101	98	100	89	87	86
Chemicals/Labor	82	68	84	88	88	91	77	89	88	94	100	101	107	102	106	106	109
Chemicals/Land	88	77	92	90	87	92	79	91	89	100	100	99	104	96	107	108	110
Chemicals/Machinery	71	64	78	80	79	77	70	86	86	97	100	100	110	102	119	122	127
Machinery/Land	123	121	119	113	110	120	113	106	104	103	100	99	95	94	90	89	87
Purchased/Farm origin[a]	88	90	91	92	90	93	94	95	97	98	100	95	95	94	94	97	98
Input prices (1990–92=100)																	
Land/Labor	209	194	191	162	134	116	118	115	119	119	115	115	119	122	127	128	122
Tractors/Labor	103	107	110	109	102	100	102	99	100	100	99	99	103	105	107	104	103
Chemicals/Labor	142	132	134	126	111	101	108	104	101	103	95	90	95	106	107	98	87
Chemicals/Land	68	68	70	78	83	87	91	90	85	86	83	78	80	87	84	77	71
Chemicals/Tractors	138	123	121	115	108	101	106	105	101	103	96	91	93	101	100	95	84
Tractors/Land	49	55	58	67	77	86	86	86	84	84	86	86	86	86	84	81	85

[a]Purchased inputs include fertilizer and lime, pesticides and herbicides, electricity, and fuel and oil. Farm origin inputs include feed, seed, and livestock purchased.

Table A13 Agricultural Exports, Agricultural Imports, and Trade Balances, 1950–98

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Agricultural exports[a]																
Value ($thou)	2,873	4,040	3,427	2,844	3,043	3,195	3,496	4,728	4,003	3,719	4,519	4,946	5,142	5,078	6,068	6,305
% of total U.S. exports	28.4	32.1	22.0	18.8	20.0	21.4	20.7	22.8	21.4	21.4	23.6	24.1	24.0	23.5	24.5	23.8
% of cash farm receipts	10.1	12.3	10.5	9.2	10.2	10.8	11.5	15.9	12.0	11.1	13.2	14.1	14.1	13.5	16.3	16.0
Percentage of agricultural exports from:																
Wheat	16.3	24.4	27.0	20.3	13.9	15.1	23.2	18.8	18.4	20.8	22.8	26.3	22.1	26.3	25.3	19.1
Animal products	11.0	12.1	9.7	13.9	16.1	19.4	20.3	13.8	13.4	15.0	12.4	12.5	11.2	13.0	13.6	12.1
Vegetables and products	2.5	2.4	3.3	3.8	3.5	3.4	3.9	3.0	3.5	4.1	3.3	2.6	3.1	3.6	2.8	2.6
Fruits and products	3.1	2.4	3.4	4.1	4.7	4.7	5.8	4.0	5.0	5.1	4.5	4.4	4.6	4.4	3.9	4.3
Feed grains	8.7	9.3	10.6	10.6	6.5	11.0	11.0	8.2	12.5	15.8	12.1	11.1	16.0	16.3	14.6	18.4
Oilseeds	2.4	2.6	2.5	4.5	5.7	6.2	6.3	5.4	5.5	8.7	8.1	7.5	8.4	10.0	10.2	11.2
Soybeans	0.9	1.2	2.3	2.6	4.0	4.2	5.0	3.8	5.4	5.3	6.2	6.8	6.7	8.0	7.8	9.0
Dairy	3.7	2.4	2.1	3.2	3.1	4.0	4.0	2.4	2.2	2.7	2.0	1.7	1.8	3.0	2.7	2.6
Cotton	32.5	29.4	16.7	23.7	22.5	11.6	31.9	17.8	10.6	22.2	20.7	13.4	12.9	9.7	10.2	9.3
Tobacco	9.5	8.1	8.3	10.5	10.0	11.9	9.7	7.2	8.7	9.2	8.5	8.2	8.2	7.4	6.9	6.2
Agricultural imports																
Value ($thou)	3,177	5,147	4,699	4,303	4,176	3,781	4,086	3,800	3,929	4,004	4,010	3,645	3,762	3,907	4,096	3,986
% of total U.S. imports	45.2	47.9	45.0	39.5	39.8	36.3	33.8	30.0	30.7	28.9	25.9	25.7	24.0	23.8	23.0	18.5
% of ag. exports	110.6	127.4	137.1	151.3	137.2	118.3	116.9	80.4	98.2	107.7	88.7	73.7	73.2	76.9	67.5	63.2
Percentage of agricultural imports from:																
Animal products	3.1	3.3	3.0	3.9	4.1	4.0	3.3	4.5	8.3	9.6	7.8	10.3	12.5	13.4	10.0	10.7
Vegetables and products	2.3	1.5	1.7	1.9	1.7	1.8	1.8	2.2	2.5	2.4	2.5	2.9	3.0	3.0	3.2	3.7
Fruits and products	1.1	0.8	0.9	1.2	1.0	1.1	1.2	1.3	1.2	1.4	1.7	1.8	1.8	2.1	2.5	2.5
Coffee	43.2	26.0	29.7	37.3	30.9	38.4	34.2	33.7	28.0	26.2	25.2	25.9	25.1	24.0	27.4	27.0
Sugar	14.2	9.0	10.1	11.2	10.2	13.0	11.7	14.2	14.0	13.8	13.8	13.2	13.4	15.1	14.4	12.0
Complements[b]	68.7	55.4	55.7	55.3	57.6	64.0	58.8	59.4	49.5	52.0	47.5	48.1	46.3	44.0	48.5	46.2
Dairy	1.5	0.7	1.0	0.8	0.9	1.1	1.0	1.1	1.2	1.2	1.4	1.5	1.4	1.4	1.4	1.5
Dairy imports as % of milk pdn	0.4	0.5	0.6	0.4	0.4	0.4	0.4	0.5	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.7
Trade balance (exports–imports)																
U.S. trade balance ($bil)	3.1	1.8	5.1	4.2	4.7	4.5	4.8	8.0	6.0	3.5	3.6	6.3	5.8	5.2	6.9	5.0
Agricultural trade balance ($bil)	−0.3	−1.1	−1.3	−1.5	−1.1	−0.6	−0.6	0.9	0.1	−0.3	0.5	1.3	1.4	1.2	2.0	2.3

[a]Exports includes shipments to U.S. territories.

[b]Complementary products consist primarily of rubber, coffee, raw silk, cacao beans, wool for carpets, bananas, tea, spices, and vegetable fibers.

Table A13 (*Continued*)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Agricultural exports[a]																
Value ($thou)	6,949	6,453	6,297	6,096	7,374	7,831	9,513	17,978	22,412	21,859	23,381	23,636	27,289	31,979	40,481	43,780
% of total U.S. exports	23.7	21.0	18.7	16.7	17.4	18.1	19.3	25.2	22.8	20.4	20.4	19.6	20.7	19.1	19.2	19.1
% of cash farm receipts	16.0	15.1	14.3	12.7	14.6	14.8	15.6	20.7	24.3	24.6	24.5	24.6	24.3	24.3	29.0	30.9
Percentage of agricultural exports from:																
Wheat	22.5	19.2	18.0	14.1	15.4	14.2	15.5	23.3	21.1	24.5	21.3	12.4	16.9	15.2	16.4	18.4
Animal products	10.2	10.2	10.5	12.2	11.5	12.4	11.7	8.8	7.8	7.7	8.6	11.3	11.1	11.8	9.3	8.9
Vegetables and products	2.7	2.7	3.4	3.6	3.1	2.7	2.5	1.1	1.8	2.5	2.4	2.9	2.4	2.4	2.4	3.3
Fruits and products	3.9	4.1	3.9	4.0	3.9	3.6	3.3	2.1	2.2	2.6	2.7	2.8	3.0	2.7	2.7	2.9
Feed grains	19.6	16.9	15.2	14.6	14.8	12.8	16.3	19.9	20.9	24.2	24.1	20.8	21.7	24.4	24.3	24.0
Oilseeds	11.8	12.8	13.8	14.3	17.3	17.8	17.4	16.5	23.3	20.4	19.9	28.0	30.0	27.8	23.2	21.5
Soybeans	9.4	11.9	12.3	13.3	11.1	15.7	13.9	8.4	12.3	13.1	12.3	18.6	19.1	17.8	14.5	13.7
Dairy	1.7	1.7	1.7	2.3	1.5	1.7	2.0	0.5	0.3	0.6	0.5	0.7	0.5	0.4	0.4	0.6
Cotton	5.6	8.5	7.6	5.5	4.8	6.3	5.6	4.2	5.8	4.5	3.8	6.5	6.4	6.9	7.1	5.1
Tobacco	5.6	8.5	7.8	8.3	7.6	6.9	5.6	3.6	3.6	3.9	3.9	4.6	5.0	3.7	3.3	3.1
Agricultural imports																
Value ($thou)	4,454	4,453	4,656	4,931	5,592	5,828	6,048	7,324	9,549	9,579	10,107	13,382	13,886	16,186	17,276	17,218
% of total U.S. imports	17.5	16.6	14.1	13.8	14.0	12.8	10.8	10.4	9.2	9.8	8.1	8.8	8.4	8.4	7.2	6.8
% of ag. exports	64.1	69.0	73.9	80.9	75.8	74.4	63.6	40.7	42.6	43.8	43.2	56.6	50.9	50.6	42.7	39.3
Percentage of agricultural imports from:																
Animal products	13.4	14.5	16.0	17.4	18.1	18.0	20.2	22.8	18.7	11.0	13.6	9.6	11.5	15.3	13.2	12.9
Vegetables and products	4.1	4.9	4.7	4.8	5.1	5.3	5.4	5.6	4.2	3.9	4.1	4.6	5.5	4.8	4.9	6.0
Fruits and products	2.3	2.2	3.2	2.9	2.6	2.8	2.8	2.8	2.4	2.6	2.5	2.8	3.4	4.0	3.3	4.0
Coffee	26.3	21.9	22.1	19.9	19.6	19.9	18.4	20.3	17.7	12.8	20.0	29.7	25.0	22.5	24.1	16.3
Sugar	10.9	14.0	14.3	13.9	13.5	14.1	15.2	12.9	14.6	28.8	16.1	8.3	7.5	6.7	10.7	14.0
Complements[b]	41.9	39.4	42.7	37.9	38.6	36.7	36.1	39.0	34.3	28.8	37.8	50.9	47.3	43.9	42.6	34.4
Dairy	2.1	3.0	1.8	2.0	2.0	2.2	2.3	2.7	4.8	2.2	2.4	2.2	2.3	2.4	2.7	3.0
Dairy imports as % of milk pdn	2.3	2.4	1.5	1.4	1.6	1.1	1.4	3.3	2.5	1.4	1.6	1.6	1.9	1.9	1.6	1.8
Trade balance (exports–imports)																
U.S. trade balance ($bil)	3.8	3.8	0.6	0.6	2.6	-2.3	−6.4	0.9	−5.3	9.0	−9.3	−30.9	−34.4	−25.8	−30.6	−25.5
Agricultural trade balance ($bil)	2.5	2.0	1.6	1.2	1.8	2.0	3.5	10.7	12.9	12.3	13.3	10.3	13.4	15.8	23.2	26.6

[a]Exports includes shipments to U.S. territories.

[b]Complementary products consist primarily of rubber, coffee, raw silk, cacao beans, wool for carpets, bananas, tea, spices, and vegetable fibers.

(*Continued*)

Table A13 (*Continued*)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Agricultural exports[a]																	
Value ($thou)	39,095	34,769	38,027	31,201	26,309	27,876	35,379	39,637	40,220	37,609	42,430	42,589	43,511	54,160	59,891	57,365	53,730
% of total U.S. exports	18.1	17.9	18.3	14.8	13.0	12.1	12.0	11.6	11.0	9.5	10.0	9.8	9.3	10.1	10.5	9.1	8.4
% of cash farm receipts	27.4	25.4	26.6	21.7	19.4	19.7	23.4	24.6	23.7	22.4	24.8	23.9	24.0	28.8	30.1	27.6	27.3
Percentage of agricultural exports from:																	
Wheat	19.6	17.7	17.1	13.7	13.2	11.1	13.1	15.8	11.0	8.1	10.6	11.6	9.7	9.6	11.5	7.2	7.0
Animal products	9.6	9.8	10.3	12.1	15.1	16.5	13.6	11.8	10.7	12.7	13.8	14.1	15.2	15.2	15.0	18.4	19.2
Vegetables and products	3.7	2.8	2.6	3.0	3.8	4.2	3.6	3.9	5.2	7.4	6.6	7.6	8.0	7.6	6.2	7.1	7.8
Fruits and products	3.0	3.3	2.8	5.4	6.7	7.4	6.7	6.0	6.9	8.1	8.3	8.0	8.8	7.4	7.1	7.4	7.4
Feed grains	18.0	18.7	21.6	22.1	14.5	13.5	14.7	18.6	20.1	15.4	13.7	12.4	10.9	14.0	15.9	12.5	9.7
Oilseeds	24.9	25.1	22.6	19.9	23.8	22.6	21.9	16.7	15.2	15.0	16.9	16.9	15.8	16.5	15.9	19.7	20.4
Soybeans	16.6	16.9	15.1	12.4	15.9	15.1	14.3	10.3	9.8	9.2	10.2	10.8	9.6	9.7	10.5	12.1	11.4
Dairy	1.0	1.0	1.0	1.3	1.6	1.8	1.5	1.2	0.9	0.8	1.5	1.8	1.6	1.3	1.2	1.5	1.7
Cotton	5.5	4.9	6.3	6.2	2.6	5.1	6.0	5.1	6.7	6.9	5.1	3.6	5.3	6.4	5.0	4.7	4.7
Tobacco	3.8	4.3	3.8	5.1	5.0	4.3	3.7	3.2	3.4	4.1	3.7	3.4	2.9	2.5	2.3	2.8	2.7
Agricultural imports																	
Value ($thou)	15,481	16,271	18,916	19,740	20,875	20,650	21,014	21,477	22,560	22,588	24,323	24,454	26,365	29,530	32,565	35,798	37,007
% of total U.S. imports	6.2	6.6	6.0	5.9	5.7	5.3	4.9	4.6	4.7	4.6	4.7	4.4	4.2	4.1	4.2	4.1	4.1
% of ag. exports	39.6	46.8	49.7	63.3	79.3	74.1	59.4	54.2	56.1	60.1	57.3	57.4	60.6	54.5	54.4	62.4	68.9
Percentage of agricultural imports from:																	
Animal products	13.1	12.9	10.2	11.2	10.8	13.5	13.3	11.3	12.6	13.4	11.0	11.1	10.3	7.9	6.9	7.2	7.3
Vegetables and products	7.2	6.4	6.9	6.8	7.5	7.3	7.6	9.1	10.0	9.7	8.7	10.0	10.0	10.3	10.5	10.1	11.5
Fruits and products	5.7	6.4	7.0	9.6	9.5	10.6	10.3	10.6	11.0	12.1	12.0	12.2	11.4	10.9	10.8	10.5	10.8
Coffee	16.9	17.4	17.4	16.4	21.1	15.7	12.4	11.5	8.9	8.1	7.4	6.1	7.7	11.4	8.8	10.3	9.7
Sugar	8.9	7.6	6.0	4.6	3.1	2.4	1.8	2.9	3.3	3.2	2.6	2.4	2.3	2.2	3.2	2.8	2.0
Complements[b]	34.2	24.5	25.3	25.2	29.2	23.6	20.3	18.1	15.4	14.6	14.0	12.3	13.7	17.0	14.7	16.1	16.4
Dairy	4.3	4.4	4.0	3.9	3.8	4.1	4.2	3.9	4.2	3.4	3.4	3.5	3.6	3.5	3.7	3.6	3.7
Dairy imports as % of milk pdn	1.8	1.9	2.0	1.9	1.9	1.7	1.7	1.7	1.8	1.8	1.7	1.9	1.9	1.9	1.9	1.7	2.9
Trade balance (exports–imports)																	
U.S. trade balance ($bil)	−33.4	−52.8	−108.6	−123.2	−160.8	−157.2	−136.2	−121.7	−114.4	−92.0	−86.9	−128.7	-161.9	-194.6	-198.1	-238.1	−256.3
Agricultural trade balance ($bil)	23.6	18.5	19.1	11.5	5.4	7.2	14.4	18.2	17.7	15.0	18.1	18.1	17.1	24.6	27.3	21.6	16.7

[a]Exports includes shipments to U.S. territories.

