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Agricultural Income and Finance Outlook

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Value Added and Net Farm Income Down for 2002

Net value added is forecast at $82.4 billion for 2002, down $8.5 billion (9.3 percent) from 2001. Net value added is a measure of the contribution of agricultural production to the national and State economies. It is also a measure of the income earned by those participants who contribute resources for a predetermined payment (stakeholders) and those who contribute resources with the expectation of receiving additional financial rewards for sharing in the risks of production.

Average farm household income for 2002 is forecast at $63,237, down just over 1 percent from last year. Continued weak recovery of the general economy has not provided much of a boost to the Nation's labor market. Higher unemployment rate have led to slower wage growth, so little change is expected in the income farmers receive from off-farm sources.

For 2002, net farm income is forecast to be $36.2 billion, down 21 percent from 2001. The impacts of this decline will vary greatly by farm depending on the commodities produced and the business arrangements under which they are produced.

Overview

Agriculture's contribution to the national economy (*net value added*) is currently forecast down from last year and from the generally high levels of the past 6 years (table 1). This decline is primarily due to much lower livestock and dairy value of production, with expenses essentially unchanged from last year. Most of the drop in livestock output will be borne by the poultry, hog, and dairy industries, which together will account for over $8 billion of the $9-plus billion reduction in livestock output this year. Much of the production of poultry and hogs occurs under contractual arrangements that determine how output value will be shared among stakeholders, making it difficult to determine the financial impacts of the reduction in output on different stakeholders.

A wide array of stakeholders provide inputs and services used and will earn a share of agriculture's output. One of the more commonly known group of stakeholders, farm operator households, are expected to earn about 33 percent of value added to the national economy by agriculture. Other contributors such as hired laborers, lenders, landlords, contractors, and households of partners earn the remaining two thirds of value added. Among these groups, landlords will earn about 18 percent of farm output while labor and lenders will earn 20 percent and 13 percent, respectively.

Table 1--Value-added to the U.S. economy by the agricultural sector via the production of goods and services, 2000-02

		2000	2001	2002F	1992-2001 avg
			$ billion		
	Value of crop production	95.0	93.9	96.6	97.8
+	Value of livestock production	99.3	106.3	96.8	94.1
+	Revenues from services and forestry	24.4	25.5	26.5	21.2
=	**Value of agricultural sector production**	218.8	225.8	219.9	213.1
-	Purchased inputs	121.9	127.5	126.0	112.7
+	Net government transactions	15.5	13.2	9.3	5.9
=	**Gross value added**	112.4	111.4	103.3	106.2
-	Capital consumption	20.3	20.6	20.9	19.4
=	**Net value added**	92.1	90.9	82.4	86.8
-	Payments to stakeholders	44.0	45.2	46.3	39.9
=	**Net farm income**	48.0	45.7	36.2	46.9

F = forecast. Numbers may not add due to rounding.

Source: Economic Research Service/USDA.

Income for the average farm household will drop slightly this year. Off-farm earnings are up but not as much as the drop in farm earnings has dropped. Examining the sources of household income shows that farm households earn income from a variety of non-wage and salary sources, including multiple farms, non-farm business operations, financial assets, and both public and private retirement funds. The breadth of employers and types of jobs held by farmers and/or their spouses in conjunction with commuting and residential location information help underpin the importance of economic conditions in the non-farm sector to farm households. For a large share of farm households a wide range of employment and other economic policies may be double edged, affecting the farm household not only as employees but also as employers of labor as self-employed persons operating a range of business interests.

Households associated with larger, more commercial farm businesses where income from farming is the major source of earnings will feel most of the impacts of lower farm output value. To combat shrinking revenues, many of these farmers take steps to control or reduce costs. In 2001 for example, corn producers were the most likely to control costs by forward purchasing inputs and negotiating input prices. Since nitrogen fertilizer prices were sharply higher in 2001 and corn producers are the largest users of nitrogen fertilizers, fertilizer cost control was likely very important to corn producers. Cotton production uses relatively more inputs than other crops and thus is afforded more opportunities for input reduction, such as less pesticide use with biotech cotton. In contrast, wheat and soybean production uses relatively few inputs. Cotton producers were also more likely to control costs by refinancing loans, and by long-term strategies that include expanding the operation and adopting cost-saving technologies. Cost containment is similarly important for livestock producers, particularly among dairy operations.

Who Holds a Stake in U.S. Agriculture?

Within agriculture, net value added is shared among a variety of resource owners (or stakeholders). Fifty years ago, farm operators owned most of the factors of production used in agriculture, but today many other stakeholders are engaged in farming. Over a third of U.S. farms rent land, so landlords receive a combina-

tion of cash and in-kind products. In some subsectors, like broilers and hogs, contractors receive most of the value of production with producers receiving a fee per pound, hundredweight, or some other measure of output for providing labor, capital, or other inputs such as fuel or utilities. Changes in the commodities' prices may have little effect on farmers with production contracts since the fee received by farmers would tend to be fixed by contract arrangements.

Out of net value added are payments to those who provide inputs or services but do not directly share in market, production, financial, or other risks, like the landlords who receive rents, lenders who earn interest on loans, and hired workers who are paid wages and salaries. After these stakeholders receive their share of agriculture's output, the remainder goes to the households or businesses who share in risk, one of which is farm operator households. The share of output earned by operator households and others who share risks is referred to as net farm income (fig. 1).

Farm Operator Households: Multiple Persons and Multiple Incomes

Farming is a business. Farm operators may join with spouses and other family members as well as with non-related partners to operate the business. Only 17 percent of farms are run by single farmers. As a business, a farm is provided assets by the farm household. As opposed to some small businesses like a retail store or a service provider, the assets associated with a farm can be considerable, consisting of large amounts of land, machinery and equipment, and inventories of crops and livestock. Obtaining these resources and managing them for profit requires experience, education, risk taking, creditworthiness, and business savvy.

Farm income is just one component of total income of farm households. Mimicking the general economy, dual career farm families are the norm rather than the exception. Fifty-four percent of farm operators work off the farm, with over 55 percent of spouses also employed off farm. Average net cash farm income on rural residence farms is actually negative (minus $4,594) and off-farm earnings account for essentially all the family's income. Reasons that small operations such as these stay in farming when they are not earning a profit include the possibility that the operator is retired, views farming as a way to diversify investments, likes the amenities of a rural lifestyle, or some combination of all three.

Off-farm earnings are also a substantial share of total household income for households that operate larger, more commercial farm businesses. The source and who earns off-farm income may vary considerably among farms. Income may flow from wages, salaries, draws from a non-farm business, dividends, or interest from investments or retirement accounts. Similarly, whether a farm's operator, spouse, or other family member earns income may differ greatly. What is clear in today's farm household is that income can originate from a wide variety of farm and non-farm sources and, typically, more than one household member contributes.

What Indicator for What Use?