[b]Complementary products consist primarily of rubber, coffee, raw silk, cacao beans, wool for carpets, bananas, tea, spices, and vegetable fibers.

Table A14 U.S. Production as a Percentage of World Production, World Stocks as a Percentage of World Consumption, U.S. Stocks as a Percentage of World Stocks, and U.S. Exports as a Percentage of World Trade, 1950–98

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
U.S. production as % world production																
Wheat	—[b]	—	—	—	—	—	—	—	—	—	15.5	14.9	11.8	13.3	12.9	13.8
Rice	—	—	—	—	—	—	—	—	—	—	1.6	1.7	1.9	1.9	1.8	2.0
Corn	—	—	—	—	—	—	—	—	—	—	49.5	43.8	44.1	47.0	41.1	46.2
Soybeans	—	—	—	—	—	—	—	—	—	—	—	—	—	—	65.3	72.6
Cotton	—	—	—	—	—	—	—	—	—	—	31.7	32.2	31.7	30.1	28.1	26.2
Sugar	—	—	—	—	—	—	—	—	—	—	7.4	7.1	7.8	8.8	9.2	7.6
Milk	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Butter	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12.1
Cheese	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	18.0
Nonfat dry milk	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.1
World stocks as % of world consumption																
Wheat	—	—	—	—	—	—	—	—	—	—	35.1	29.4	30.8	29.4	29.9	21.9
Rice	—	—	—	—	—	—	—	—	—	—	—	5.0	5.6	7.5	9.0	10.0
Corn	—	—	—	—	—	—	—	—	—	—	30.8	26.6	22.3	24.7	19.2	14.3
Soybeans	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.3	5.7
Cotton	—	—	—	—	—	—	—	—	—	—	44.1	42.1	42.7	53.6	55.9	59.8
Butter	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cheese	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Nonfat dry milk	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
U.S. stocks as % of world stocks																
Wheat	—	—	—	—	—	—	—	—	—	—	49.4	55.3	45.6	38.5	31.9	29.6
Corn	—	—	—	—	—	—	—	—	—	—	198.5	204.5	222.3	209.8	229.9	305.5
Soybeans	—	—	—	—	—	—	—	—	—	—	—	—	—	—	51.0	54.4
Cotton	—	—	—	—	—	—	—	—	—	—	34.7	39.9	55.3	47.0	48.6	51.8
Butter	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cheese	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Nonfat dry milk	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
U.S. exports as % of world trade[a]																
Wheat	—	—	—	—	—	—	—	—	—	—	51.9	51.9	47.7	48.6	48.7	31.7
Rice	—	—	—	—	—	—	—	—	—	—	20.6	21.0	22.1	24.6	23.5	24.9
Corn	—	—	—	—	—	—	—	—	—	—	43.7	39.2	56.6	53.2	53.4	57.1
Soybeans	—	—	—	—	—	—	—	—	—	—	—	—	—	—	87.5	89.7
Cotton	—	—	—	—	—	—	—	—	—	—	40.0	32.3	21.5	32.2	24.8	17.9
Sugar	—	—	—	—	—	—	—	—	—	—	0.2	0.3	0.3	0.2	0.1	0.4
Butter	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.7
Nonfat dry milk	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	107.6

[a]U.S. exports includes shipments to U.S. territories.
[b]Data not available.

(*Continued*)

Table A14 (*Continued*)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
U.S. production as % of world production																
Wheat	11.8	14.1	13.1	12.9	12.0	12.8	12.5	12.7	13.7	16.4	14.1	14.7	11.0	13.9	14.9	17.0
Rice	2.2	2.1	2.4	2.1	1.8	1.8	1.9	1.8	2.3	2.4	2.2	1.8	2.3	2.3	2.5	3.0
Corn	42.3	47.1	44.8	44.1	39.3	46.5	47.0	43.6	39.8	43.7	44.9	45.2	47.1	47.3	41.3	46.7
Soybeans	69.2	70.3	72.3	72.6	69.2	67.8	70.3	67.5	60.5	64.2	58.9	66.6	65.6	65.8	60.4	62.8
Cotton	18.2	14.4	19.1	18.2	18.4	17.6	22.1	20.5	18.0	15.3	18.7	22.4	18.1	22.3	17.5	22.8
Sugar	7.7	7.4	7.7	7.4	7.5	7.5	7.6	7.3	6.4	7.3	7.5	6.4	5.5	5.8	5.9	5.6
Milk	17.5	16.9	16.4	16.4	16.5	16.6	16.4	15.5	15.2	15.1	15.5	15.4	15.3	15.3	15.3	16.1
Butter	10.3	10.9	10.2	10.3	10.6	10.6	9.6	7.7	8.1	8.2	7.7	8.4	7.6	7.5	8.7	9.5
Cheese	17.7	17.8	17.7	17.1	18.0	18.2	18.6	18.5	19.6	18.7	20.4	20.0	20.1	22.1	22.9	24.0
Nonfat dry milk	30.8	27.4	23.0	22.1	22.2	21.6	16.5	12.2	13.1	11.6	10.7	12.8	9.8	10.3	12.9	14.3
World stocks as % of world consumption																
Wheat	32.0	34.7	40.4	32.2	24.4	26.6	21.3	23.1	22.8	25.0	34.1	27.6	32.6	28.1	25.7	25.5
Rice	10.1	10.0	10.9	12.4	12.4	13.3	134.0	10.5	12.6	12.1	16.4	15.5	17.4	20.9	19.2	16.7
Corn	16.0	18.5	17.1	15.1	13.2	16.6	12.2	11.7	15.9	15.9	20.0	21.7	22.2	23.9	20.3	26.1
Soybeans	9.4	15.0	25.5	16.3	7.5	6.1	6.0	10.6	12.6	15.6	9.0	9.7	9.6	15.0	13.6	10.7
Cotton	51.0	42.8	43.4	41.5	39.0	39.0	41.7	45.5	57.7	42.0	36.0	41.4	35.4	33.3	31.8	40.7
Butter	—[b]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cheese	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Nonfat dry milk	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
U.S. stocks as % of world stocks																
Wheat	15.9	17.5	20.3	25.8	27.8	30.0	21.7	11.2	14.5	20.9	23.8	29.4	18.7	20.3	23.6	27.7
Corn	240.8	233.0	248.1	270.9	265.2	243.8	323.1	294.6	199.3	30.3	42.2	47.2	50.9	52.5	41.4	59.1
Soybeans	74.2	83.7	91.7	85.7	74.8	65.3	56.3	75.1	74.2	67.4	48.3	62.6	63.9	74.4	74.1	73.5
Cotton	42.3	26.5	26.0	24.6	18.5	13.9	16.7	13.5	16.9	13.9	13.1	20.9	14.3	14.0	12.6	25.5
Butter	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cheese	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Nonfat dry milk	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
U.S. exports as % of world trade[a]																
Wheat	45.1	36.8	39.2	28.0	36.7	31.9	44.4	52.6	43.1	47.9	40.8	42.0	45.1	43.5	43.8	47.6
Rice	30.0	35.8	33.9	31.4	24.5	29.7	29.2	29.3	43.2	30.5	28.1	34.4	28.9	30.0	34.6	34.4
Corn	61.6	47.1	55.0	49.1	49.1	38.3	52.8	64.7	61.8	73.9	77.8	79.1	81.8	82.6	77.7	75.4
Soybeans	87.9	90.7	89.7	93.4	93.7	87.9	84.7	81.1	73.4	78.7	80.4	85.4	81.4	81.8	80.4	85.7
Cotton	26.4	24.7	16.6	16.2	21.9	18.1	25.0	31.2	22.4	17.3	27.2	28.5	31.1	39.5	22.6	25.4
Sugar	0.3	0.3	0.3	0.4	0.3	0.4	0.2	0.1	0.3	0.9	0.3	0.1	0.2	0.2	2.3	3.5
Butter	2.7	0.9	5.6	4.0	1.3	13.3	7.9	1.7	1.3	0.7	0.6	0.5	0.8	0.4	0.2	11.3
Nonfat dry milk	64.6	47.9	39.1	42.1	33.8	30.6	36.1	4.0	2.4	14.6	13.9	9.4	17.4	11.1	18.9	31.3

[a]U.S. exports includes shipments to U.S. territories.
[b]Data not available.

Table A14 (*Continued*)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
U.S. production as % of world production																	
Wheat	15.9	13.6	13.9	13.3	10.9	11.6	10.0	10.4	12.6	9.9	11.9	11.7	12.0	11.0	10.6	11.1	11.8
Rice	2.5	1.5	2.0	1.9	1.9	1.9	2.2	2.0	2.0	2.0	2.3	2.0	2.5	2.1	2.0	2.1	2.2
Corn	47.6	30.5	42.5	47.1	44.0	40.2	31.3	41.5	42.2	39.0	45.1	34.2	45.7	36.3	39.8	40.8	41.9
Soybeans	63.7	53.5	54.4	58.9	54.0	50.9	44.2	54.8	48.8	52.0	55.8	43.4	49.7	47.9	49.0	46.7	47.3
Cotton	18.0	11.8	14.6	16.7	13.8	18.2	18.3	15.3	17.8	18.3	19.6	21.0	23.0	19.4	20.8	19.9	15.9
Sugar	5.3	5.4	5.3	5.5	5.5	6.4	6.1	5.7	5.1	5.6	6.1	6.4	6.0	5.9	5.4	5.2	5.6
Milk	16.3	16.1	15.6	15.5	15.2	15.2	15.3	16.8	17.0	17.4	18.0	18.1	18.4	18.5	18.4	18.6	18.6
Butter	9.1	8.7	7.5	8.3	8.1	7.6	8.3	9.8	9.7	10.7	11.3	10.9	11.3	11.1	10.5	10.3	9.4
Cheese	24.3	25.0	23.9	24.3	24.4	24.1	24.1	25.2	25.8	25.5	26.9	27.2	27.3	27.7	28.0	27.6	27.8
Nonfat dry milk	15.0	14.5	12.3	15.6	13.9	13.7	13.8	12.4	11.1	11.9	13.8	14.6	18.6	18.2	15.5	17.4	16.4
World stocks as % of world consumption																	
Wheat	28.8	31.3	34.0	34.8	34.7	28.5	22.6	22.3	25.8	23.9	26.3	25.2	21.6	19.7	20.0	23.8	23.0
Rice	15.3	14.4	15.1	17.4	16.0	15.0	14.9	16.1	17.0	16.1	15.5	14.6	13.7	13.6	13.5	14.3	14.
Corn	30.9	16.1	20.8	34.2	35.6	31.8	19.4	15.2	17.0	16.6	20.6	14.2	17.2	12.2	14.7	14.9	16.9
Soybeans	13.5	9.1	13.8	19.5	15.2	19.3	18.1	17.1	19.4	22.8	19.9	17.1	17.8	12.7	9.9	13.9	17.3
Cotton	38.4	35.5	63.8	62.6	43.0	38.7	36.8	29.8	32.9	47.5	43.6	35.3	33.8	41.2	42.9	46.1	49.0
Butter	—[b]	—	—	27.9	32.1	22.1	12.1	8.9	12.9	16.8	15.3	13.6	9.0	9.4	9.9	8.6	10.0
Cheese	—	—	—	16.9	16.7	14.9	14.1	14.3	14.3	14.8	16.2	16.4	16.2	16.5	17.6	16.3	16.2
Nonfat dry milk	—	—	—	41.1	50.3	35.1	15.2	42.4	25.0	28.8	15.9	17.2	16.8	14.6	18.5	19.0	20.8
U.S. stocks as % of world stocks																	
Wheat	31.5	26.0	23.3	30.4	27.7	22.9	16.1	12.3	16.3	9.8	10.0	10.9	11.7	9.5	10.5	14.1	18.9
Corn	69.2	38.5	46.3	70.8	76.2	72.9	54.9	47.0	48.3	34.5	51.1	30.1	42.7	16.3	26.6	38.4	46.6
Soybeans	77.0	60.6	69.9	80.6	77.1	41.5	28.0	36.5	44.3	37.8	43.4	32.9	38.8	29.8	26.6	26.2	36.0
Cotton	30.5	11.1	9.1	19.3	13.9	17.5	22.4	10.9	8.0	9.2	12.6	11.7	9.3	7.3	10.5	9.6	9.3
Butter	—	—	—	5.7	5.5	4.5	11.9	25.4	25.5	28.4	25.7	15.8	7.8	2.0	1.2	2.4	1.8
Cheese	—	—	—	27.9	23.3	14.6	12.6	10.8	13.8	12.2	12.5	12.2	11.2	10.2	11.1	11.3	11.9
Nonfat dry milk	—	—	—	32.7	18.8	7.1	5.0	2.0	8.2	11.3	8.4	9.1	13.2	9.9	5.8	10.2	10.7
U.S. exports as % of world trade[a]																	
Wheat	41.5	37.4	36.4	29.2	30.0	38.6	36.8	32.3	28.8	31.4	32.6	32.9	32.1	34.7	26.7	28.0	27.4
Rice	28.4	27.7	26.3	22.8	29.8	29.2	28.0	29.9	26.6	21.4	23.4	20.9	21.3	18.9	18.6	14.4	15.8
Corn	73.1	78.4	70.6	57.2	67.0	76.9	78.6	80.8	74.1	64.3	68.1	60.8	76.5	73.9	66.0	53.0	70.5
Soybeans	86.1	76.6	65.4	77.3	72.3	72.5	61.0	65.0	63.2	74.2	73.5	57.0	71.3	72.6	65.1	58.8	56.6
Cotton	20.3	26.9	22.9	7.0	20.0	22.0	18.4	24.6	26.3	23.6	20.5	25.6	33.1	27.7	25.7	28.1	18.2
Sugar	0.4	1.0	1.4	1.5	1.9	2.0	1.4	1.7	1.8	2.2	2.2	1.7	2.0	1.6	1.0	0.6	0.5
Butter	17.6	10.6	10.1	9.3	3.5	3.8	2.0	7.7	4.4	6.9	20.1	20.3	13.8	9.5	3.0	2.4	1.5
Nonfat dry milk	42.0	48.3	34.9	35.7	38.5	33.5	16.4	14.1	2.0	9.3	13.0	16.0	14.4	14.9	4.2	11.2	15.5

[a] U.S. exports includes shipments to U.S. territories.
[b] Data not available.

Table A15 Quantity of Exports as a Percentage of Total Commercial Disappearance for Selected Agricultural Commodities, 1950–98

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Exports as a percentage of commercial disappearance[a]																
Corn	3.6	3.8	3.8	5.0	3.4	4.5	4.7	6.9	6.4	7.1	6.8	8.2	11.5	11.8	12.7	15.7
Barley	5.4	11.8	11.8	6.1	8.0	18.9	20.5	15.3	27.1	25.0	21.0	15.0	23.1	13.6	17.4	16.5
Oats	0.4	0.4	0.3	0.4	0.3	1.9	2.4	1.9	2.1	3.6	3.3	1.8	2.9	1.1	0.5	3.3
Grain sorghum	29.1	32.5	10.6	14.9	26.4	28.0	10.7	16.9	26.3	20.2	14.2	19.0	21.9	18.1	25.8	31.3
Rye	12.6	22.9	19.7	—	3.8	16.6	31.5	19.5	22.2	15.9	16.3	25.4	43.6	37.8	21.6	7.4
Rice	34.3	49.5	51.5	48.3	31.8	38.9	58.4	40.8	41.9	50.5	51.9	49.3	55.9	59.4	58.0	56.8
Wheat	23.1	39.0	38.1	28.6	27.7	32.3	43.6	46.6	40.4	41.7	51.8	55.2	50.2	55.6	59.5	51.2
Cotton	28.1	37.5	24.4	30.5	28.0	19.2	47.7	42.7	24.8	45.0	45.3	36.1	28.9	40.1	31.3	24.2
Peanuts	3.7	0.5	0.2	14.0	0.7	0.4	6.6	3.1	3.7	4.5	4.6	2.1	2.5	5.0	8.4	10.1
Tobacco	—[b]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Beef	0.2	0.2	0.3	0.5	0.5	0.5	0.7	0.8	0.3	0.3	0.4	0.3	0.3	0.3	0.5	0.5
Pork	1.0	1.2	1.3	1.3	1.1	1.1	1.2	1.4	1.1	1.2	1.2	1.2	1.1	1.6	1.7	1.1
Broilers	0.5	0.9	0.6	0.9	0.9	1.3	1.4	1.3	1.2	2.7	2.1	3.0	3.5	2.1	2.0	1.5
Turkeys	—	—	—	—	—	—	—	—	0.6	1.0	2.1	2.0	2.7	2.3	2.9	3.8
Eggs	3.4	4.6	1.2	1.1	1.2	1.2	1.2	0.9	0.8	1.0	0.8	0.7	0.6	0.8	0.6	0.7

[a] Exports includes shipments to U.S. territories.
[b] Data not available.

Table A15 (*Continued*)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Exports as a percentage of commercial disappearance[a]																
Corn	14.0	12.5	13.5	12.3	12.2	11.0	16.4	22.0	21.5	28.9	28.4	30.5	30.2	31.6	32.8	28.6
Barley	15.7	10.7	4.9	2.1	1.2	9.1	15.6	19.7	11.3	6.4	16.5	14.3	6.1	12.4	17.9	20.9
Oats	3.3	1.2	1.1	0.7	2.1	2.5	2.3	7.0	2.8	1.9	1.4	1.6	1.7	0.5	1.7	0.5
Grain sorghum	28.7	23.3	14.5	16.3	17.2	15.1	24.4	25.0	32.7	31.4	37.4	32.3	25.5	40.0	48.5	37.1
Rye	13.2	15.7	7.2	3.2	10.8	6.8	17.9	51.4	26.6	5.9	0.3	0.1	1.9	12.7	31.1	7.5
Rice	61.0	62.6	59.6	61.9	55.3	61.8	59.2	55.1	63.0	56.9	60.3	63.6	59.6	60.8	60.3	54.8
Wheat	57.2	52.3	47.1	41.3	49.0	42.6	58.7	61.8	60.3	61.8	55.8	56.7	58.8	63.7	65.9	67.6
Cotton	33.7	32.5	25.5	26.4	32.5	29.6	41.5	46.0	41.0	32.1	42.5	46.7	50.2	59.4	51.1	56.6
Peanuts	9.0	7.9	4.1	5.5	10.1	18.0	16.1	21.2	24.1	11.0	18.7	27.4	28.9	26.9	17.2	15.8
Tobacco	—[b]	—	—	—	33.3	30.3	32.8	35.2	33.7	33.7	35.6	36.6	39.1	37.1	36.9	39.6
Beef	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.5	0.4	0.6	0.6	0.8	0.9	0.9	1.0
Pork	1.2	1.1	1.4	1.8	1.3	1.2	1.6	2.0	1.4	2.6	3.2	2.9	3.0	2.8	2.4	2.7
Broilers	1.4	1.2	1.3	1.2	2.3	2.5	2.4	2.4	2.8	3.1	4.6	4.8	4.6	5.0	6.4	7.4
Turkeys	2.9	2.8	2.5	2.3	2.5	1.5	2.1	2.9	2.3	2.8	3.5	2.8	2.9	2.7	3.4	2.7
Eggs	0.8	1.0	0.8	0.7	0.8	0.8	1.0	0.9	1.0	1.1	1.2	1.7	2.2	1.8	2.9	4.4

[a]Exports includes shipments to U.S. territories.
[b]Data not available.

(*Continued*)

Table A15 (*Continued*)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Exports as a percentage of commercial disappearance[a]																	
Corn	25.1	28.2	26.3	18.9	20.2	22.1	27.9	29.2	22.2	20.0	19.6	17.4	23.2	26.1	20.3	16.4	20.3
Barley	9.7	16.4	13.1	3.8	22.0	22.1	18.6	18.6	17.5	19.1	18.1	13.7	14.2	15.0	7.3	18.2	7.7
Oats	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.1	0.5	1.6	0.9	0.3	0.8	1.2	0.7	0.7
Grain sorghum	28.9	38.2	34.8	20.5	26.5	28.6	39.0	36.2	35.6	43.3	36.8	30.5	35.7	38.5	26.7	33.5	38.0
Rye	1.0	4.3	1.6	1.0	2.2	2.5	14.2	4.4	1.2	0.3	0.1	0.1	0.2	0.3	0.2	0.7	0.6
Rice	52.2	54.3	51.9	46.0	53.5	47.3	50.9	47.4	45.4	40.9	44.3	43.0	48.4	45.5	41.9	43.9	44.6
Wheat	62.4	56.1	55.1	46.4	45.5	59.2	59.1	55.4	43.9	53.1	54.6	49.8	48.0	52.1	43.5	45.3	43.7
Cotton	49.8	54.7	54.1	24.0	48.5	47.4	45.2	47.9	48.2	41.7	34.6	40.6	46.7	43.0	39.2	40.3	27.6
Peanuts	20.4	21.6	23.9	22.2	18.7	16.3	17.3	23.9	17.9	21.9	23.8	15.0	20.5	20.3	17.8	18.3	15.7
Tobacco	37.8	38.9	41.1	38.3	37.6	33.9	35.5	34.7	35.2	40.2	39.6	37.5	32.6	35.8	38.6	37.5	37.1
Beef	1.2	1.2	1.5	1.5	2.1	2.5	2.9	4.3	4.3	5.0	5.5	5.3	6.2	6.9	7.0	7.9	7.6
Pork	2.5	2.3	2.0	1.6	1.4	1.5	1.9	2.4	2.2	2.5	3.2	3.1	3.6	4.7	5.9	6.3	6.3
Broilers	5.4	4.6	4.3	4.2	5.1	5.9	5.7	5.7	7.1	7.3	8.1	9.6	12.7	16.2	17.4	17.6	17.0
Turkeys	2.2	2.1	1.3	1.2	1.0	1.0	1.4	1.2	1.5	3.0	4.5	5.3	6.0	7.2	8.4	11.5	8.4
Eggs	3.2	2.0	1.5	1.8	2.2	2.3	2.9	2.2	2.4	3.0	3.0	2.9	3.4	3.7	4.3	4.0	3.3

[a]Exports includes shipments to U.S. territories.

Table A16 Value of U.S. Agricultural Exports to Selected Countries and Regions as a Percentage of Value of Total U.S. Agricultural Exports, 1950–98

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Canada	8.7	7.4	7.6	8.6	9.8	8.8	8.2	7.9	8.6	9.5	9.1	9.2	10.1	10.2	10.2	9.8
Mexico	1.5	2.2	2.9	3.6	2.3	1.5	1.8	1.6	3.0	1.9	1.3	1.3	1.1	1.5	1.2	1.3
Latin America less Mexico	12.0	10.8	14.4	12.0	12.0	11.7	12.4	9.6	11.2	11.6	10.8	7.7	8.1	8.1	7.6	7.3
Western Europe	52.2	49.9	42.1	42.1	47.1	46.8	48.5	49.2	43.6	41.8	44.2	42.0	43.3	38.5	40.3	37.2
Eastern Europe	0.5	2.4	1.2	2.6	2.4	3.4	2.9	2.7	4.2	4.6	2.9	4.0	3.6	4.2	3.2	2.4
Japan	12.2	10.4	12.5	12.9	13.7	12.1	10.6	9.7	10.2	8.5	9.8	11.2	9.4	10.1	12.2	11.9
Southeast Asia	2.5	2.6	2.7	3.5	2.7	3.1	3.1	3.7	2.8	3.1	2.9	2.9	3.2	3.1	2.5	2.6
Hong Kong, Korea, Taiwan	1.7	1.5	3.1	4.2	3.2	3.4	3.4	4.5	4.4	4.2	4.0	3.9	3.7	4.5	3.8	3.7
China, Mainland	—[a]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Note: Fiscal year data except for 1950–55 when only calendar year data were available. Exports include shipments to U.S. territories.
[a]Data not available.

(*Continued*)

Table A16 (*Continued*)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Canada	9.1	9.2	8.6	10.5	10.4	9.9	8.5	5.2	5.3	6.0	6.1	6.7	5.7	5.2	4.4	4.8
Mexico	1.2	1.1	1.1	1.4	1.9	1.7	1.4	1.4	2.7	3.9	1.6	2.6	2.7	3.0	5.0	6.2
Latin America less Mexico	6.8	8.0	8.2	7.8	6.9	7.9	6.6	4.7	8.0	7.1	7.3	6.4	7.4	7.5	8.6	9.5
Western Europe	39.6	40.0	37.0	34.7	30.4	36.2	33.7	30.5	30.1	31.8	31.3	37.1	31.1	29.5	31.3	27.1
Eastern Europe	2.2	1.9	1.5	1.3	3.8	3.8	1.2	1.6	3.1	2.7	11.8	7.2	10.2	11.0	5.8	4.7
Japan	13.2	14.6	14.3	13.8	14.8	15.5	12.2	12.6	15.0	14.6	14.6	16.0	15.2	15.8	14.3	15.4
Southeast Asia	3.2	5.8	5.5	5.7	5.7	5.1	4.4	3.1	3.0	1.5	1.9	2.9	2.4	2.0	2.0	1.4
Hong Kong, Korea, Taiwan	2.8	4.2	6.0	7.1	4.6	6.9	5.7	4.6	6.2	6.2	6.3	7.7	7.8	8.5	7.8	8.3
China, Mainland	—[a]	—	—	—	—	—	—	1.1	3.8	—	0.0	0.0	1.3	2.8	4.8	5.0

Note: Fiscal year data except for 1950–55 when only calendar year data were available. Exports include shipments to U.S. territories.

[a]Data not available.

Table A16 (*Continued*)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Canada	4.8	5.4	5.1	5.5	5.6	6.4	5.6	5.5	9.2	11.7	11.3	12.3	12.1	10.8	10.3	11.5	13.1
Mexico	3.8	5.1	5.2	5.0	4.2	4.4	4.9	7.0	6.6	7.7	8.7	8.6	9.5	6.8	9.1	8.9	11.1
Latin America less Mexico	8.8	8.9	8.7	9.6	9.4	9.1	7.6	6.8	6.2	7.0	6.5	7.6	7.2	8.1	8.4	8.6	10.0
Western Europe	31.1	29.2	24.4	23.0	26.0	25.8	22.6	17.8	18.2	19.4	18.2	17.6	16.3	16.2	16.2	16.8	16.5
Eastern Europe	2.4	2.4	1.9	1.7	1.7	1.6	1.6	1.1	1.3	0.8	0.5	1.1	0.7	0.6	0.7	0.6	0.6
Japan	14.7	16.9	18.2	18.2	19.5	19.9	20.6	20.6	20.3	20.6	19.8	19.9	21.2	19.3	19.5	18.7	17.6
Southeast Asia	1.8	3.4	2.3	1.9	2.8	2.5	2.9	2.5	2.9	3.3	3.5	3.6	4.1	4.8	5.5	5.5	4.3
Hong Kong, Korea, Taiwan	8.3	9.7	9.7	10.2	11.1	12.6	12.4	11.7	12.8	12.0	11.5	11.6	12.1	13.9	13.9	13.1	10.8
China, Mainland	4.7	1.6	1.8	0.8	0.3	0.8	1.7	3.8	2.3	1.8	1.6	0.8	2.0	4.5	3.5	3.1	2.8

Note: Fiscal year data except for 1950–55 when only calendar year data were available. Exports include shipments to U.S. territories.