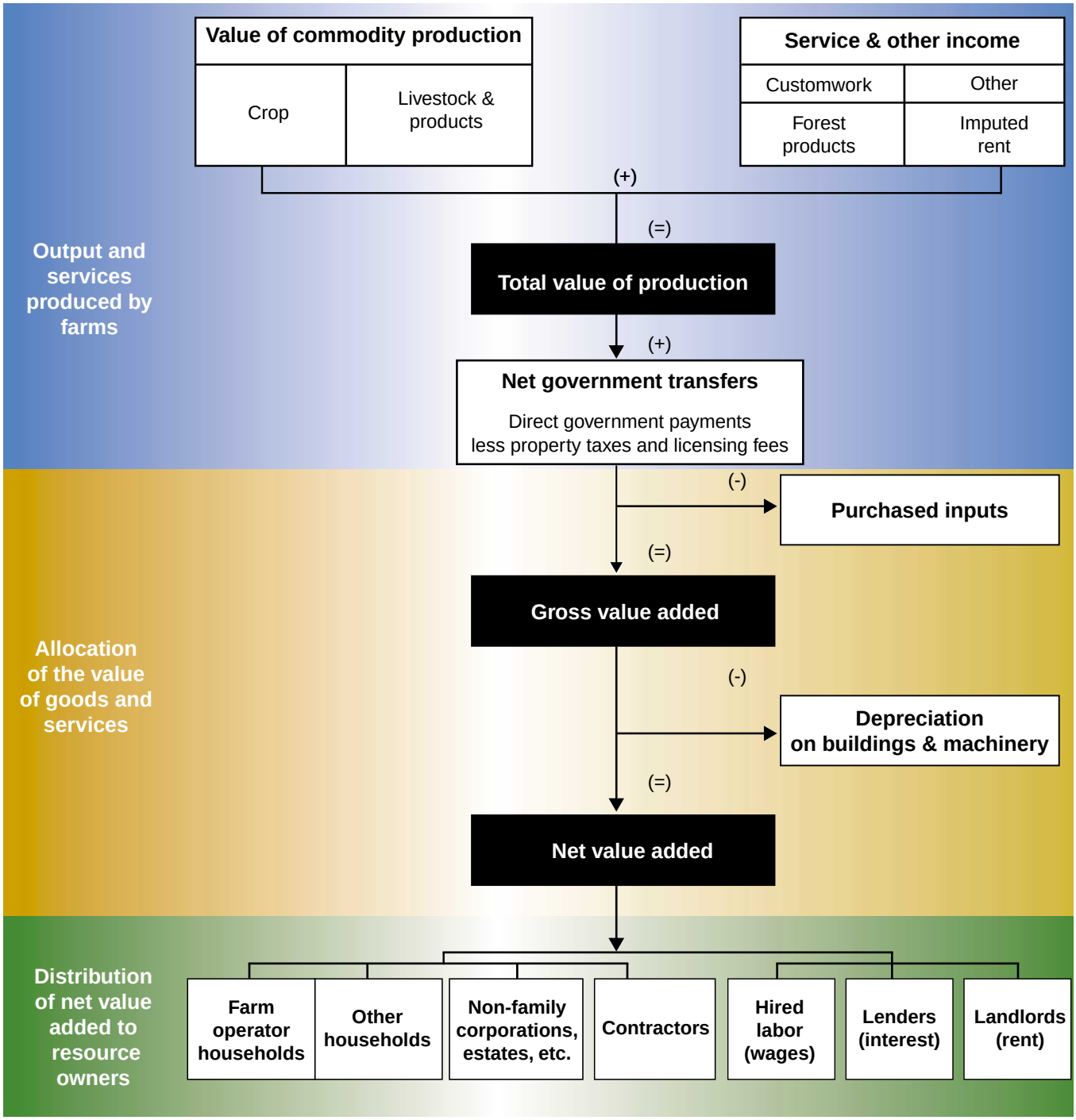
Given the number of stakeholders in agriculture, careful attention must be placed on which economic indicator to use. For example, net farm income has been used as an overall measure of farmers' financial well being. But, as illustrated above, there are many players in agriculture, and no one indicator can be used to represent all stakeholders. Moreover, for today's farm household, which engages in a wide variety of strategies to earn its livelihood, a focus only on income from farming or non-farm work to the exclusion of other sources not only presents an incomplete perspective about household income but also sells short the wide variety of decisions and strategies used by farmers and family members to increase their overall household incomes (table 2).

Table 2--Farming, farm businesses, farm households: which measure of income for what purpose?

I want to measure	Use this statistical indicator
Farming's contribution to state and national economies	Agriculture's value-added income
Earnings of farming's risk takers	Sector-wide net income
Net income of farm business establishments	Farm business income
Income earned by farm households	Money income of farm households from non-farm and farm sources
Income available for household use	Farm household's disposable(after tax) income

Figure 1

Farm sector's contribution to the national economy



Value-Added Concepts and Uses

When the U.S. Department of Agriculture's (USDA) income accounts were first established over 50 years ago, farm operators and their families owned most of the factors of production and generally earned all of their income from farming. Net farm income was legitimately viewed as a measure of the net income that farm families received from their farms and as an indicator of the sector's net value added from the production of goods and services.

Today, many farms, particularly larger operations, have multiple operators of assorted forms. Entities sharing in the risks of production encompass not only individual proprietors or operators, but also a myriad of individuals and legal entities that contribute at-risk capital in many forms. These include partners, contractors, owners of animals placed in feedlots for finishing, and passive investors contributing only capital in expectation of receiving dividends. Net farm income, as currently measured by USDA, includes the net returns to all these risk-sharing equity holders, as well as the net returns to traditional farm operators. In addition, the proportion of all three factors of production (land, labor, and capital) owned by non-equity holders and paid for their services without contingencies, has increased over time. Thus, the changing structure of U.S. farming requires new measures of the value created through production activities.

In the value-added accounts, value of production from farms is divided into three major accounts: crops, livestock and products, and forestry and services. The crops and livestock division is informative because the two are often counter-cyclical. Low crop prices may reduce the earnings of crop farmers but benefit livestock producers by lowering the costs of feeds, an important component of production costs for livestock. Thus, when crop producers are in the doldrums, livestock producers may be expanding production and vice versa. Forestry and services incomes are alternative sources of income to commodity production and both supplement income from commodities and provide additional diversification of risks from changes in weather and commodity markets.

Net value added is the total of income generated by production activities within the agricultural sector of the general economy, for which gross domestic product (GDP) is the sum of incomes generated by production activities in all sectors. Income generated is income earned by those participants who contribute resources for a predetermined payment (stakeholders) and those who contribute resources with the expectation of receiving additional financial rewards for sharing in the risks of production.

The payments to stakeholders for the provision of land, labor, and capital for a predetermined price are contractual in nature and thus documented. Those payments are deducted from net value added to determine the residual income (net farm income) accruing to those participating in the production activities by contributing resources without a predetermined payment.

The division of net farm income among recipients has historically not been well-documented, and for that reason, has not been attempted until now. The new focus is on giving an accounting of the earnings of landlords and contractors in addition to farm operators.

Farm Operator Household Income Outlook

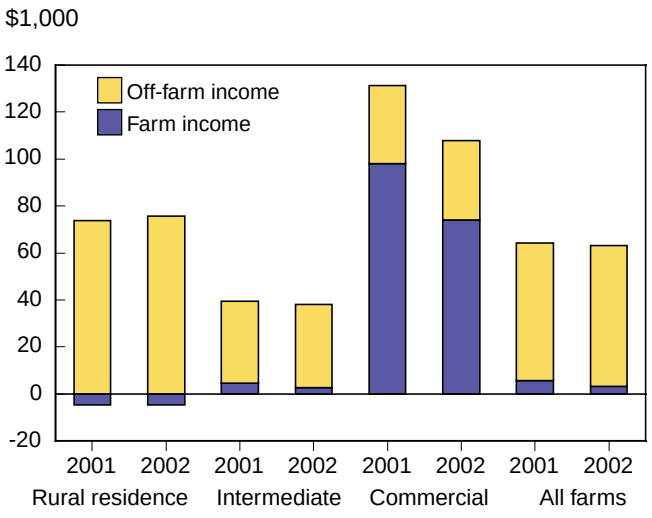
Reduction in Farm Value Added Will Have Small Effect on Most Farm Households

Average farm household income for 2002 is forecast at $63,237, down about 1 percent from last year (fig. 2). Declines in livestock receipts and government payments will contribute to the farm income component of total household income falling for the 5th year in a row. Also, continued weak recovery of the general economy has not provided much of a boost to the Nation's labor market. The higher unemployment rates have led to slower wage growth, so little change is expected in the income from off-farm sources. Since the decline in farm income is greater than the modest increase in the amount of income from off-farm sources, total household income is expected to decline. But the relatively modest reduction expected for total household income will be substantially less than the 16-percent reduction in net cash income and reflects the moderating effects of households' multiple sources of income.

The 147,000 households operating commercial family farms are expected to realize the largest declines in household income with a near 18-percent reduction (fig 3). For these households a 24-percent drop in income from farming will only be partially offset by increases in income from non-farm sources. A 3-percent decline in income is forecast for the 660,000 households operating intermediate family farms. Again, a small increase in off-farm earnings will not be sufficient to offset lower levels of farm earnings from livestock and assumed levels of government payments. Income for the 1.3 million households operating rural residential farms are expected to rise by about 3 percent, reflecting their increased earnings from off-farm sources.

Figure 2

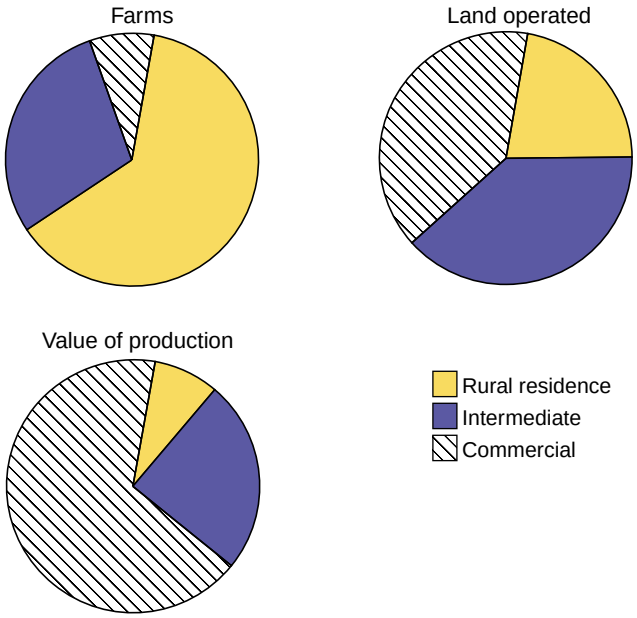
Sources of operator household income by farm typology, 2001-02



Source: ARMS/USDA.

Figure 3

Share of farms, land operated, and value of production by typology group



Source: 2000 ARMS, USDA.

Farm households use a wide variety of livelihood strategies to generate income to support consumption, savings, and investment. The Census of Agriculture has, for several decades, documented the trend toward off-farm work by farm operators, showing that three of 10 operators worked off farm by the 1930s and that over half of operators had moved into non-farm labor markets by the 1960s. Not only has the share of operators working off farm grown but the amount of time, as measured in days worked off farm, has increased as well (fig 4)

Only 25 years ago a majority of operators (54 percent) still reported farming as their principal occupation. This has also changed with a majority now reporting something other than farming. Evidence of multiple livelihood strategies being used by farm households

Defining the Farm Typology

Rural Residence Farms

Limited-resource. Any small farm with gross sales less than $100,000, total farm assets less than $150,000, and total operator household income less than $20,000. Limited-resource farmers may report farming, a nonfarm occupation, or retirement as their major occupation.

Retirement. Small farms whose operators report they are retired (excludes limited-resource farms operated by retired farmers).

Residential/lifestyle. Small farms whose operators report a major occupation other than farming (excludes limited-resource farms with operators reporting a nonfarm major occupation).

Intermediate Farms

Farming occupation/lower-sales. Small farms with sales less than $100,000 whose operators report farming as their major occupation (excludes limited-resource farms whose operators report farming as their major occupation).

Farming occupation/higher-sales. Small farms with sales between $100,000 and $249,999 whose operators report farming as their major occupation.

Commercial Farms

Large family. Farms with sales between $250,000 and $499,999.

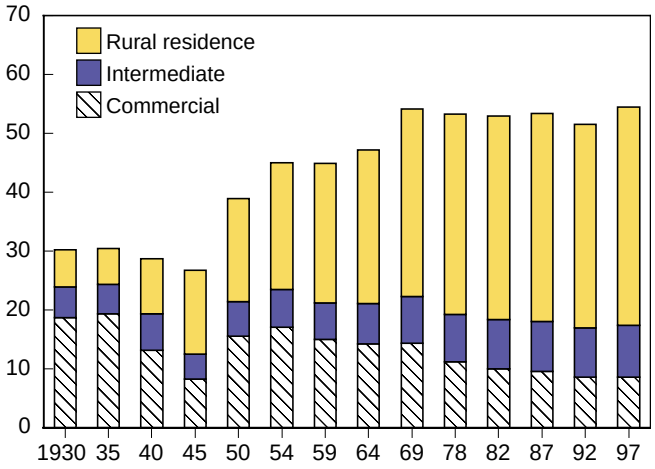
Very large family. Farms with sales of $500,000 or more.

Nonfamily. Farms organized as nonfamily corporations or cooperatives, as well as farms operated by hired managers. In analyzing the farm operator household, this group is excluded.

Figure 4

Farm operators reporting off-farm work, 1930-97

Percent



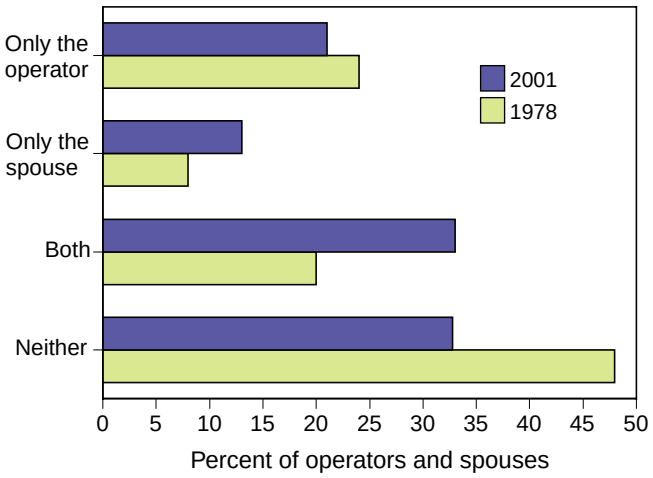
Source: Census of Agriculture, various years.

has also emerged from both the Census of Agriculture and more recently from U.S. Department of Agriculture's (USDA) national survey of farms and farm households. Household earnings strategies are revealed in the choices made with regard to employment and investment. On some farms only the operator reports off-farm work while on other farms the spouse reports holding the non-farm job. Some households decide that both the operator and his/her spouse will work off farm. Yet other households decide that neither the operator nor the spouse will engage in off-farm work (fig. 5). An even larger share of operators works off farm for wages or salaries (54 percent) than report a non-farm job as their primary occupation (46 percent). For spouses the percent reporting career choice and off-farm work are closer with 56 percent working off farm and 52 percent reporting a non-farm occupation. Livelihood strategies not only include where to work, but where and how to use funds available for saving and investment purposes. Examining sources of household income shows that farm households earn income from a wide variety of non-wage and salary sources including multiple farms, non-farm business operations, financial assets, and both public and private retirement funds.

Households operating four types of small farms—limited-resource, retirement, residential/lifestyle, and farming occupation/lower sales—earn virtually all their income from off-farm income sources. On average, they actually lose money (or nearly break even) from farming activities. Limited resource and retire-

Figure 5

Off-farm work experience of farm households, 1978 and 2001



Source: 1978 data are from the 1979 Farm Finance Survey, Census of Agriculture; 2001 data are from USDA's ARMS survey.

ment farms obtain most of their off-farm income from unearned income (net income from farmland rental, interest, dividends, Social Security and other public programs, and other passive sources). Residential/lifestyle and farming occupation/lower sales small farms rely more on earned income (wages, salaries, off-farm business income, and other farm business income).

Households operating the remaining family farms—farming occupation/higher sales farms, large farms, and very large farms—on average have positive earnings from farming. The share of income originating from farming increases with farm size (as measured by gross sales). While households operating farming occupation/higher sales farms obtain on average 49 percent of their total income from farming activities, households operating very large farms obtain on average 84 percent of their total household income from farming activities. The off-farm income earned by households in these groups is substantial. For example, households operating very large farms earned an average of $33,867 from off-farm sources. These households earn most of their off-farm income through wages, salaries, and off-farm business income.

Regional and Farm Type Perspective

Across the resource regions for 2002, operators in the Northern Crescent could endure about a 7-percent reduction in household income. In other regions there should be little to no change. According to 2001 Agricultural Resource Management Survey (ARMS) results, more farm operator households (18 percent) were located in the Heartland than in any other resource region. Average household income in the Heartland was $57,100, which was 11 percent below the national average. Households in this region also had the lowest off-farm income ($47,523). The region's cash grain and soybean farms (43 percent) averaged $55,295 in household income. The region's beef farms (23 percent) averaged $50,615.

The highest average total household income at $96,474 was realized in the Fruitful Rim, 78 percent of which came from off-farm sources. Farmer operators in this region also realized the highest farm income of any of the regions. The highest off-farm incomes were in the Basin and Range region.

Farms in the Prairie Gateway region had the lowest average household income ($52,302). Nearly half of these households operated beef-type farms. Farm operator households located in the Prairie Gateway and Eastern Uplands regions had, on average, negative farm income.

With some exceptions, little change is expected in the household income of cash grain and soybean farms in 2002, as increases in cash receipts will be offset by declines in government payments. However, wheat farm incomes are expected to decline about 5 percent as the result of lower cash receipts. Also, the expected 16-percent reduction in the household income of cotton farms is primarily the result of declines assumed for government payments. For 2001, cotton farms (less than a percent of all households) received the largest average government payments relative to other types of farms. About 40 percent of the cotton farm households were located in the Prairie Gateway region.

More farms are classified as beef cattle farms (34 percent) than any other type. Despite declines in livestock receipts of about $520 per farm and assumed reductions in government payments of about $526 in 2002, increases in off-farm earnings will lead to a 3-percent increase in the average household income of beef farms. Households operating beef farms in 2001 relied on income from off-farm sources to support family needs. About 23 percent were located in the Eastern Uplands region, where the average household income was $52,068. Beef farms located in the Great Plains realized the highest income ($110,278).

Households operating dairy farms rely heavily on farm sources of income and are expected to see a 57-percent reduction in operator household income for 2002. This change in income can be traced to the 14-percent change in livestock receipts and a 22-percent change in government payments. The 57-percent reduction forecast for 2002 is nearly opposite the near 32-percent increase experienced in 2001, a year of substantially higher milk prices. About 59 percent of dairy farms are located in the Northern Crescent region. The highest regional average household income for 2001 dairy farm operators was $372,963 in the Fruitful Rim, which has a number of larger, often drylot, dairy operations.