Table A17 Total and Commodity Credit Corporation (CCC) Ending Stocks as a Percentage of Domestic and Export Use, 1950–98

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Ending total stocks as a percentage of domestic and export use																
Wheat	53.4	28.4	62.0	104.2	131.7	131.9	91.9	89.9	132.7	128.9	128.6	107.2	100.6	73.4	63.4	46.1
Corn	92.2	82.3	92.1	97.5	112.0	116.1	124.4	125.8	125.5	129.7	132.1	118.2	108.3	111.9	98.0	103.3
Oats	27.9	25.1	23.1	22.4	29.1	29.4	20.7	33.2	34.4	24.3	36.2	30.6	31.8	37.3	35.1	43.9
Barley	8.8	6.6	4.9	6.9	12.0	10.3	10.5	16.7	17.7	14.4	16.7	13.7	16.7	16.6	14.4	15.4
Grain sorghum	14.7	5.2	8.5	21.8	41.2	34.3	38.3	91.7	134.2	120.0	140.7	126.9	126.9	109.8	98.8	46.0
Rye	77.4	59.9	36.2	97.7	101.5	95.0	54.4	65.5	77.8	63.5	84.6	55.1	64.6	37.3	75.5	106.3
Cotton	15.0	18.6	44.1	77.6	89.8	127.6	69.2	62.1	75.8	45.1	46.8	54.3	87.7	84.1	104.8	133.6
Rice	11.8	4.2	3.1	16.1	59.4	72.1	31.1	40.5	33.2	21.0	17.8	9.0	12.2	10.7	10.5	10.8
Soybeans	4.4	4.6	7.5	2.9	6.9	5.5	7.2	9.1	16.3	9.1	4.7	11.1	6.8	9.1	3.6	4.3
Peanuts	17.6	26.4	31.3	16.7	16.5	28.1	29.6	23.5	30.9	26.3	20.7	23.7	23.2	21.2	17.4	17.5
Sugar	22.4	22.5	19.8	19.7	23.2	23.4	21.2	21.5	20.6	22.6	25.6	23.7	24.0	26.7	28.0	27.5
Dairy	4.2	3.3	4.6	9.2	11.4	7.2	4.4	5.2	3.9	3.4	4.4	8.0	9.7	7.5	4.0	3.6
Beef	1.5	2.4	2.6	2.0	1.4	1.5	1.7	0.9	1.2	1.4	1.1	1.2	1.1	1.5	1.6	1.3
Pork	4.7	4.8	4.2	3.2	4.5	3.7	2.4	1.8	1.9	2.2	1.2	1.4	1.6	1.9	1.9	1.1
Broilers	—[a]	—	—	—	—	—	—	—	—	—	1.5	1.9	1.5	1.5	1.4	1.2
Eggs	6.7	1.9	1.0	0.7	1.3	1.4	1.6	1.2	0.8	1.2	1.0	0.9	0.9	0.8	0.8	0.7
Total value of ending CCC stocks ($mil)	1,926	1,206	946	2,415	3,951	5,604	5,323	4,791	4,692	6,408	6,079	5,248	5,271	5,023	4,611	4,110
% of cash farm receipts	6.8	3.7	2.9	7.8	13.2	19.0	17.5	16.1	14.0	19.0	17.7	14.9	14.5	13.4	12.4	10.4

[a]Data not available.

Table A17 (*Continued*)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Ending total stocks as a percentage of domestic and export use																
Wheat	32.1	46.8	63.3	78.5	54.4	68.7	30.9	17.3	25.7	35.1	65.3	59.4	45.5	41.8	43.1	44.3
Corn	82.1	101.7	94.9	95.9	79.0	99.8	88.7	74.6	65.6	11.0	19.6	23.1	24.4	26.7	19.1	36.4
Oats	35.0	39.3	52.0	63.8	63.7	69.9	55.9	37.8	32.9	31.1	28.2	51.7	45.5	41.4	34.1	28.3
Barley	16.3	20.0	27.6	31.3	20.6	24.4	23.2	17.9	13.5	19.5	21.7	28.6	37.1	33.6	26.4	27.6
Grain sorghum	28.2	40.5	39.2	31.6	10.9	17.4	8.4	6.5	5.4	11.1	17.2	31.3	27.9	21.5	21.5	45.6
Rye	93.7	109.1	87.1	116.3	137.4	168.0	147.0	39.3	47.5	48.4	55.8	52.9	47.2	63.5	16.6	15.0
Cotton	84.5	48.0	57.7	52.8	34.6	27.9	32.5	28.3	59.2	35.1	25.6	45.1	25.3	19.2	22.6	56.6
Rice	10.1	7.5	17.2	17.9	22.2	12.4	5.6	8.7	6.4	37.1	37.3	24.0	24.9	18.9	10.9	32.8
Soybeans	10.3	18.4	34.6	18.7	7.9	6.0	4.9	11.9	15.7	16.4	7.2	9.4	9.5	17.2	17.0	12.4
Peanuts	15.1	14.1	14.0	13.9	15.7	12.8	13.2	16.5	37.3	26.9	14.5	15.5	14.8	16.0	14.1	20.8
Sugar	26.6	27.4	28.1	25.8	25.1	24.6	24.3	23.0	25.9	27.2	31.9	40.3	34.3	34.2	28.3	31.6
Dairy	4.1	6.9	5.6	4.5	4.9	4.2	4.5	3.8	5.0	3.3	4.7	7.2	7.4	7.1	10.3	13.8
Beef	1.5	1.3	1.3	1.6	1.4	1.6	2.0	2.5	2.1	1.8	2.2	1.5	2.0	1.9	1.8	1.4
Pork	1.8	2.0	1.7	1.4	2.6	2.4	1.7	2.5	2.6	1.5	2.1	1.8	2.2	2.2	2.5	2.0
Broilers	1.7	1.5	1.0	1.1	1.5	1.3	0.9	1.3	1.5	0.9	1.2	1.2	0.9	1.0	1.0	1.0
Eggs	0.5	1.2	1.0	0.6	0.7	1.0	0.9	0.6	0.8	0.5	0.4	0.4	0.4	0.3	0.3	0.3
Total value of ending CCC stocks ($mil)	2,340	1,005	1,064	1,784	1,594	1,118	830	394	188	402	634	1,104	1,186	1,237	2,802	3,779
As % of cash receipts	5.4	2.3	2.4	3.7	3.2	2.1	1.4	0.5	0.2	0.5	0.7	1.1	1.1	0.9	2.0	2.7

(*Continued*)

Table A17 (*Continued*)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Ending total stocks as a percentage of domestic and export use																	
Wheat	62.7	55.1	55.3	97.2	82.9	47.0	29.3	24.2	35.6	19.7	21.4	23.1	20.5	15.8	19.3	31.5	39.6
Corn	48.6	15.0	23.4	62.2	66.1	54.9	26.6	16.6	19.6	13.9	24.9	11.2	16.6	5.0	10.0	14.2	18.4
Oats	41.6	33.2	35.4	33.9	28.3	25.5	33.4	41.1	42.1	35.3	31.1	32.8	30.8	24.0	26.5	27.2	30.1
Barley	41.0	34.7	48.7	60.4	71.8	73.0	66.8	42.2	33.3	35.5	41.6	43.2	34.4	36.5	43.1	43.8	52.8
Grain sorghum	60.4	44.9	35.2	63.3	99.6	81.7	54.9	26.3	22.0	7.9	23.2	7.3	11.5	3.5	6.1	7.9	12.5
Rye	29.7	47.7	79.9	105.8	80.9	94.5	43.1	30.6	19.8	9.6	11.1	6.4	9.8	6.3	6.0	5.9	5.9
Cotton	74.9	21.7	35.0	113.9	35.9	41.2	51.7	17.4	14.0	23.2	31.2	20.7	13.4	14.5	22.7	21.0	25.0
Rice	54.2	36.2	54.1	60.6	32.7	20.5	15.8	16.1	15.7	16.9	22.6	14.8	15.4	13.8	14.6	14.3	11.6
Soybeans	16.4	9.8	18.4	28.5	21.4	14.6	10.9	12.8	17.9	13.6	13.4	10.7	14.0	7.5	5.0	7.9	12.8
Peanuts	25.9	17.1	39.6	18.0	28.3	22.0	21.2	17.0	18.7	23.1	33.8	28.8	28.0	18.7	21.2	22.7	38.9
Sugar	33.0	28.2	33.8	36.2	38.7	36.6	36.4	33.0	29.4	32.4	33.8	36.0	27.5	25.2	30.3	30.5	30.6
Dairy	14.7	16.3	12.4	9.5	9.2	5.3	5.8	6.2	9.0	10.6	9.0	6.1	3.7	2.7	3.1	3.1	3.2
Beef	1.6	1.7	1.9	2.8	1.6	1.5	1.6	1.3	1.6	1.7	1.4	2.1	2.0	1.9	1.4	1.7	1.4
Pork	1.9	2.4	2.2	1.8	1.7	2.3	2.6	1.9	1.8	2.3	2.2	2.0	2.4	2.1	2.1	2.3	3.0
Broilers	1.0	0.8	1.0	1.2	1.3	1.3	1.1	1.3	1.3	1.5	1.8	1.6	1.9	2.3	2.5	2.2	2.6
Eggs	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1
Total value of ending CCC stocks ($mil)	5,50	10,597	6,664	8,309	13,848	12,331	4,856	4,018	2,106	2,375	1,719	833	715	654	435	300	250
As % of cash receipts	3.9	7.7	4.7	5.8	10.2	8.7	3.2	2.5	1.2	1.4	1.0	0.5	0.4	0.3	0.2	0.1	0.1

Table A18 Support Prices and Loan Rates for Agricultural Commodities as a Percentage of Market Price in the United States, 1950–98

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
	Target price, support price, CCC purchase price, or transition payment rate as a percentage of market price															
Wheat	100	103	105	108	106	105	102	104	104	103	102	98	98	108	146	148
Corn	97	95	105	108	113	117	116	126	121	107	106	109	107	113	107	108
Cotton	—[a]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Grain sorghum	178	164	151	260	181	182	171	192	183	177	181	191	189	204	190	204
Oats	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Barley	92	88	89	106	106	102	103	107	103	90	92	95	101	107	101	94
Rice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tobacco, burley	93	97	98	89	93	79	76	86	84	94	89	86	99	98	98	89
Tobacco, flue-cured	82	97	101	91	91	92	95	92	94	95	92	86	93	98	98	89
Peanuts, quota	99	111	110	107	100	104	102	107	101	101	101	101	101	100	100	98
Peanuts, nonquota	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Butter	98	96	94	100	97	99	99	100	98	97	102	100	99	100	98	98
Cheese	105	98	101	105	103	106	105	105	102	93	92	97	96	96	94	94
Nonfat-dry milk	105	104	105	105	107	104	105	105	101	105	102	105	97	100	99	99
Milk, mfg.	97	94	95	107	100	100	100	99	97	97	94	101	97	98	97	97
Wool	73	52	100	97	100	145	140	115	170	143	148	145	130	128	117	132
	CCC loan rates as a percentage of market price															
Oats	90	88	99	108	106	102	94	100	105	77	83	97	100	105	103	97
Wheat	100	103	105	108	106	105	102	104	104	103	102	98	98	98	95	93
Corn	97	95	105	108	113	117	116	126	121	107	106	109	107	96	94	91
Soybeans	83	90	94	94	90	92	99	101	104	94	87	101	96	90	86	89
Barley	92	88	89	106	106	102	103	107	103	90	92	95	101	91	88	78
Grain sorghum	178	164	151	260	181	182	171	192	183	177	181	191	189	174	169	168
Rye	98	86	83	111	118	111	109	109	108	90	102	101	107	99	103	104
Rice	90	104	86	93	108	97	94	92	96	95	97	92	93	94	96	91
Cotton	76	85	93	105	100	108	102	108	106	107	108	100	101	108	107	138
Honey	59	63	70	64	60	56	51	52	55	49	48	62	64	62	60	63
Wholesale price of raw sugar in New York as a ratio of world price of raw sugar, cif New York	1.0	0.9	1.2	1.5	1.5	1.4	1.4	1.0	1.4	1.6	1.5	1.6	1.7	0.9	1.0	2.2

[a]Not applicable.

(*Continued*)

Table A18 (*Continued*)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
	Target price, support price, CCC purchase price, or transition payment rate as a percentage of market price															
Wheat	158	188	212	223	212	219	172	86	50	58	73	127	121	97	93	103
Corn	105	131	125	117	102	125	90	64	46	54	63	99	93	93	87	97
Cotton	—[a]	—	—	—	—	—	—	—	88	75	68	92	90	93	78	131
Grain sorghum	201	216	226	200	188	213	174	122	84	99	131	125	66	60	54	54
Oats	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Barley	95	90	99	118	107	82	91	59	40	47	57	121	117	105	79	105
Rice	—	—	—	—	—	—	—	—	—	—	120	104	92	100	85	90
Tobacco, burley	91	86	86	95	95	88	95	85	76	91	96	98	95	92	88	91
Tobacco, flue-cured	88	92	92	88	93	90	85	87	79	93	96	97	90	92	98	95
Peanuts, quota	100	100	101	101	100	99	98	101	102	101	104	103	100	101	91	85
Peanuts, nonquota	—	—	—	—	—	—	—	—	—	—	—	—	59	72	50	46
Butter	97	100	99	100	101	99	99	87	92	87	96	102	99	104	104	102
Cheese	91	97	99	92	95	97	92	87	89	93	95	101	98	97	102	101
Nonfat-dry milk	99	99	103	100	103	103	96	85	97	97	98	102	101	102	104	102
Milk, mfg.	101	99	101	96	99	101	97	85	92	95	95	103	98	100	109	104
Wool	125	166	165	165	203	371	206	87	122	161	110	138	145	133	140	143
	Loan rates as a percentage of market price															
Oats	90	95	105	107	102	90	75	46	35	37	46	94	86	79	65	66
Wheat	77	90	101	101	94	93	71	32	33	38	71	98	83	71	77	87
Corn	81	102	97	91	79	97	67	41	36	43	60	99	89	89	83	97
Soybeans	91	100	103	96	79	74	51	40	34	48	45	51	72	66	66	83
Barley	76	90	99	95	86	82	71	40	32	37	54	92	85	75	64	79
Grain sorghum	149	163	171	150	141	166	131	84	68	79	126	186	55	51	46	48
Rye	96	95	100	101	103	99	93	47	35	38	49	83	85	86	72	68
Rice	91	92	92	95	94	95	87	55	54	84	90	78	69	75	64	67
Cotton	81	92	96	92	92	70	72	43	63	71	61	86	83	81	64	97
Honey	66	80	74	74	75	64	46	36	40	50	59	62	68	74	82	91
Wholesale price of raw sugar in New York as a ratio of world price of raw sugar, cif New York	2.5	2.5	2.5	2.3	2.2	1.9	1.2	1.1	1.0	1.1	1.1	1.4	1.8	1.6	1.0	1.2

[a]Not applicable.