Household Members' Contribution to Off-farm Income

Farm operators contributed the bulk, 68 percent, of household earnings from off-farm sources. Spouses contributed 29 percent of earnings from off-farm sources, with the remaining 3 percent attributed to other household members. Half of the operators' off-farm earnings were earned as wages and salaries, while 70 percent of the spouses' off-farm earnings were earned as wages and salaries. Contributions of household members to off-farm income vary across the farm typology. Operators of commercial farms (large and very large family farms) contributed 56 percent of their households' off-farm income. Only 22 percent of this off-farm income was earned as wages and salaries, while better that 50 percent was classified as unearned income (income from farmland rental, interest and dividends, Social Security and other public programs). Operators of rural residence farms (limited-resources, retirement, and residential/lifestyle family farms) contributed 71 percent of their households' off-farm income. About 65 percent of the off-farm income of the operators of residential/lifestyle farms was earned as wages and salaries, while about 77 percent of the off-farm income of the operators of retirement farms was realized from interest and dividends and Social Security and other public programs.

Farm Households' Well-Being Includes Income and Wealth

The current assessment of farm household income sources suggests that household income will, on average, be over 1 percent lower in 2002. However, it is expected that household assets related to farming, particularly real estate assets, will increase in value—although at a slower rate than in recent years. Changes in income and wealth levels will likely have the greatest effect on the lower income-lower wealth and higher income-higher wealth households. The higher income-higher wealth households account for a large proportion of farm output with more than half of farm output on these farms coming from livestock enterprises. The lower income-lower wealth households may experience the most difficulty from the decline in income since this group already has the largest share of households having to adjust to the shortfall between their income and consumption needs.

Farm household economic well-being is affected both by the level of income and the amount of wealth available to the household and by how income and wealth influence household consumption. The well-being of households has both an absolute component, which compares income and wealth to a selected standard, and a relative component, which measures the ability of households to meet consumption needs.

Movements in commodity prices, production shortfalls due to weather, and lack of off-farm jobs all affect well-being. Changes in economic conditions such as interest rates can have competing effects on farm and off-farm incomes. All of these factors contribute to income variations in a given year. Access to financial or other "liquid" assets (including savings and inventories) can help forestall a tightening in household consumption. Likewise, income that exceeds consumption can be added to savings or used to pay down debt.

Analysis of farmers' responses to the 2001 ARMS survey suggests that, on average, farm households have higher incomes, greater wealth, and lower consumption expenditures than do other U.S. households (table 3). On average, farm household incomes are better able to support their consumption needs. Since average comparisons can be misleading, farms were divided into four groups using levels of income and wealth (above or below the median level reported in the 2001 ARMS) relative to the average U.S. household.

Higher income-higher wealth. Almost half of farm households have both higher incomes and greater wealth than the average U.S. household (fig. 6). The vast majority of these farms (96 percent) reported household income greater than consumption expenditures in 2001—on average, an excess of $78,000 in income over consumption expenditures. This group of farms reported average net worth of $705,303, of which $161,728 was household assets not owned by the farming operation.

Table 3--Characteristics of farm operator households (based on U.S. median income and U.S. median wealth), 2001, by economic well being

Item	Income/wealth relative to median U.S. household				
	Lower income-lower wealth	Lower income-higher wealth	Higher income-lower wealth	Higher income-higher wealth	All-farm total
Number of farms	89,088	903,612	*105,431	996,112	2,094,243
Percent of farms	4.3	43.1	5	47.6	100
Percent of total value of production	1.4	31.7	1.9	65	100
Distribution by farm typology					
Rural residence farms	79	51	89.7	66.4	61.4
Intermediate farms	*19.9	43.9	na	23.8	31.5
Commercial farms	na	5.2	*1.6	9.9	7.1
Farm size (operated acres)	152	445	*104	440	413
Average government payment	2,088	6,023	*1,861	8,891	7,010
Farm income	*-4,768	-10,461	@-121	21,573	5,539
Off-farm income	22,773	24,320	80,244	90,565	58,578
Farm operator household income	18,006	13,859	80,122	112,138	64,117
Total household expenditures	18,486	21,405	25,295	33,295	27,132
Household net worth	36,923	500,483	@-185,433	705,303	543,653
Household farm net worth	40,127	438,909	64,935	543,575	452,902
Household non-farm net worth	@-3,205	61,574	@-250,368	161,728	90,752

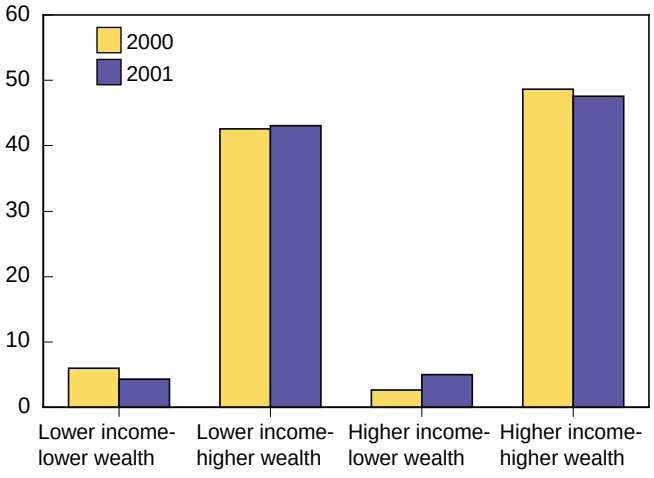
Median income for all U.S households in 2001 was estimated to $42,148; median wealth was $79,000. Wealth is defined as the sum of a household's farm and non-farm net worth.

Coefficient of Variation = (Standard Error/Estimate)*100. * indicates that CV is greater than 25 and less than or equal to 50. # indicates that CV is greater than 50 and less than or equal to 75. @ indicates that CV is above 75.

Source: ARMS/USDA.

Figure 6

Distribution of farm operator households by measures of economic well-being



Note: Income and wealth levels for farm households are compared to the median levels of income and wealth of all U.S. households.

Source: ARMS/USDA.

This group of higher income-higher wealth households includes a disproportionate share of larger farm operations and farm operators who reported a primary occupation other than farming. On average, this group of households operated the largest farms as measured by acreage at 440 acres, accounted for 65 percent of farm output, drew 60 percent of government payments, and had, by far, the highest educational attainment.

Higher income-lower wealth. The 5.0 percent of farm households with higher incomes and lower wealth than the average U.S. household are almost entirely focused on off-farm activities, with 84 percent reporting a primary occupation other than farming. Younger than average, with more having attended or completed college, their household incomes are almost entirely from off-farm sources and exceed consumption expenditures by a wide margin.

Lower income-higher wealth. Of the nearly 43 percent of farm households reporting lower income but greater wealth than the average U.S. household, 43 percent reported annual household incomes below their expenditures in 2001. This group contains a disproportionate share of mid-size farms and of farmers

who report that they are retired. For many of these, farm-derived income is often negative.

The lower income-higher wealth farms hold a vast majority of their net worth ($438,909 on average) in business assets (such as land, machinery, and crop and livestock inventories). The retired or more elderly farmers in the group who do not have sufficient current earnings from farming can access their accumulated assets or begin to consume capital assets (e.g., choose not to replace machinery or equipment as it wears out). Generating a sustained flow of income from the household's asset base to support household consumption requires either disposing of the farm or renting/leasing to other farmers or to the government through land retirement programs (such as conservation reserve). Many lower income higher wealth households report receiving government payments, averaging $6,023 in 2001. This group also contains farm businesses whose income is temporarily lower because of either low commodity prices or production shortfalls. For many of these operations, adequate consumption levels can be maintained by drawing on savings or other assets.

Lower income-lower wealth. About 4 percent of farm households have both lower incomes and lower wealth than the average U.S. household. This group, principally small and limited-resource farms, has thin margins between household incomes and consumption expenditures. Of these households, 21 percent report farming as their primary occupation, and nearly 41 percent are limited-resource households. Moreover, their small asset base may be insufficient to meet any unexpected shortfall in household earnings. Nearly 45 percent of these households reported income less than consumption expenditures in 2001. For these households, there is insufficient income to support even relatively low levels of current consumption and few assets to meet or enhance consumption.

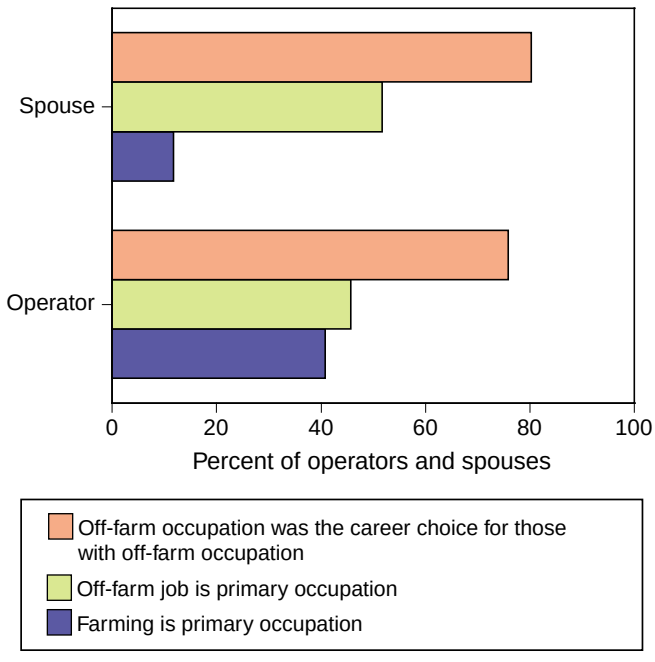
Off-farm Employment: Choosing a Career

While off-farm work by farm operators is well documented, other questions have emerged and have not been as well answered, with empirical evidence drawn from farmers and members of their households. Is off-farm work by operators and members of their households a career choice or an action needed to support the farm business? What was the timing of the farm-to-work or the work-to-farm decision made by farm operators? Do farmers both work off farm and hire labor to work their farms? How has the amount of time worked off farm changed in recent years? Do farmers tend to hold their jobs for longer periods of time or are off-farm jobs of shorter, more intermittent duration? The 2001 ARMS asked farm operators about the labor and employment decisions for themselves and their spouses. Responses to the survey questions provide a base from which to develop information related to these and other questions that have arisen about off-farm work of farm households.

As noted, in 2001, 46 percent of operators and 52 percent of spouses reported that a job other than farming was their principal occupation (figs. 7 and 8). Of key interest was whether the off-farm work by operators and spouses was a career-oriented decision made by the individuals and households. To obtain information about the employment choices made by farmers and/or their spouses, those who reported a principal occupation other than farming, were asked a follow-up question focused on whether that occupation was the operator's and his/her spouse's career choice. When asked this question, three-fourths of operators and four-fifths of spouses responded that their non-farm occupation was their career choice. Additionally, when operators were asked whether they and/or their spouse worked at an off-farm job prior to becoming a farm operator, a third of both operators and spouses reported off-farm

Figure 7

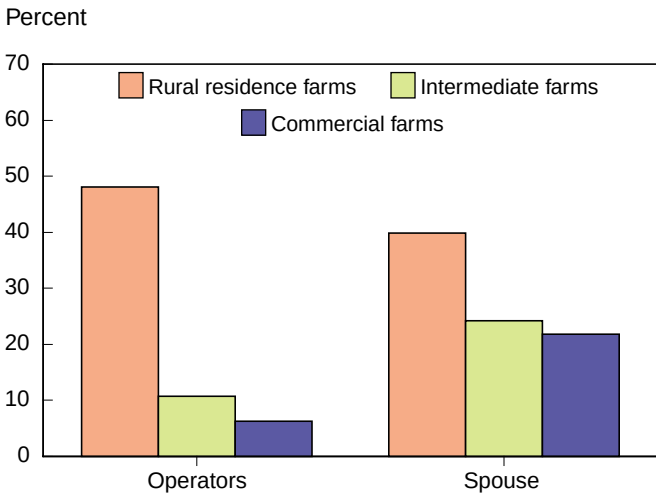
Farm operator and spouse career employment choice



Source: ARMS/USDA.

Figure 8

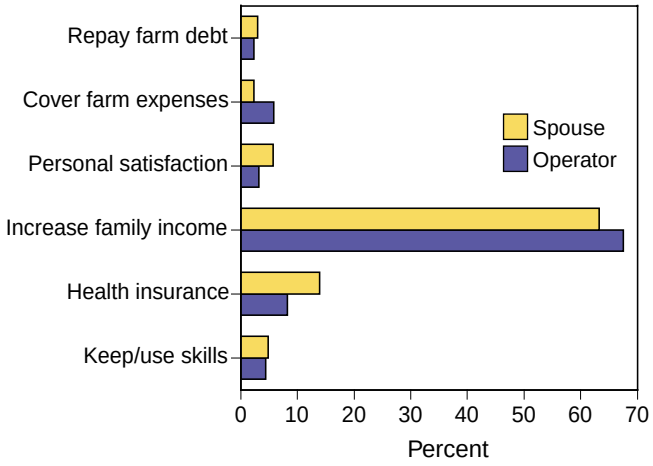
Households from all size farm businesses worked off-farm prior to farming



Source: ARMS/USDA.

Figure 9

Primary reasons given for working off-farm



Source: ARMS/USDA.

work prior to becoming involved in running a farm business. A common perception has been that farmers have worked off-farm to supplement declining or inadequate farm income or to continue a way of life. Results from the 2001 survey suggest that, fewer than 10 percent of farmers who work off farm may be doing so to help with debt or expenses related to the farm. The large majority of operators and spouses engaged in off-farm work to increase their household incomes or for other reasons (fig. 9). Moreover, the decision to work off farm, on average, does not appear to be a recent decision for most respondents. Operators reported having worked at their existing off-farm job over 15 years, while spouses had worked 12 years.

Farmers and/or spouses who reported off-farm jobs were asked the number of weeks and hours per week they worked off farm. On average, results showed that both operators and spouses worked in excess of 45 weeks per year. Operators reported working a 40-hour week while spouses reported 36 hours, on average. Operators were also asked whether household members worked about the same, more, or fewer hours in 2001 than they worked 5 years earlier. Over half of operators reported that their households worked about the same number of hours while about the same share (13 percent) reported more or fewer hours of work.

Operators and spouses not only make decisions about whether one, both, or neither work off farm, this decision may be coupled with the decision to hire someone to work on the farm operation. Over a fifth of households where the operator only worked off farm also paid wages to hired labor. Thirty-seven percent of these households also had custom work performed on their farms. While a larger share of farms where neither the operator nor the spouse worked off-farm hire labor, the share of farms with hired labor or custom hire were not greatly different. Using hired labor in conjunction with off-farm work by the operator or spouse suggests that farm households are evaluating tradeoffs between farm and non-farm work commitments, pay, and benefits and are making decisions that are of the greatest benefit to the household's economic status.

Types of Off-farm Employment

Both operators and spouses engaged in a wide variety of jobs and are employed in both public and private sector industries. Operators and spouses were asked to report whether they worked at administrative/professional, technical, production, self-employed, or other types of jobs. About a fifth of operators selected each of the type of work options, revealing no dominant type of job being held by operators. About the same share of operators were self-employed in a non-farm business they owned, aside from the farm, as worked for another business or public entity. Administrative/professional jobs dominated the type of work reported by spouses, with almost half selecting this job type. Only about 5 percent of spouses reported work in production-related jobs.

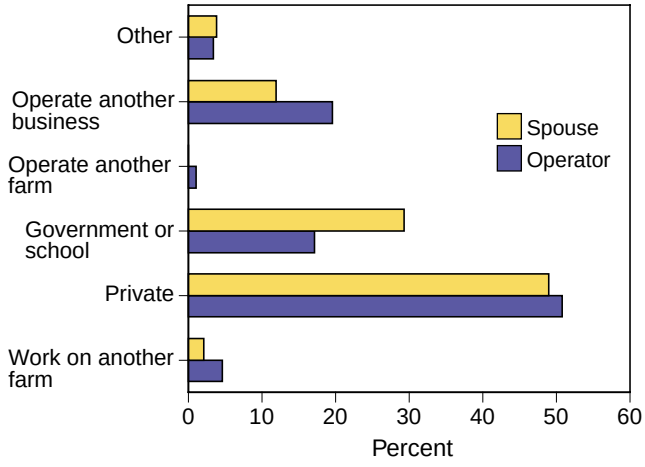
Place of work revealed a dominant selection among both operators and spouses. Persons selected for interview in the ARMS were asked where they and/or their spouse worked off-farm. Choices from which the farm-

ers being interviewed could select included another farm or ranch, a private business or individual, government or school district, self-employed operating another farm or non-farm business, or some other source of employment. Fifty-one percent of operators who worked off farm reported working for a private business or individual (fig. 10). The second most common source of employment for operators was self-employment operating a non-farm business (20 percent) followed by government or school districts at 17 percent. The most dominant source of employment for spouses was also private businesses or individuals where 49 percent worked. The second most common employer of spouses was government or school districts (29 percent). Like operators, the third-listed source of off-farm work was a non-farm business being operated by the farm household. Of spouses who worked off farm, 12 percent reported work for a business owned by the household.

Recognizing that location of the farm and household relative to towns and cities could affect the availability of potential employers and job opportunities, farmers were asked how many miles it was one way from their homes to their and/or their spouse's off-farm job site. Farmers were also asked how many miles it was from their home to the nearest town with a population of at least 10,000. Responses to these questions indicate that operators commuted about 24 miles one-way, while spouses who worked off farm commuted about 15 miles. The average distance to a town of 10,000 was about 23 miles. Commuting and residential location results indicate that farm household members, like their urban and suburban counterparts, are willing to expend the time and funds to travel to employment sites.

Figure 10

Where operators and spouses work



Source: ARMS/USDA.

The breadth of employers and types of jobs held by farmers and/or their spouses in conjunction with commuting and residential location information help underpin the importance of economic conditions in the non-farm sector to farm households. Changes that affect wages, benefits, retirement, or financial security programs likely have a great deal of significance to farm households. Survey results also suggest that other issues such as roads, driving conditions, or programs that affect the number and location of off-farm employment opportunities, or the startup and operating costs of a non-farm business venture may also be important to many farm households. For a large share of farm households a wide range of employment and other economic policies may be double-edged, affecting the farm household not only as employees but also as employers of labor as self-employed persons operating a range of business interests.