Table A18 (*Continued*)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
	Target price, support price, CCC purchase price, or transition payment rate as a percentage of market price																
Wheat	117	123	129	142	181	170	114	110	153	133	123	123	116	88	93	26	24
Corn	106	89	115	136	202	156	115	120	121	116	133	110	122	85	101	10	25
Cotton	120	114	138	144	155	123	137	111	107	125	133	125	101	97	105	14	12
Grain sorghum	65	56	69	83	118	95	69	72	69	65	77	63	69	46	62	8	18
Oats	101	99	96	130	132	103	59	101	127	120	110	107	119	87	74	2	3
Barley	119	105	114	131	161	144	90	100	110	112	116	119	116	82	86	14	14
Rice	130	133	148	182	317	160	163	147	160	141	182	134	158	117	108	29	32
Tobacco, burley	97	99	93	112	95	95	93	92	89	89	91	93	94	93	90	92	—[b]
Tobacco, flue-cured	95	96	94	99	94	90	89	88	89	89	90	94	93	89	87	94	—
Peanuts, quota	110	111	99	115	104	108	110	111	91	114	113	111	116	116	109	108	—
Peanuts, nonquota	40	37	33	30	26	27	27	27	22	26	22	22	23	22	23	23	—
Butter	101	99	96	99	94	97	100	99	113	102	96	102	96	86	60	56	—
Cheese	101	99	97	98	98	98	93	85	83	92	89	85	85	84	77	85	—
Nonfat-dry milk	101	99	100	98	100	98	91	75	80	90	91	92	96	95	87	95	—
Milk, mfg.	103	104	103	103	101	99	95	86	82	91	85	86	85	86	77	84	—
Wool	200	250	208	261	266	197	129	143	228	342	266	400	268	204	—	—	—
	Loan rates as a percentage of market price																
Oats	88	84	78	107	82	60	34	57	71	69	67	65	80	58	53	69	101
Wheat	103	104	97	107	99	89	59	55	75	68	68	75	75	57	60	76	97
Corn	100	83	97	114	128	94	70	70	69	68	83	69	84	58	70	78	97
Soybeans	88	64	86	99	100	81	64	80	78	90	90	78	90	73	68	81	98
Barley	95	87	91	105	97	82	51	55	60	63	69	70	76	53	57	66	80
Grain sorghum	60	52	58	70	74	57	41	42	39	38	48	39	47	32	43	45	56
Rye	91	104	109	107	110	96	60	68	64	63	61	57	54	56	—	—	—
Rice	97	95	100	123	192	94	97	88	97	86	110	81	96	71	65	67	76
Cotton	96	83	93	102	105	81	93	76	74	87	95	90	69	69	75	80	81
Honey	106	114	132	137	125	121	118	113	100	97	98	100	95	73	—	—	—
Wholesale price of raw sugar in New York as a ratio of world price if raw sugar, cif New York	2.3	2.6	4.2	5.0	3.5	3.3	2.2	1.8	1.9	2.4	2.3	2.2	1.8	1.7	1.8	1.8	2.3

[b] Price support or loan rate authority suspended.

Table A19 Acres of Cropland Idled in the United States, 1950–98

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Acres idled as a percentage of acres harvested plus acres idled																
Barley	—[a]	—	—	—	—	—	0.8	2.6	3.9	9.7	13.1	14.0	25.7	28.6	32.7	33.9[a]
Corn (for grain)	—	—	—	—	—	—	7.8	9.0	11.4	5.5	7.2	29.6	31.0	27.2	31.6	32.4
Cotton	—	—	—	—	—	—	7.1	19.1	30.5	5.0	6.1	6.0	6.0	6.0	4.7	4.2
Oats	—	—	—	—	—	—	0.9	3.9	6.9	14.7	18.4	20.0	19.5	19.3	15.4	13.1
Rice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Grain sorghum	—	—	—	—	—	—	5.1	10.9	16.6	25.6	27.8	52.7	48.1	41.4	46.7	44.2
Wheat	—	—	—	—	—	—	10.4	23.7	10.6	6.3	8.6	8.5	25.7	20.0	14.1	16.4
Total acres idled as a percentage of the sum of total harvested acres plus total idled acres	—	—	—	—	—	—	4.1	7.9	7.6	6.0	7.5	14.7	17.8	15.6	15.5	15.8

[a]No acres idled.

Table A19 (*Continued*)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Acres idled as a percentage of acres harvested plus acres idled																
Barley	31.9	9.8	8.5	33.4	30.2	1.0	34.1	12.7	1.2	1.1	—[a]	—	8.0	8.5	—	—
Corn (for grain)	32.2	25.2	34.4	35.5	33.2	20.0	31.1	10.8	2.2	2.2	1.1	—	7.8	3.9	—	—
Cotton	36.1	41.6	28.3	4.3	3.5	17.9	15.0	2.4	2.3	3.3	1.8	—	2.4	—	—	—
Oats	13.5	13.0	10.1	4.3	1.6	—	—	—	—	—	—	—	—	—	—	—
Rice	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Grain sorghum	45.3	32.1	40.9	39.6	38.0	23.3	38.0	15.1	5.5	4.9	3.3	—	9.5	8.5	—	—
Wheat	18.1	3.8	3.7	20.4	27.2	22.3	30.1	12.3	0.3	0.3	—	—	14.5	11.6	—	—
Total acres idled as a percentage of the sum of total harvested acres plus total acres idled	17.7	11.5	14.0	16.6	16.7	10.9	17.5	5.8	0.9	0.9	0.4	—	5.1	3.6	—	—

[a]No acres idled.

(*Continued*)

Table A19 (*Continued*)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Acres idled as a percentage of acres harvested plus acres idled																	
Barley	4.2	10.2	4.3	5.7	14.9	29.2	38.1	36.1	42.7	36.8	41.2	44.0	45.2	45.3	28.7	—[a]	—
Corn (for grain)	2.8	38.5	5.1	6.7	17.4	30.0	28.6	18.0	17.8	14.1	11.5	19.5	8.4	15.4	5.2	—	—
Cotton	14.1	48.1	19.4	26.0	34.0	31.7	21.4	33.9	22.3	16.4	22.2	18.2	19.1	9.2	10.0	—	—
Oats	1.0	3.2	1.2	1.2	8.0	15.9	17.8	17.9	20.1	28.3	31.8	36.6	33.3	41.5	32.9	—	—
Rice	10.9	43.9	22.2	32.5	38.9	40.7	27.5	30.9	26.2	31.9	22.3	29.8	23.2	13.9	15.1	—	—
Grain sorghum	4.7	36.3	3.8	5.1	17.8	33.5	39.1	33.1	38.5	33.2	26.7	35.0	31.5	33.1	16.9	—	—
Wheat	6.9	32.8	21.7	22.5	26.2	33.4	35.8	22.8	20.5	31.3	22.2	20.8	20.1	21.1	14.3	—	—
Total acres idled as a percentage of the sum of total harvested acres plus total acres idled	3.2	21.0	7.5	8.5	13.3	19.6	19.3	14.1	13.8	14.9	12.3	14.0	11.0	12.1	6.8	—	—

[a]No acres idled.

Table A20 Direct Government Payments to Farmers by Sales Category in the United States, 1950–98

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Percentage distribution of government payments to farmers by sales category																
Under $20,000	—[e]	—	—	—	—	—	—	—	—	—	68.9	66.6	65.1	63.9	63.8	61.7
$20,000–$49,999[a]	—	—	—	—	—	—	—	—	—	—	15.8	16.7	17.7	18.6	18.9	19.8
$50,000–$99,999[b]	—	—	—	—	—	—	—	—	—	—	11.0	11.9	12.0	12.1	11.9	12.6
$100,000–$249,999[c]	—	—	—	—	—	—	—	—	—	—	4.3	4.8	5.2	5.3	5.4	6.0
$250,000–$499,999[d]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
$500,000 and over	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government payments per farm as a percentage of gross cash farm income per farm by sales category																
Under $20,000	—	—	—	—	—	—	—	—	—	—	2.8	5.9	6.9	6.8	8.8	9.8
$20,000–$49,999[a]	—	—	—	—	—	—	—	—	—	—	1.7	3.6	4.1	4.0	5.2	5.8
$50,000–$99,999[b]	—	—	—	—	—	—	—	—	—	—	1.4	3.0	3.2	2.9	3.7	3.9
$100,000–$249,999[c]	—	—	—	—	—	—	—	—	—	—	0.5	1.0	1.1	1.0	1.3	1.4
$250,000–$499,999[d]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
$500,000 and over	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

(*Continued*)

[a]This sales category is $20,000–$39,999 for 1950–92.
[b]This sales category is $40,000–$99,999 for 1950–92.
[c]This sales category is $100,000 and over for 1960 and 1965, and $100,000–$199,999 for 1970 through 1980.
[d]This sales category is $200,000–$499,999 for 1983 and earlier.
[e]Data not available.

Table A20 (*Continued*)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Percentage distribution of government payments to farmers by sales category																
Under $20,000	50.7	50.4	48.7	46.2	44.5	42.9	38.5	29.3	27.5	26.2	21.3	18.1	14.0	13.1	12.2	11.5
$20,000–$49,999[a]	21.7	21.8	22.2	22.7	22.2	21.8	20.6	18.0	18.8	17.3	16.0	15.3	13.1	12.2	11.4	10.7
$50,000–$99,999[b]	17.4	17.1	17.6	18.2	19.0	19.8	21.8	26.0	25.6	28.6	31.5	34.0	35.0	33.5	32.2	31.0
$100,000–$249,999[c]	10.3	10.7	11.5	6.5	7.2	7.8	9.4	12.8	11.9	13.0	15.3	16.8	19.8	20.9	21.9	22.8
$250,000–$499,999[d]	—[e]	—	—	3.3	3.8	4.1	5.2	7.4	7.5	7.9	9.4	10.1	12.5	13.9	15.2	16.3
$500,000 and over	—	—	—	3.0	3.3	3.7	4.5	6.6	8.7	7.0	6.5	5.7	5.6	6.4	7.1	7.7
Government payments per farm as a percentage of gross cash farm income per farm by sales category																
Under $20,000	10.9	10.5	11.6	12.1	11.8	10.1	11.7	6.5	1.3	2.1	1.6	3.3	4.1	1.7	1.6	2.5
$20,000–$49,999[a]	7.5	7.2	7.9	8.1	7.9	6.6	7.6	4.3	0.9	1.4	1.2	2.8	4.1	1.7	1.5	2.4
$50,000–$99,999[b]	6.1	5.7	6.1	6.2	6.0	5.0	5.8	3.1	0.6	1.0	1.0	2.6	4.2	1.7	1.5	2.4
$100,000–$249,999[c]	2.6	2.5	2.9	4.8	4.5	3.8	4.3	2.3	0.4	0.7	0.7	1.8	2.8	1.2	1.0	1.5
$250,000–$499,999[d]	—	—	—	3.2	3.1	2.6	3.0	1.6	0.3	0.5	0.5	1.2	1.9	0.8	0.7	1.0
$500,000 and over	—	—	—	1.6	1.5	1.3	1.6	0.9	0.2	0.3	0.2	0.4	0.6	0.2	0.2	0.3

[a]This sales category is $20,000–$39,999 for 1950–92.
[b]This sales category is $40,000–$99,999 for 1950–92.
[c]This sales category is $100,000 and over for 1960 and 1965, and $100,000–$199,999 for 1970 through 1980.
[d]This sales category is $200,000–$499,999 for 1983 and earlier.
[e]Data not available.

Table A20 (*Continued*)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Percentage distribution of government payments to farmers by sales category																	
Under $20,000	11.1	5.4	4.8	5.2	7.8	4.8	4.7	6.7	2.6	9.4	8.9	9.0	14.0	15.9	11.5	11.7	9.3
$20,000–$49,999[a]	10.2	7.2	6.5	9.1	11.1	7.5	7.7	8.9	5.6	11.8	11.8	9.3	12.4	11.1	9.6	12.8	8.0
$50,000–$99,999[b]	30.5	22.0	21.7	23.9	25.5	23.7	22.8	22.4	18.9	21.0	17.9	15.9	16.9	11.6	11.0	13.0	10.6
$100,000–$249,999[c]	28.8	34.4	35.5	31.8	32.1	36.4	36.4	32.2	34.7	30.2	32.3	33.3	27.7	29.2	25.7	27.4	26.5
$250,000–$499,999[d]	11.1	19.0	18.9	19.1	14.9	17.2	16.8	17.8	22.9	14.5	16.3	18.9	15.6	18.9	21.1	18.6	23.7
$500,000 and over	8.4	11.9	12.8	10.9	8.7	10.4	11.5	11.9	15.3	13.2	12.8	13.6	13.4	13.4	21.1	16.4	21.8
Government payments per farm as a percentage of gross cash farm income per farm by sales category																	
Under $20,000	4.2	5.6	4.6	4.2	10.0	8.5	7.0	7.7	2.6	7.4	8.6	11.5	9.0	10.3	8.3	7.1	9.0
$20,000–$49,999[a]	4.2	7.0	7.1	8.1	15.4	14.8	12.2	10.2	5.8	9.2	11.5	10.1	7.5	7.2	6.5	7.6	7.6
$50,000–$99,999[b]	4.2	7.7	7.5	7.2	13.0	15.5	12.8	9.8	7.3	5.9	5.6	9.7	6.0	4.2	5.0	4.7	6.1
$100,000–$249,999[c]	2.7	7.7	8.0	6.2	10.2	15.2	12.6	9.3	8.2	5.6	6.4	9.8	5.0	4.9	4.5	4.7	7.3
$250,000–$499,999[d]	1.7	7.2	5.8	5.1	6.9	11.9	9.8	7.3	8.3	4.0	5.0	7.8	4.2	4.1	3.6	3.8	7.8
$500,000 and over	0.6	2.8	2.1	1.8	2.1	3.1	2.7	1.8	1.8	1.8	1.8	2.4	1.4	1.1	1.6	1.2	2.5

[a]This sales category is $20,000–$39,999 for 1950–92.
[b]This sales category is $40,000–$99,999 for 1950–92.
[c]This sales category is $100,000 and over for 1960 and 1965, and $100,000–$199,999 for 1970 through 1980.
[d]This sales category is $200,000–$499,999 for 1983 and earlier.