Work Decisions Show Small Differences Between Metropolitan and Totally Rural Areas

Farm and off-farm work and occupational choices of farmers and their spouses were reviewed based on the metropolitan, urban, and rural nature of the county in which the household-farm was located. For some perspective, 35 percent of household-farms were located in counties designated as metropolitan areas, while 15 percent were in totally rural counties (fig. 11).[1] Results showed some difference in the proportion of operators who declared a non-farm occupation between metropolitan and totally rural areas. Nearly half of operators in totally rural counties reported their primary occupation as farming compared with 37 percent in metropolitan areas. Still, even in totally rural counties, 36 percent of operators reported their primary occupation as something other than farming. For spouses there was virtually no difference in the proportion reporting a non-farm occupation, with 51 percent reporting a non-farm occupation in metropolitan areas and 48 percent in totally rural counties.

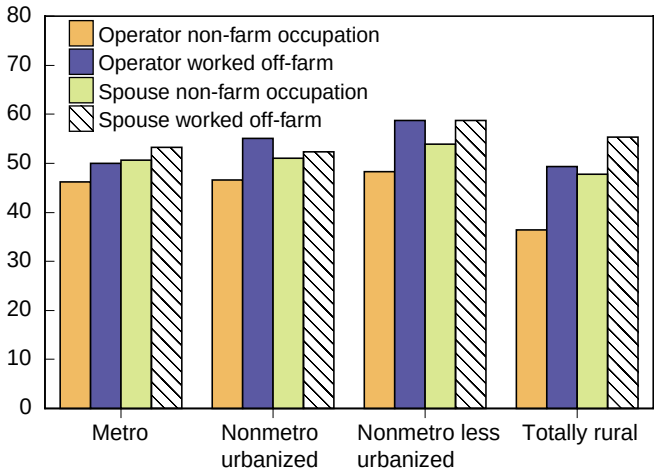
When off-farm work is examined rather than principal occupation, the reporting gap closes for operators, with 50 and 49 percent of operators in metro and totally rural areas reporting off-farm work. Fifty-five percent of

[1] Metropolitan counties are defined as being part of a metropolitan statistical area based on the 1990 Census of Population. Non-metro urbanized counties are outside metropolitan areas but have an urban population in excess of 2,500 persons. Rural counties have an urban population of less that 2,500.

Figure 11

Off-farm work and occupations of farm operators and spouses by county type, 2001

Percent



Source: ARMS/USDA.

spouses in totally rural areas reported off-farm work in 2001. Both the largest share of operators and spouses that reported off-farm work and an off-farm occupation were in the less urbanized non-metro areas where almost three-fifths worked off farm and nearly half had an off-farm occupation. Differences between household-farms located in metro and totally rural areas are the commuting distances to work (21 versus 25 miles in rural areas for operators and 14 versus 22 for spouses) and the distance they reside from a town of 10,000 or more. In metro counties, household-farms are 12 miles, on average, from a town of 10,000 or more while in totally rural counties this distance rises to 41 miles.

Farm Business Income Prospects Differ Among Farms

Nationally, net cash income earned by farm businesses is forecast to decline by 16 percent, on average, in 2002. This reduction will not be evenly distributed among farms or regions of the country as a result of changes in the value of crop and livestock production, the level of government transfers, and the level and types of inputs purchased by farmers. Even though most crop farms will experience lower income in 2002, they will still fare better than livestock farms where incomes are forecast to be lower by substantial amounts. Three factors largely determine how changes in the sectorwide income forecast will affect the distribution of income among farm operations and regions of the country:

- A farm's or region's mix of crop and livestock enterprises;
- the composition of gross income, especially the extent to which government payments contribute to the farms' sources of revenues; and
- the relative importance of expense items that are forecast to increase (such as labor, feed, and rent) versus those that are expected to decline (such as fertilizer, fuel, and interest paid).

Across all farm businesses, crop receipts account for 43 percent of gross income, livestock amounts to 36 percent, and government payments add 8 percent, with the remainder being farm-related earnings such as machine hire or custom work, recreational uses of farmland, or cooperative dividends or refunds. On crop farms, except for general grain and tobacco, cotton, and peanut operations, livestock receipts generally account for 5 or 6 percent or less of total income. This is especially the case for farms focused on corn, soybeans, and specialty crop products. Meanwhile, crop receipts and government payments typically account for 80 percent or more of gross income on crop farms, with specialty crop farms being the highest at 88 percent of gross income from crop receipts and 1 percent from government payments. Government payments account for a much larger share of gross revenues on grain operations, generally over 20-25 percent.

Sources of income are just the opposite on livestock operations. Livestock/livestock products account for the large majority of gross revenues. Dairy farms derive the highest share of income from livestock receipts (92 percent), poultry farms the lowest (57 percent).

Expense items also differ among farms. The largest expenditures on crop farms include energy-based inputs (such as fertilizer, chemicals, and fuels), as well as land rent, labor, and seed. Fertilizer, chemicals, seed, and land rents are the largest expenses on grain farms. Hired labor is by far the largest expense on specialty crop farms, accounting for over 27 percent of total expenses by itself, followed by seed and general business expenses. On livestock farms, feed and purchased livestock account for a large share of total expenses on cattle and hog operations. Labor costs and interest payments on debt are also very important expense items for livestock operations, particularly dairy and hog farms.

Differences in sources of revenues and expenses—combined with aggregate changes expected for crop and livestock receipts, government payments, and expenses—help explain the changes in income expected for farms and regions in 2002. Average net cash income of farms by size, type, and location can be projected by applying the expected 2002 change in each income statement item to that component reported in the 2001 ARMS. Projected changes in net cash income vary widely by size of farming operation in 2002 (table 4). The 60 percent of U.S. farms that are classified as rural residences typically rely on off-farm income for meeting household financial needs. The small farming operations of these households reported negative net cash income in 2001, and are likely to experience about the same losses from farming in 2002. The incomes of all crop farms, except for corn and specialty crop operations, are forecast lower in 2002. On corn farms, higher receipts and lower costs will more than offset smaller payment levels. On specialty crop farms, changes in receipts and payments will offset each other, leaving income nearly flat. Soybean and general crop farms will have relatively small reductions in net cash income for 2002. For each of these farm types, reductions in gross earnings will be partially offset by lower production costs. Net income will fall most for wheat and tobacco, cotton, and peanut farms where reductions in receipts will not be offset by lower costs.

Table 4--Farm business average net cash income forecasts

	Average 1997-2001	2001	2002F	2002/ 1997-2000 average	2002F/ 2001	Share of U.S farm businesses
		$1,000 per farm			Percent	
Farm size:						
Commercial farms	149.3	148.2	127.3	-14.7	-14.1	9.4
Intermediate farms	12.7	12.9	11.1	-12.4	-14.0	30.7
Rural residence farms	-1.0	-2.0	-2.3	-133.6	-15.0	59.9
All farm businesses 1/	43.4	44.8	38.4	-11.5	-14.3	100.0
Resource region:						
Heartland	42.9	43.0	38.1	-11.1	-11.4	23.1
Northern Crescent	44.1	37.5	25.0	-43.3	-33.4	15.4
Northern Great Plains	43.3	59.1	52.3	20.8	-11.4	6.5
Prairie Gateway	33.4	18.0	14.6	-56.4	-19.1	14.9
Eastern Uplands	14.7	18.9	16.6	12.9	-12.2	12.3
Southern Seaboard	30.0	30.9	28.8	-4.0	-6.8	8.1
Fruitful Rim	95.4	114.8	104.2	9.2	-9.2	12.6
Basin and Range	38.3	51.7	39.7	3.7	-23.3	3.4
Mississippi Portal	43.2	41.9	37.0	-14.3	-11.7	3.7
Commodity specialization:						
Mixed grain	44.4	52.8	50.8	14.5	-3.8	7.5
Wheat	33.2	30.1	25.4	-23.4	-15.6	2.5
Corn	44.4	43.5	45.9	3.4	5.6	8.2
Soybeans	28.0	23.4	22.4	-20.1	-4.5	3.8
Tobacco, cotton, and peanuts	48.1	41.2	37.0	-23.3	-10.3	4.9
Other crops	28.5	22.7	22.3	-21.7	-1.8	10.8
Specialty crops	107.4	125.7	125.9	17.3	0.2	10.1
Beef cattle	16.5	12.7	12.7	-23.0	0.2	31.4
Hogs	80.6	117.5	68.4	-15.1	-41.8	2.2
Poultry	99.9	82.6	74.8	-25.1	-9.4	3.0
Dairy	80.8	97.6	48.0	-40.7	-50.9	9.0
Other livestock	8.9	10.3	6.0	-32.5	-41.7	6.6

F = forecast. 1/ Commercial and intermediate farms only.