Table A21 Consumer Expenditures on Food and Per Capita Consumption of Selected Commodities, 1950–98

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Personal consumer expenditures per capita ($)	1,262	1,344	1,391	1,452	1,471	1,554	1,602	1,659	1,685	1,789	1,839	1,866	1,950	2,024	2,146	2,287
Spent on food (%)	28.1	29.2	29.3	28.1	27.9	26.6	26.4	26.3	26.4	25.4	24.8	24.5	23.7	23.0	22.7	22.7
Consumer expenditures on food per capita ($)	354	392	407	408	410	413	423	437	445	454	456	457	462	467	488	518
Spent on food away from home (%)	17.4	18.1	18.1	17.9	17.2	17.1	16.9	16.8	16.3	16.7	17.3	17.9	18.7	19.3	19.2	18.9
Disposable income spent on food (%)	26.2	27.0	27.1	26.1	26.1	25.1	24.5	24.5	24.6	23.0	22.5	22.0	21.2	20.7	20.2	20.2
Per capita consumption (retail weight)																
Beef (lbs)	50	44	49	61	63	64	66	65	62	62	64	66	66	70	74	74
Pork (lbs)	64	67	67	59	56	52	53	57	56	63	60	58	59	61	61	55
Poultry meat (lbs)	25	27	27	27	29	27	30	32	34	36	34	38	37	38	39	41
Fish (lbs)	12	11	11	11	11	11	10	10	11	11	10	11	11	11	11	11
Eggs (lbs)	49	49	49	48	47	47	47	46	45	45	42	42	41	40	40	40
All dairy products (lbs)[a]	624	597	602	628	628	599	609	622	609	605	610	619	625	594	588	596
Fluid milk products (lbs)[b]	341	346	348	344	340	344	346	341	336	330	321	314	312	313	293	292
Low fat milk products (lbs)	34	33	33	32	28	29	28	26	27	27	27	28	29	30	37	39
Cheese (excluding cottage) (lbs)	8	7	8	8	8	8	8	8	8	8	8	9	9	9	9	10
All mfg. dairy products (lbs)[a]	351	321	324	349	345	311	316	330	321	322	328	345	339	307	302	311
Fresh fruits (lbs)	128	138	132	129	126	121	119	115	114	114	113	108	102	94	98	100
Fresh vegetables (lbs)[c]	85	83	83	83	81	82	83	83	82	82	84	83	83	83	81	81
Fresh potatoes (lbs)	89	96	85	90	88	91	85	91	86	87	88	88	84	87	83	78
Coffee (lbs)	14	14	14	14	11	12	12	12	12	12	12	12	12	12	12	11
Sugar (lbs)	101	94	97	97	96	96	98	95	97	96	98	98	97	97	97	97
Carbonated soft drinks (gals)	11	11	11	12	11	12	12	12	12	13	13	14	15	16	17	19

[a]Farm level fluid milk equivalent.
[b]Product weight.
[c]Excludes potatoes.

Table A21 (*Continued*)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Personal consumer expenditures per capita ($)	2,451	2,559	2,783	2,987	3,165	3,382	3,672	4,023	4,360	4,771	5,273	5,805	6,426	7,093	7,741	8,454
Spent on food (%)	22.7	22.1	21.9	21.7	22.2	21.3	20.9	21.1	21.6	21.7	21.1	20.5	20.2	20.3	20.2	19.7
Consumer expenditures on food per capita ($)	556	566	609	649	701	721	769	848	944	1,033	1,112	1,193	1,301	1,443	1,563	1,668
Spent on food away from home (%)	18.5	18.7	19.1	19.2	18.4	18.8	19.4	19.4	19.1	20.6	21.7	22.3	23.3	23.7	23.9	25.0
Disposable income spent on food (%)	20.3	19.5	19.5	19.5	19.5	18.7	18.6	18.3	18.8	18.9	18.7	18.3	17.9	18.0	17.6	17.1
Per capita consumption (retail weight)																
Beef (lbs)	77	79	81	82	84	83	85	81	86	88	94	92	87	78	76	77
Pork (lbs)	54	60	56	55	55	60	54	49	52	43	45	47	47	53	57	54
Poultry meat (lbs)	44	46	45	47	48	49	51	48	48	47	51	52	54	58	59	61
Fish (lbs)	11	11	11	11	12	12	13	13	12	12	13	13	13	13	13	13
Eggs (lbs)	40	41	40	39	40	40	39	37	36	35	35	34	35	36	35	34
All dairy products (lbs)[a]	584	583	563	549	550	537	548	536	531	520	537	542	532	534	550	550
Fluid milk products (lbs)[b]	291	283	276	274	275	276	274	269	260	261	260	258	254	251	246	242
Low fat milk products (lbs)	34	37	42	47	50	55	60	65	67	73	78	83	85	88	91	94
Cheese (excluding cottage) (lbs)	10	10	11	11	12	12	13	14	15	14	16	16	17	17	18	18
All mfg. dairy products (lbs)[a]	302	311	295	288	297	288	294	289	295	283	301	309	302	306	327	331
Fresh fruits (lbs)	99	100	97	98	97	96	91	92	91	97	97	95	99	96	100	99
Fresh vegetables (lbs)[c]	80	82	83	81	79	79	80	82	83	83	84	85	84	85	86	85
Fresh potatoes (lbs)	83	74	79	77	79	75	77	74	72	76	76	76	73	74	74	71
Coffee (lbs)	11	11	11	11	10	10	10	10	10	9	9	7	8	9	8	7
Sugar (lbs)	97	99	99	101	102	102	102	101	96	89	93	94	91	89	84	79
Carbonated soft drinks (gals)	20	21	23	24	24	26	26	28	28	28	31	33	34	35	35	35

[a] Farm level fluid milk equivalent.
[b] Product weight.
[c] Excludes potatoes.

(*Continued*)

Table A21 (*Continued*)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Personal consumer expenditures per capita ($)	8,955	9,758	10,571	11,375	12,031	12,789	13,699	14,541	15,329	15,719	16,484	17,261	18,098	18,890	19,730	20,613	21,617
Spent on food (%)	19.4	18.5	17.9	17.2	17.0	16.6	16.5	16.5	16.6	16.6	15.9	15.7	15.4	15.2	15.0	14.8	14.6
Consumer expenditures on food per capita ($)	1,737	1,809	1,893	1,961	2,044	2,122	2,259	2,393	2,548	2,603	2,621	2,704	2,794	2,873	2,961	3,048	3,154
Spent on food away from home (%)	25.9	26.8	27.2	27.5	28.0	28.4	28.5	28.0	28.2	27.8	28.7	29.4	29.5	29.5	29.3	29.3	29.3
Disposable income spent on food (%)	16.8	16.4	15.5	15.1	15.1	14.9	14.8	14.7	14.8	14.7	14.1	14.1	14.1	13.9	13.8	13.7	13.6
Per capita consumption (retail weight)																	
Beef (lbs)	77	79	78	79	79	74	73	69	68	67	66	65	67	67	68	67	68
Pork (lbs)	49	51	51	52	49	49	52	52	49	50	53	52	53	52	49	49	52
Poultry meat (lbs)	62	64	66	68	71	77	70	84	88	91	95	97	98	98	100	101	103
Fish (lbs)	12	13	14	15	15	16	15	16	15	15	15	15	15	15	15	15	15
Eggs (lbs)	34	34	34	33	33	33	32	31	30	30	30	30	31	30	31	31	31
All dairy products (lbs)[a]	545	565	534	557	565	555	569	557	578	565	556	543	551	559	560	559	571
Fluid milk products (lbs)[b]	236	236	238	241	240	238	234	236	233	233	231	226	226	223	224	221	222
Low fat milk products (lbs)	94	96	100	112	115	115	117	127	131	134	134	133	135	135	135	134	135
Cheese (excluding cottage) (lbs)	20	21	22	23	23	24	24	24	25	25	26	26	27	27	28	28	28
All mfg. dairy products (lbs)[a]	332	353	320	339	347	335	347	333	357	348	339	329	342	345	346	347	362
Fresh fruits (lbs)	103	105	107	105	112	116	115	117	111	108	118	119	121	119	123	127	127
Fresh vegetables (lbs)[c]	89	87	93	96	94	101	105	109	107	104	109	109	112	112	117	123	123
Fresh potatoes (lbs)	71	74	75	74	77	77	76	79	75	81	79	81	84	83	86	83	83
Coffee (lbs)	7	8	8	8	8	8	7	8	8	8	8	7	6	6	7	7	7
Sugar (lbs)	74	70	67	63	60	62	62	63	64	64	65	64	65	66	67	67	67
Carbonated soft drinks (gals)	35	35	36	36	36	42	45	45	46	48	49	50	51	52	52	53	53

[a]Farm level fluid milk equivalent.
[b]Product weight.
[c]Excludes potatoes.

Table A22 Distribution of Total U.S. Population by Age Groups, Disposable Income, Disposable Income Spent on Food, CPI for Food, Real Expenditures on Food, and Number of Families, 1950–98

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Total population including military (1,000)	152,271	154,878	157,553	160,184	163,026	165,931	168,903	171,984	174,882	177,830	180,671	183,691	186,538	189,242	191,889	194,303
Annual % change	1.8	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.7	1.7	1.6	1.7	1.5	1.4	1.4	1.3
Percentage of total population by age group:																
Less than 5 years	10.8	11.2	11.0	11.0	11.1	11.2	11.3	11.3	11.4	11.3	11.3	11.2	11.0	10.7	10.5	10.2
5–14 years	17.5	17.6	18.3	18.9	19.3	19.7	20.1	20.5	20.8	21.0	21.3	21.6	22.1	22.0	22.0	22.1
15–19 years	5.6	5.5	5.3	5.3	5.3	5.3	5.3	5.3	5.5	5.7	5.9	6.0	6.0	6.3	6.6	7.0
20–24 years	7.7	7.5	7.2	6.9	6.6	6.5	6.3	6.2	6.2	6.2	6.2	6.3	6.4	6.7	6.9	7.1
25–44 years	30.0	29.8	29.5	29.2	28.8	28.4	28.1	27.6	27.1	26.5	26.1	25.6	25.2	24.8	24.5	24.1
45–64 years	20.3	20.2	20.2	20.2	20.2	20.2	20.2	20.1	20.1	20.1	20.0	20.0	20.0	20.0	20.0	20.0
Over 64 years	8.1	8.3	8.4	8.5	8.6	8.8	8.8	8.9	9.0	9.1	9.2	9.3	9.4	9.4	9.4	9.5
Per capita disposable income																
Current dollars	1,350	1,451	1,500	1,565	1,568	1,648	1,724	1,785	1,813	1,975	2,027	2,082	2,174	2,250	2,413	2,568
Deflated by CPI (1990–92=100)	5,600	5,581	5,662	5,861	5,830	6,148	6,340	6,351	6,275	6,787	6,848	6,962	7,200	7,353	7,783	8,151
CPI for food (1990–92=100)	25.4	28.2	28.7	28.3	28.2	27.8	28.0	28.9	30.2	29.7	30.0	30.4	30.6	31.1	31.5	32.2
Real per capita expenditures on food[a]	212	215	223	231	237	247	255	260	258	272	276	279	285	288	300	314
Percentage of all families with children:																
Under 18	50.9	52.4	52.3	52.7	53.7	54.1	54.6	55.5	55.5	55.6	56.4	55.8	55.8	56.6	56.4	55.9
Under 18 and a single parent	3.8	4.7	4.3	4.4	4.5	5.0	4.9	4.9	4.8	4.8	5.1	5.1	5.3	5.4	5.5	5.6
Percentage of all families with a married couple	86.5	86.7	87.6	87.6	86.8	86.7	87.0	87.2	87.2	87.2	87.0	87.0	87.0	86.9	86.8	86.8
Percentage of married-couple families with two wage-earners	20.3	22.9	25.6	25.2	24.7	26.3	27.1	28.1	28.5	28.6	30.3	30.6	31.8	32.4	32.8	33.7
Percentage of all families below the poverty threshold	—[b]	—	—	—	—	—	—	—	—	18.4	18.1	18.1	17.2	15.9	14.9	13.9

[a] Personal consumption expenditures for food deflated by CPI for food (1990–92=100).
[b] Data not available.