Source: Economic Research Service, USDA.

Hog, dairy, poultry, and general livestock farms are all expected to have lower incomes in 2002, while across the board, the incomes of beef farms are expected to be flat. Nationally, livestock receipts are expected to be about 8 percent lower in 2002 than in 2001. These lower market receipts will not be offset by lower expenses or higher revenues from crop sales or by government payments given the limited share of earnings from these sources, leaving the incomes of livestock farms down. For dairy and hog farms, not only will receipts likely be lower, but also costs may be higher for such key expenditure groups as hired labor and feed. As mentioned earlier, how lower 2002 livestock prices will affect individual operations will depend on production and marketing strategies, with contractees seeing little short-term fluctuations in income as fees from production contracts remain relatively stable. In the longer run, as contracts are renewed, fees may change as contractors adjust them to reflect the prices they are receiving for finished products.

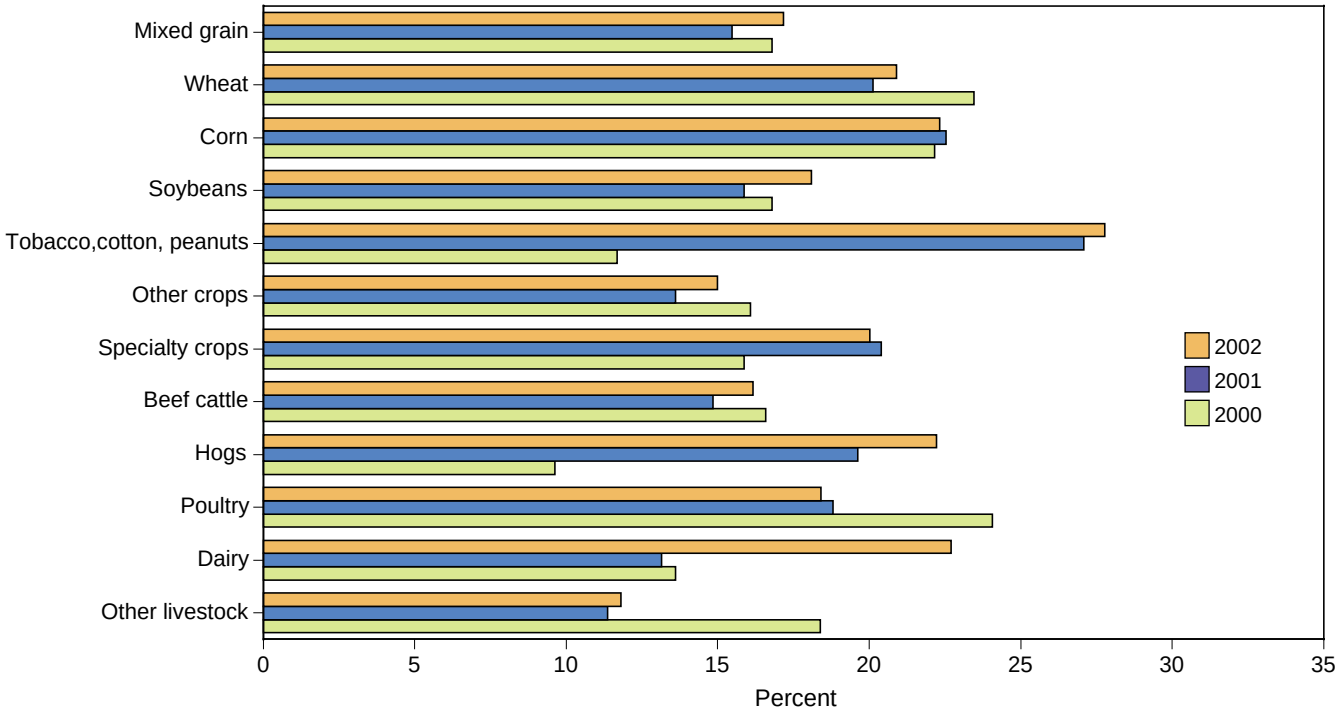
Changes in income among geographic locations will mirror the location of farm types and the mix of commodities produced. Areas strong in corn, specialty crop, oilseed, or mixed grain production—such as the Southern Seaboard, Fruitful Rim, Heartland, and Northern Great Plains—will have the best income performance in 2002. Areas specializing in dairy, livestock, or wheat production—the Northern Crescent, Prairie Gateway, and Basin and Range—will have the largest reductions in income.

Potential Debt Repayment Problems Follow Pattern

As expected, livestock producers, and areas with a high concentration of livestock farms, are likely to see other measures of financial performance decline in 2002 (figs. 12 and 13). The largest increase in share of farms with potential debt repayment problems, as evidenced by projected debt repayment capacity utilization (DRCU) exceeding 120 percent is projected for the Northern Crescent, with dairy farms accounting for a substantial portion of the increased repayment difficulties. However, overall repayment problems are expected to continue at a high level for operations

Figure 12

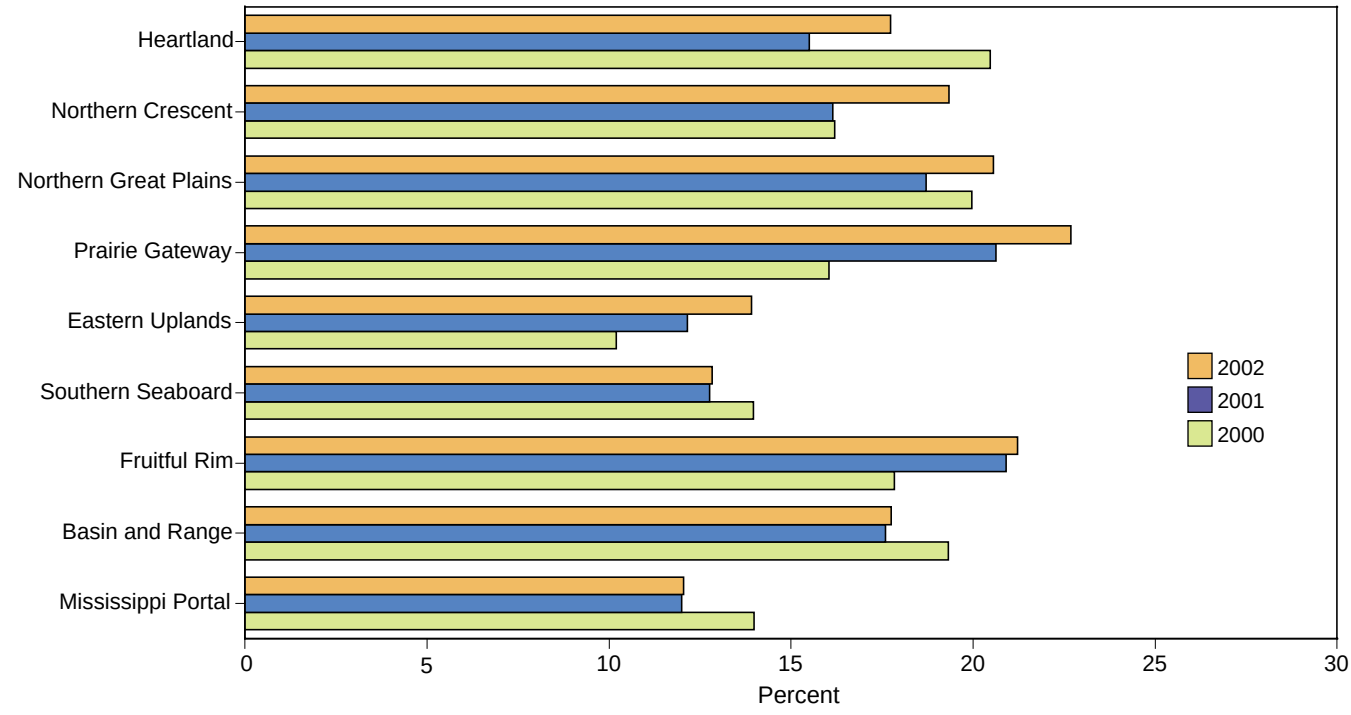
Distribution of farms with debt repayment problems, 2000-02



2002 forecast. Note: Based on DRCU > 1.2 estimated using net cash income.
Source: Economic Research Service, USDA.

Figure 13

Distribution of farms with debt repayment problems, 2000-02



2002 forecast. Note: Based on DRCU > 1.2 estimated using net cash income.
Source: Economic Research Service, USDA.

classified as tobacco, cotton, and peanut farms, and for operations specializing in the production of corn, wheat, and hogs. Debt repayment is projected to be most problematic for farms in the Prairie Gateway, Northern Great Plains, and Fruitful Rim.

Hot, Dry Conditions Have Led to Persistent or Worsening Drought in Many States

This summer's weather has had dramatic impacts on the areas hit by drought. Areas of extreme and exceptional drought stretched from the Southwest to Montana and Nebraska and from Georgia to Virginia. These areas encompass 11 percent of farms, 22 percent of acres, and 15 percent of production. Cattle is the predominant commodity in extreme and exceptional drought areas (25 percent). About 14 percent of U.S. corn production and 7 percent of soybean production comes from these areas.