(Continued)

Table A22 (*Continued*)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Total population including military (1,000)	196,560	198,752	200,745	202,736	205,052	207,667	209,896	211,909	213,854	215,973	218,035	220,239	222,585	225,055	227,726	229,966
Annual % change	1.2	1.1	1.0	1.0	1.1	1.3	1.1	1.0	0.9	1.0	1.0	1.0	1.1	1.1	1.2	1.0
Percentage of total population by age group:																
Less than 5 years	9.8	9.3	8.9	8.6	8.4	8.3	8.1	8.0	7.7	7.5	7.2	7.1	7.1	7.1	7.2	7.3
5–14 years	22.2	22.3	22.2	22.1	21.9	21.5	21.1	20.6	20.1	19.7	19.3	18.8	18.2	17.6	17.1	16.6
15–19 years	7.3	7.1	7.2	7.3	7.5	7.6	7.6	7.8	7.8	7.9	7.9	7.8	7.8	7.7	7.5	7.3
20–24 years	7.1	7.7	7.9	8.1	8.4	8.7	8.6	8.7	8.9	9.0	9.2	9.3	9.4	9.5	9.5	9.5
25–44 years	23.9	23.7	23.8	23.7	23.6	23.6	24.1	24.4	24.8	25.1	25.6	26.1	26.7	27.3	27.9	28.5
45–64 years	20.1	20.2	20.3	20.4	20.5	20.5	20.4	20.4	20.4	20.3	20.2	20.0	19.9	19.7	19.5	19.4
Over 64 years	9.5	9.6	9.6	9.7	9.8	9.9	10.0	10.2	10.3	10.5	10.7	10.8	11.0	11.2	11.3	11.4
Per capita disposable income																
Current dollars	2,743	2,899	3,119	3,329	3,592	3,861	4,138	4,620	5,014	5,470	5,962	6,520	7,255	8,034	8,869	9,775
Deflated by CPI (1990–92 = 100)	8,465	8,680	8,964	9,072	9,257	9,532	9,900	10,405	10,171	10,168	10,478	10,759	11,127	11,067	10,764	10,753
CPI for food (1990–92 = 100)	33.8	34.1	35.3	37.1	39.2	40.4	42.1	48.2	55.1	59.8	61.6	65.5	72.0	79.9	86.8	93.6
Real per capita expenditures on food[a]	323	330	346	354	367	371	383	373	366	373	394	401	402	406	410	410
Percentage of all families with children:																
Under 18	54.9	55.0	55.0	55.0	55.2	54.0	54.2	53.7	53.4	53.4	53.2	52.7	52.5	51.0	51.4	51.2
Under 18 and a single parent	5.5	5.8	6.0	6.2	6.3	6.9	7.3	7.6	8.0	8.7	8.9	9.2	9.9	9.8	10.0	10.3
Percentage of all families. with a married couple	86.5	86.4	86.3	86.1	85.7	85.8	85.2	85.0	84.5	84.1	83.8	82.8	82.5	82.5	81.7	81.3
Percent of married-couple families with two wage-earners	35.3	36.6	38.0	39.3	39.3	39.9	40.8	41.6	43.3	44.0	45.4	46.3	48.2	49.2	50.2	50.4
Percent of all families below the poverty threshold	11.8	11.3	9.9	9.7	10.1	10.0	9.3	8.8	8.8	9.7	9.4	9.3	9.1	9.2	10.3	11.2

[a]Personal consumption expenditures for food deflated by CPI for food (1990–92 = 100).
[b]Data not available.

Table A22 (*Continued*)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total population including military (1,000)	232,188	234,307	236,348	238,466	240,651	242,804	245,021	247,342	249,948	252,639	255,374	258,083	260,599	263,044	265,463	268,008	270,561
Annual % change	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.1	1.1	1.1	1.1	1.0	0.9	0.9	1.0	1.0
Percentage of total population by age group:																	
Less than 5 years	7.4	7.5	7.5	7.5	7.5	7.4	7.4	7.5	7.5	7.6	7.6	7.6	7.6	7.4	7.3	7.1	7.0
5–14 years	16.3	16.0	15.8	15.7	15.5	15.4	15.3	15.4	15.4	15.5	15.6	15.6	15.7	15.8	15.9	15.9	15.9
15–19 years	7.0	6.8	6.5	6.3	6.2	6.3	6.2	6.0	5.8	5.5	5.4	5.4	5.4	5.5	5.6	5.7	5.8
20–24 years	9.4	9.3	9.2	9.0	8.7	8.4	8.1	7.9	7.7	7.7	7.5	7.3	7.1	6.9	6.6	6.6	6.6
25–44 years	29.2	29.8	30.4	30.9	31.4	31.9	32.1	32.3	32.5	32.6	32.3	32.1	31.9	31.7	31.6	31.2	30.8
45–64 years	19.1	19.0	18.8	18.7	18.6	18.5	18.6	18.6	18.5	18.5	18.9	19.2	19.5	19.9	20.2	20.7	21.2
Over 64 years	11.5	11.7	11.8	11.9	12.1	12.2	12.3	12.4	12.5	12.6	12.6	12.7	12.7	12.8	12.8	12.8	12.7
Per capita disposable income																	
Current dollars	10,366	11,037	12,218	12,943	13,557	14,248	15,315	16,238	17,178	17,712	18,618	19,123	19,821	20,615	21,388	22,323	23,234
Deflated by CPI (1990–92 = 100)	10,742	11,081	11,759	12,029	12,370	12,542	12,946	13,095	13,143	13,005	13,270	13,234	13,375	13,527	13,632	13,909	14,254
CPI for food (1990–92 = 100)	97.4	99.4	103.2	105.6	109.0	113.5	118.2	125.1	132.4	136.3	137.9	140.9	144.3	148.4	153.3	157.3	160.7
Real per capita expenditures on food[a]	414	426	434	443	451	454	468	473	481	482	485	495	505	509	513	519	531
Percentage of all families with children:																	
Under 18	50.5	49.7	49.5	49.0	49.1	48.9	48.5	48.9	48.7	48.2	48.0	48.5	49.1	49.3	48.7	48.9	49.0
Under 18 and a single parent	10.7	10.4	10.7	10.9	10.9	11.1	11.1	11.5	11.7	11.9	12.2	12.5	12.9	13.0	13.2	13.5	13.5
Percentage of all families with a married couple	81.3	80.8	80.3	80.1	79.9	79.3	79.1	79.2	78.6	78.1	77.8	77.6	77.7	77.0	76.3	76.6	76.6
Percentage of married-couple families with two wage-earners	51.1	52.3	53.5	54.0	55.3	56.1	57.0	57.7	58.1	58.9	59.1	60.5	61.1	61.0	62.0	61.7	61.7
Percentage of all families below the poverty threshold	12.2	12.3	11.6	11.4	10.9	10.7	10.4	10.3	10.7	11.5	11.9	12.3	11.6	10.8	11.0	10.3	10.3

[a]Personal consumption expenditures for food deflated by CPI for food (1990–92 = 100).

Table A23 Farmers' Share of Retail Food Dollar and Components of the Food Marketing Bill, 1950–98

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Farmers' share of retail value (%) of																
Market basket of food products	47	49	47	44	43	41	40	40	40	38	38	38	38	37	36	38
Meat products	65	66	62	59	59	53	51	53	57	53	57	55	58	54	53	59
Beef	74	77	74	66	68	66	65	65	67	66	66	63	69	63	61	66
Pork	64	63	60	67	65	54	52	55	58	46	55	56	55	53	52	62
Poultry products	67	67	68	65	61	65	58	57	57	55	59	54	56	55	54	57
Eggs	67	71	68	70	64	68	67	65	66	60	65	63	60	61	61	62
Fats and oils	38	42	34	38	39	33	36	34	28	27	28	33	28	28	29	31
Fresh fruit	40	38	45	43	40	36	36	36	36	35	37	36	34	36	34	31
Fresh vegetables	37	40	44	36	34	35	36	32	33	33	34	30	32	30	33	35
Processed fruits and vegetables	18	18	18	18	18	18	18	18	18	19	18	18	17	18	20	21
Bakery products	26	27	25	25	25	23	23	22	20	19	16	17	17	17	17	17
Components of food marketing bill as a percentage of total																
Labor	46.9	45.3	45.2	46.3	47.4	45.6	44.9	44.3	43.3	42.2	42.3	41.9	42.0	41.5	41.2	43.1
Fuel and electricity	—[a]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Transportation	10.4	9.4	10.2	10.5	10.5	9.9	10.2	10.3	10.4	10.0	9.7	10.0	9.8	9.6	9.2	7.8
Profits before taxes	6.2	4.5	4.6	4.8	4.6	5.2	5.2	5.0	4.8	5.0	4.8	4.9	4.7	4.9	5.5	5.6
Packaging	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

[a]Data not available.

Table A23 (*Continued*)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Farmers' share of retail value (%) of																
Market basket of food products	39	37	38	39	37	37	39	44	41	40	38	37	38	38	37	35
Meat products	58	56	54	56	53	52	56	60	54	57	51	53	54	52	51	49
Beef	64	65	66	65	63	65	64	66	62	64	57	58	61	62	61	58
Pork	60	55	53	58	51	46	56	62	53	59	53	52	53	46	45	46
Poultry products	53	49	57	51	46	47	49	59	56	59	55	51	58	55	55	52
Eggs	66	59	61	67	63	57	57	70	68	66	68	64	65	66	64	66
Fats and oils	32	28	26	26	30	32	27	38	47	34	32	36	34	34	29	27
Fresh fruit	32	32	35	31	28	30	30	33	30	30	28	29	32	29	26	26
Fresh vegetables	34	32	33	33	32	33	32	35	34	35	33	33	30	28	27	31
Processed fruits and vegetables	20	18	20	21	19	18	19	19	22	21	20	19	25	23	23	23
Bakery products	18	17	16	16	16	16	17	22	25	19	15	12	13	14	14	13
Components of food marketing bill as a percentage of total																
Labor	43.1	41.5	42.5	44.5	42.9	43.9	44.4	45.6	45.1	43.4	43.0	43.9	44.9	45.2	44.6	44.2
Fuel and electricity	—[a]	—	—	—	2.9	3.1	3.0	3.2	3.8	4.1	4.0	4.5	4.8	4.9	4.9	4.9
Transportation	7.4	6.9	6.8	6.7	6.9	7.6	7.4	7.3	7.6	7.5	7.3	7.3	7.1	7.1	7.1	6.9
Profits before taxes	6.0	5.4	5.5	5.3	4.8	5.0	4.9	6.2	6.2	6.4	6.1	6.0	6.7	6.0	5.4	4.7
Packaging	—	11.7	11.5	11.6	10.9	10.8	10.8	10.8	12.0	11.9	11.6	11.4	11.3	11.2	11.5	11.0

[a]Data not available.

(*Continued*)

Table A23 (*Continued*)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Farmers' share of retail value (%) of																	
Market basket of food products	34	33	34	32	31	31	30	30	30	27	26	26	24	24	25	23	22
Meat products	50	48	49	47	47	47	45	45	46	42	41	40	36	35	36	36	30
Beef	58	57	58	55	54	57	59	59	60	56	57	56	51	49	48	49	47
Pork	50	45	48	44	46	44	38	38	41	37	34	37	32	34	43	39	25
Poultry products	51	53	56	53	54	45	49	48	44	42	42	44	43	42	44	41	43
Eggs	63	65	65	61	61	54	53	58	56	54	46	49	47	49	52	46	42
Fats and oils	22	27	31	26	19	19	25	21	23	20	19	22	25	24	22	21	22
Fresh fruit	27	23	28	30	27	27	25	22	23	28	20	22	18	19	20	18	17
Fresh vegetables	29	29	29	31	28	31	28	29	28	24	26	26	24	23	20	21	20
Processed fruits and vegetables	20	19	20	26	23	24	28	25	26	22	23	19	20	21	20	19	18
Bakery products	11	11	11	11	8	8	9	9	8	7	8	7	8	8	7	7	6
Components of food marketing bill as a percent of total																	
Labor	44.4	44.6	45.1	44.6	45.4	45.6	45.7	46.0	44.8	44.3	45.6	46.9	46.2	47.3	48.2	48.8	48.9
Fuel and electricity	5.1	5.1	5.2	5.1	4.9	4.8	4.7	4.7	4.4	4.5	4.5	4.5	4.4	4.5	4.6	4.5	4.4
Transportation	6.8	6.7	6.6	6.4	6.2	6.0	5.9	5.9	5.8	5.6	5.6	5.6	5.4	5.4	5.4	5.3	5.2
Profits before taxes	4.3	4.2	4.0	4.0	3.8	3.9	4.0	4.1	3.8	4.2	4.3	4.8	5.2	4.7	4.9	4.8	4.8
Packaging	10.9	10.8	10.8	10.4	10.2	10.5	10.8	11.2	10.6	10.5	10.9	10.8	10.8	11.6	11.2	11.0	10.8

Table A24 Agricultural Cooperatives, Cooperative Membership, and Cooperative Share of Business, 1950–98

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Number of cooperatives per 1,000 farms																
Marketing cooperatives	1.23	1.20	1.27	1.30	1.34	1.36	1.39	1.44	1.45	1.47	1.47	1.50	1.52	1.54	1.57	1.58
Farm supply cooperatives	0.55	0.60	0.64	0.68	0.70	0.72	0.75	0.77	0.80	0.83	0.83	0.84	0.87	0.90	0.93	0.92
Cooperative membership per farm																
Marketing cooperatives	0.72	0.76	0.81	0.85	0.89	0.91	0.94	0.94	0.92	0.94	0.91	0.91	0.93	1.00	1.05	1.13
Farm supply cooperatives	0.44	0.53	0.58	0.63	0.68	0.71	0.76	0.80	0.84	0.89	0.91	0.96	0.98	1.01	0.99	0.97
Volume of cooperative business as a percentage of cash receipts from farm marketings or of purchased inputs[a]																
Marketing coops	22.1	19.4	22.7	23.8	24.6	25.2	24.7	26.9	24.9	27.1	27.2	27.4	27.9	28.9	30.0	29.3
Supply coops	18.3	16.3	18.7	22.1	20.8	21.2	21.1	21.2	19.2	19.9	20.9	20.2	19.4	19.4	21.2	20.4

[a]All purchased inputs except labor, contract machine hire, and machinery and building repairs.

(*Continued*)

Table A24 (*Continued*)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Number of cooperatives per 1,000 farms																
Marketing cooperatives	1.59	1.61	1.61	1.59	1.64	1.76	1.70	1.73	1.73	1.89	1.87	1.63	1.61	1.57	1.56	1.53
Farm supply cooperatives	0.91	0.91	0.92	0.93	0.94	0.94	0.97	0.99	0.99	1.08	1.09	1.06	1.05	1.03	0.97	0.97
Cooperative membership per farm																
Marketing cooperatives	1.12	1.04	1.05	1.05	1.05	1.07	1.10	1.10	1.11	1.24	1.13	1.08	1.07	1.04	1.04	1.00
Farm supply cooperatives	0.97	1.00	1.04	1.06	1.09	1.04	1.05	1.06	1.06	1.18	1.22	1.25	1.26	1.26	1.15	1.17
Volume of cooperative business as a percentage of cash receipts from farm marketings or of purchased inputs[a]																
Marketing coops	28.1	30.1	29.9	27.9	29.3	30.0	26.9	22.5	29.2	35.9	31.2	33.4	31.4	31.7	35.0	37.6
Supply coops	19.1	19.8	21.1	19.8	14.7	20.7	20.5	19.1	23.4	26.0	25.4	27.3	24.3	24.9	27.3	28.9

[a]All purchased inputs except labor, contract machine hire, and machinery and building repairs.

Table A24 (*Continued*)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Number of cooperatives per 1,000 farms																	
Marketing cooperatives	1.54	1.53	1.51	1.50	1.45	1.38	1.36	1.17	1.17	1.13	1.05	1.01	0.99	0.94	0.92	0.89	0.86
Farm supply cooperatives	0.96	0.93	0.92	0.89	0.88	0.88	0.83	0.83	0.80	0.80	0.77	0.70	0.68	0.66	0.64	0.63	0.62
Cooperative membership per farm																	
Marketing cooperatives	1.02	0.97	0.99	0.97	0.95	0.92	0.87	0.85	0.88	0.87	0.87	0.83	0.82	0.78	0.77	0.68	0.67
Farm supply cooperatives	1.11	1.07	1.03	1.05	1.03	1.03	0.97	0.94	0.93	0.96	0.96	0.90	0.88	0.84	0.82	0.71	0.68
Volume of cooperative business as a percentage of cash receipts from farm marketings or of purchased inputs[a]																	
Marketing coops	36.1	36.1	38.2	32.8	30.7	31.2	32.5	33.0	34.1	33.5	34.0	34.3	36.2	36.9	39.9	37.4	37.8
Supply coops	29.6	29.6	30.2	32.7	30.0	27.3	26.5	28.0	26.8	28.0	29.0	28.7	30.4	30.0	31.9	32.2	31.0

[a]All purchased inputs except labor, contract machine hire, and machinery and building repairs.

Appendix 2

Table A25 Economic Activity in the U.S. Food-Processing Industries, 1954–92

	1954	1958	1963	1967	1972	1977	1982	1987	1992
Food and kindred products industry (SIC 20)[a]									
Establishments (thou)	36.8	42.4	41.6	37.5	28.2	26.7	22.1	20.6	20.8
Workers (thou)	1,138	1,138	1,098	1,122	1,085	1,072	1,121	1,030	1,100
Workers/establishment	31	27	26	30	39	40	51	50	53
Workers as % of U.S. employment	18.9	18.0	16.2	15.1	13.2	11.7	11.3	9.2	9.4
Profits as % of sales[b]	3.5	3.6	4.0	4.1	3.5	4.0	3.1	3.8	4.1
Real value added/estab ($thou)[c]	1,838	1,943	2,327	2,883	4,103	4,710	5,605	7,072	7,298
Real value added/worker ($thou)	59	72	88	96	107	117	111	142	138
Real value added per capita ($)	415	471	512	544	551	570	534	601	594
Meat industry (SIC 201)[a]									
Establishments (thou)	5.0	5.5	5.3	4.9	4.4	4.5	4.2	3.3	3.2
Workers (thou)	243	243	239	249	251	254	371	284	342
Workers/establishment	49	44	45	51	56	56	89	87	106
Workers as % of U.S. employment	4.0	3.9	3.5	3.3	3.1	2.8	3.7	2.5	2.9
Profits as % of sales[b]	0.7	0.6	1.0	1.3	1.0	1.7	0.9	1.0	1.4
Real value added/estab ($thou)[c]	1,952	2,124	2,413	2,936	3,630	3,694	4,495	5,025	5,664
Real value added/worker ($thou)	40	48	54	58	64	66	50	58	54
Real value added per capita ($)	60	67	68	73	77	76	80	68	72
Value added as % of value added in all food manufacturing	14.4	14.3	13.2	13.3	13.9	13.3	15.1	11.3	12.1
Dairy industry (SIC 202)[a]									
Establishments (thou)	11.5	9.9	7.9	6.2	4.6	3.7	2.7	2.4	2.0
Workers (thou)	153	142	117	107	93	85	83	88	86
Workers/establishment	13	14	15	17	20	23	30	37	43
Workers as % of U.S. employment	2.5	2.3	1.7	1.4	1.1	0.9	0.8	0.8	0.7
Profits as % of sales[b]	3.9	3.2	3.3	3.5	3.3	3.8	3.8	3.5	1.8
Real value added/estab ($thou)[c]	990	1,363	1,792	2,276	2,868	3,391	4,316	6,014	7,680
Real value added/worker ($thou)	74	95	121	131	142	149	142	162	180
Real value added per capita ($)	70	77	75	71	63	57	51	59	61
Value added as % of value added in all food manufacturing	16.8	16.4	14.6	13.0	11.4	10.1	9.5	9.8	10.2
Preserved fruits and vegetables (SIC 203)[a]									
Establishments (thou)	3.5	3.7	4.0	3.5	2.6	2.4	1.7	1.9	2.0
Workers (thou)	175	193	212	227	199	199	150	173	176
Workers/establishment	50	52	54	64	78	84	88	90	86
Workers as % of U.S. employment	2.9	3.1	3.1	3.0	2.4	2.2	1.5	1.5	1.5
Profits as % of sales[b]	4.0	4.6	5.2	5.1	3.4	4.4	4.0	4.3	5.7
Real value added/estab ($thou)[c]	1,869	2,411	3,106	4,133	5,732	7,234	8,468	10,794	10,405
Real value added/worker ($thou)	37	46	58	64	74	87	96	119	121
Real value added per capita ($)	40	51	65	73	70	78	62	85	83
Value added as % of value added in all food manufacturing	9.7	10.8	12.7	13.5	12.7	13.7	11.6	14.1	14.0

[a] SIC = standard industrial code as used by the Bureau of the Census.

[b] Profits as a percentage of sales based on data from U.S. Department of Treasury, Statistics of "Income, Corporation Income Tax Returns." Internal Revenue Service.

[c] "Real" value added refers to value added by manufacture deflated by the CPI (1990–92 = 100).

Table A25 (*Continued*)

	1954	1958	1963	1967	1972	1977	1982	1987	1992
Bakery industry (SIC 205)[a]									
Establishments (thou)	6.4	6.3	5.4	4.4	3.6	3.4	2.7	2.9	3.2
Workers (thou)	179	180	164	160	143	131	124	128	134
Workers/establishment	28	28	31	36	39	39	47	45	42
Workers as % of U.S. employment	3.0	2.8	2.4	2.1	1.7	1.4	1.2	1.1	1.1
Profits as % of sales[a]	4.6	4.5	3.8	4.4	3.4	3.5	4.2	3.0	2.4
Real value added/estab ($thou)[b]	1,555	1,958	2,506	3,235	4,055	4,679	5,625	6,394	5,506
Real value added/worker ($thou)	56	69	82	89	103	121	121	142	130
Real value added per capita ($)	61	71	71	71	70	72	65	75	68
Value added as % of value added in all food manufacturing	14.8	15.0	13.9	13.1	12.7	12.6	12.1	12.5	11.4
Sugar and confectionery products industry (SIC 206)[a]									
Establishments (thou)	1.6	1.6	1.4	1.4	1.2	1.2	1.0	1.1	1.1
Workers (thou)	91	88	89	94	87	84	77	72	72
Workers/establishment	56	55	63	66	69	70	75	66	63
Workers as % of U.S. employment	1.5	1.4	1.3	1.3	1.1	0.9	0.8	0.6	0.6
Profits as % of sales[a]	11.5	13.0	14.8	13.0	2.6	3.5	4.8	3.7	5.8
Real value added/estab ($thou)[b]	2,627	3,213	4,809	5,429	6,428	7,760	8,488	9,750	9,376
Real value added/worker ($thou)	47	58	77	82	92	111	114	147	148
Real value added per capita ($)	26	29	36	39	38	42	38	44	41
Value added as % of value added in all food manufacturing	6.3	6.2	7.1	7.1	6.9	7.4	7.1	7.3	7.0
Fats and oils industry (SIC 207)[a]									
Establishments (thou)	—[d]	0.9	1.1	0.9	0.9	0.9	0.7	0.6	0.5
Workers (thou)	—	31	32	31	29	30	27	20	21
Workers/establishment	—	34	30	35	34	34	38	34	39
Workers as % of U.S. employment	—	0.5	0.5	0.4	0.4	0.3	0.3	0.2	0.2
Profits as % of sales[e]	6.3	4.6	4.2	2.7	4.1	4.0	2.2	3.2	3.0
Real value added/estab ($thou)[b]	—	2,996	3,133	4,240	4,872	4,910	5,411	6,518	6,781
Real value added/worker ($thou)	—	89	105	120	143	144	144	190	175
Real value added per capita ($)	—	16	18	19	20	19	17	16	14
Value added as % of value added in all food manufacturing	—	3.4	3.5	3.5	3.6	3.4	3.2	2.7	2.4
Beverages industry (SIC 208)[a]									
Establishments (thou)	5.4	5.6	5.0	4.4	3.6	3.1	2.6	2.2	2.1
Workers (thou)	119	115	109	114	107	100	95	77	75
Workers/establishment	22	21	22	26	29	32	37	35	36
Workers as % of U.S. employment	2.0	1.8	1.6	1.5	1.3	1.1	1.0	0.7	0.6
Profits as % of sales[a]	7.2	8.7	9.3	8.2	7.9	9.6	5.1	4.9	6.7
Real value added/estab ($thou)[b]	2,097	2,396	3,293	4,448	5,993	7,144	9,081	12,248	13,611
Real value added/worker ($thou)	95	116	152	171	203	223	246	351	377
Real value added per capita ($)	69	76	87	98	103	101	101	112	110
Value added as % of value added in all food manufacturing	16.7	16.2	17.1	18.0	18.8	17.7	18.9	18.6	18.5

[a]SIC = standard industrial code as used by the Bureau of the Census.

[b]Profits as a percent of sales based on data from U.S. Department of Treasury, Statistics of "Income, Corporation Income Tax Returns." Internal Revenue Service.

[c]"Real" value added refers to value added by manufacture deflated by the CPI (1990–92 = 100).

[d]Data not available.

[e]Data for this industry is not available from the Internal Revenue Service. This ratio is for IRS's "other food and kindred products" classification.

Appendix 2

Table A26 Economic Activity in U.S. Farm Machinery and Agricultural Chemical Industries, 1954–92

	1954	1958	1963	1967	1972	1977	1982	1987	1992
Farm machinery and equipment (SIC 3523)[a]									
Establishments (thou)	1.4	1.5	1.6	1.6	1.5	2.0	1.9	1.6	1.7
Workers (thou)	106	80	85	104	80	96	63	39	43
Real value added/estab ($thou)[b]	3,895	3,478	3,759	5,127	4,718	5,425	3,844	2,713	3,037
Real value added/worker ($thou)	50	64	70	80	91	113	116	113	117
Real value added per capita ($)	32	29	31	42	35	49	32	18	20
Profits as % of sales[c]	6.3	6.2	4.2	5.0	3.9	4.9	1.2	2.4	1.4
Workers/establishment	78	54	54	64	52	48	33	24	26
Workers as % of U.S. employment	1.8	1.3	1.2	1.4	1.0	1.0	0.6	0.3	0.4
Agricultural chemicals (SIC 287)[a]									
Establsihments (thou)	1.0	1.3	1.4	1.3	1.2	1.3	1.1	1.0	0.9
Workers (thou)	21	27	29	31	31	35	32	24	25
Real value added/estab ($thou)[b]	1,595	1,493	2,058	3,198	4,573	6,441	6,361	7,807	9,390
Real value added/worker ($thou)	76	71	95	132	182	241	226	310	331
Real value added per capita ($)	10	11	15	21	27	39	31	31	33
Profits as % of sales[c]	5.0	3.2	4.0	2.1	6.3	4.7	3.5	4.6	4.9
Workers/establishment	21	21	22	24	25	27	28	25	28
Workers as % of U.S. employment	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.2	0.2

[a] SIC = standard industrial code as used by the Bureau of the Census.

[c] "Real" value added refers to value added by manufacture or retail sales deflated by the CPI (1990–92 = 100).

[b] Profits as a percentage of sales based on data from U.S. Department of Treasury, "Statistics of Income, Corporation Income Tax Returns." Internal Revenue Service.

Table A27 Economic Activity in U.S. Wholesale Groceries and Related Products, Retail Food Stores, and Eating and Drinking Places, 1954–92

	1954	1958	1963	1967	1972	1977	1982	1987	1992
Wholesale groceries									
Establsihments (thou)	36.3	42.8	41.9	40.1	38.5	38.0	38.5	42.1	42.9
Population/establishment	4,486	4,085	4,518	4,962	5,447	5,802	6,028	5,771	5,957
Real sales/establishment ($thou)[a]	6,044	5,401	6,236	7,553	8,970	10,791	10,541	10,818	11,386
Real sales/worker ($thou)	508	481	519	606	596	681	603	597	601
Real sales/population($)	1,347	1,322	1,380	1,522	1,647	1,860	1,749	1,875	1,911
Profits as % of sales[b]	1.0	0.9	0.7	1.1	1.3	1.3	1.3	1.2	1.2
Workers/establishment	11.9	11.2	12.0	12.5	15.0	15.9	17.5	18.1	18.9
Workers as % of U.S. employment	0.7	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Retail food stores									
Establishments (thou)	384.6	355.5	319.4	294.2	267.4	252.0	189.5	190.7	180.6
Population/establishment	424	492	592	675	785	874	1,225	1,273	1,414
Real sales/establishment ($thou)[a]	522	648	793	970	1,223	1,404	1,785	1,891	1,978
Real sales/worker ($thou)	196	195	199	198	190	181	144	126	120
Real sales/population($)	1,231	1,317	1,338	1,436	1,558	1,606	1,457	1,485	1,399
Profits as % of sales[b]	2.0	1.9	1.7	1.6	1.0	1.3	1.2	1.2	1.1
Workers/establishment	2.7	3.3	4.0	4.9	6.4	7.8	12.4	15.0	16.4
Workers as % of U.S. employment	1.7	1.9	1.9	1.9	2.1	2.1	2.4	2.5	2.5
Eating and drinking places									
Establishments (thou)	169.9	229.8	223.9	236.6	253.1	274.3	284.1	332.6	433.6
Population/establishment	960	761	845	840	829	803	817	730	589
Real sales/establishment ($thou)[a]	240	226	276	324	390	454	461	500	436
Real sales/worker ($thou)	41	39	41	44	43	36	30	29	29
Real sales/population($)	251	296	326	386	470	565	564	685	740
Profits as % of sales[b]	1.1	1.3	2.1	2.8	2.7	3.0	2.6	1.7	1.7
Workers/establishment	5.9	5.7	6.7	7.3	9.2	12.5	15.3	17.4	15.1
Workers as % of U.S. employment	1.7	2.1	2.2	2.3	2.8	3.7	4.4	5.1	5.6
Sales in eating places and drinking places *as a percent of total retail* food sales	16.9	18.4	19.6	21.2	23.2	26.0	27.9	31.6	34.6

[a] "Real" sales refers to retail sales deflated by the CPI (1990–92 = 100).

[b] Profits as a percent of sales based on data from U.S. Department of Treasury, "Statistics of Income, Corporation Income Tax Returns." Internal Revenue Service.

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