Sector Income, Expenses, and Government Payments

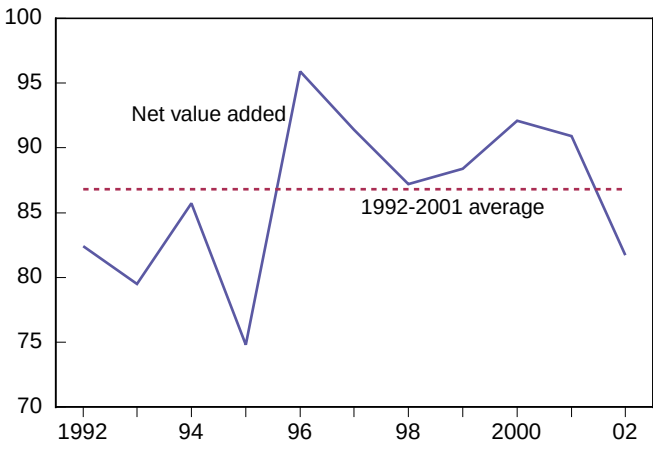
Agricultural Producers Contribute to National and State Economies

Net value added is forecast at $82.4 billion for 2002, down $8.5 billion (9.3 percent) from 2001 (fig 14). Net value added is a measure of the contribution of agricultural production to the national and State economies. It is also a measure of the income earned by those participants who contribute resources for a predetermined payment (stakeholders) and those who contribute resources with the expectation of receiving additional financial rewards for sharing in the risks of production. The distribution of the decline in income is not distributed proportionately across all those who share in the income pie represented by net value added.

Livestock Value of Production Declines Sharply

In 2002, the livestock sector will account for most of the drop in net value added. Value of production for livestock and livestock products is expected to be down $9.6 billion. Large supplies of animals for meat and milk have contributed to lower market prices. Cash receipts from sales of meat animals (cattle & hogs) are forecast down by $3.1 billion, sales of dairy products are expected to decline by $3.9 billion, and poultry receipts are expected to be lower by another $2.0 billion.

Figure 14
Farm sector net value added, 1992-2002



2002 forecast.
Source: Economic Research Service, USDA.

Expansion in numbers of milk cows in many States has boosted milk production by around 3 percent, which combined with a softening of demand has contributed to an expansion in commercial stocks of dairy products. These market forces have caused milk prices to drop by 15 percent and have resulted in the $3.9-billion reduction in cash receipts for producers.

Exports account for a significant portion of the demand for meat produced by U.S. farmers. Russia, which accounts for nearly 40 percent of U.S. broiler exports, imposed a ban on the importation of U.S. broilers that was finally resolved in early September after months of negotiations and uncertainty for producers who continued to bring heavier birds to market. As a consequence, marketable supplies available to U.S. consumers rose, prices declined from the retail to the farm level, and the value of broilers produced will be lower by $2.1 billion in 2002.

Poultry competes with beef and pork for the consumer's food budget. Weakness in the price of broilers is putting downward pressure on the prices of beef and pork, which filters down to lower prices at the farm level for the live animals sent to market.

Slow economic growth in major foreign markets for U.S. pork is expected to cause pork exports to fall by nearly 6 percent in 2002. As a result of lower export demand and increased competition from poultry combined with a modest increase in hog production, 2002 hog price forecasts have slipped to the mid-$30s per hundredweight (cwt) compared with the mid-$40s in 2001. As a result, cash receipts from hogs are expected to be down $2.9 billion (23 percent) in 2002.

Cash receipts from cattle and calves are expected to decline by $200 million because of both lower prices and lower production. The demand for beef has weakened in 2002 due to a weak U.S. economy, lower export growth, and competition from large supplies of other meats. Substantial portions of the United States have been afflicted with drought this summer, and cattle-producing areas have been among the most affected, including the Mountain States, the western Corn Belt, and the western portions of Mid-Atlantic States. This has caused farmers to sell additional cattle as pastures dried up and the price of hay rose. This liquidation of a part of the herd does not represent new production and thus is not reflected in the sector's net

value added, but it increases the total supply of meat on the market, which may lower market prices for all cattle, including new production. Net value added may be lower as a consequence of the reduction in the herd and contribute to lower incomes for stakeholders.

The Value of Crop Production Rises With Prices

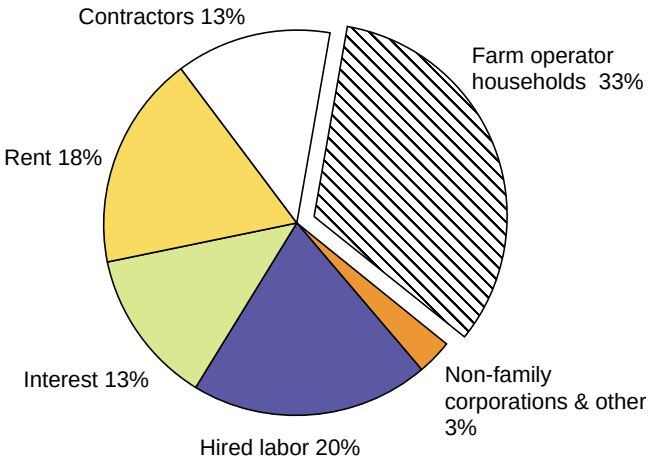
The occurrence of significant drought conditions over large areas of the country has reduced the yields of crops growing over the summer months. Because the drought spread eastward from the Mountain States into the western Corn Belt, the biggest impact has been reflected in the reduction in expected yields and, therefore, harvests of corn and soybeans. Food grains (primarily wheat) were less affected because much of the crop escaped the worst of the drought since it is grown over the winter and harvested in early summer. Cash receipts for feed grains and soybeans will be higher in 2002 because market prices are up substantially. As a consequence, farmers with quantities to sell from either new production or inventories carried over from the prior year will reap the benefit of the higher market prices.

Cotton receipts are forecast down 22 percent in 2002, but this is not drought-related, as average yields are expected to be about the same as in 2001. Farmers chose to plant substantially fewer acres to cotton in 2002, and as a consequence, production declined. Indications are that farmers may have viewed market conditions to be potentially more favorable for soybeans.

The Disposition of Net Value Added

The stakeholders, among whom the income represented by net value added is distributed, can be grouped into those who share in the risks of production and those who do not. Hired labor, lenders of capital, and landowners providing farmland—all receive a portion of the income created by the sector's production activities but are remunerated at rates agreed upon in advance of providing the services. The contractual nature of the arrangements give them priority on their claims to a fixed share of the income pie and frequently they receive their payment before the harvest/sale of production (fig. 15). As a consequence, their remuneration is not subject to weather and markets and is not a function of the level of the sector's income. Consequently, their annual earnings do not change dramatically. The contractual earnings of stakeholders are estimated as employee compensation, net rent, and interest paid. Together these stakeholders will earn about 57 percent of agriculture's value added, up from 50 percent in 2001.

Figure 15
Distribution of value added to the national economy



Source: ARMS/USDA.

The Disposition of Net Farm Income

After payments to stakeholders, the residual income is net farm income. It represents a residual income to those who provide land, labor, capital, and management without any assurance of earnings, thereby accepting the risks of production and marketing and expecting their earnings to be a measure of how well the production enterprises adapt to these uncertainties. For 2002, net farm income is forecast to be $36.2 billion, down 21 percent from 2001. The impacts of this decline will vary greatly by farm depending on the commodities produced and the business arrangements under which they are produced.

Today, many farms, particularly larger operations, have multiple operators of assorted forms (table 5). Entities sharing in the risks of production encompass not only individual proprietors or operators, but also a myriad of individuals and legal entities that contribute at-risk capital in many forms. These include partners, contractors, owners of animals placed in feedlots for finishing, and passive investors contributing only capital in expectation of receiving dividends. Net farm income, as currently measured by USDA, includes the net returns to all these risk-sharing equity holders, as well as the net returns to traditional farm operators. In addition, the proportion of all three factors of production (land, labor, and capital) owned by non-equity holders

Table 5--Modern farms obtain production resources from a large number of owners

- 209,000 farms rent land for a share of production; another 633,000 farms rent land for cash
- 910,000 farms owe debt at year-end; 2,100,000 farms use debt during the calendar year
- 632,000 farms use hired labor
- 50,000 farms grow agricultural commodities for other firms or farms under a production contract arrangement
- 93,000 farms are organized as partnerships
- 65,000 farms are organized as family corporations
- 145,000 farms have multiple households providing production assets

and paid without contingencies for their services, has increased over time.

The business aspects of production vary greatly by commodity, and the legal structure determines who assumes the risks associated with production and markets. For most food grains, feed crops, oilseeds, cotton, tobacco, and dairy products, the farm operator typically assumes the risks of production. If earnings are high, the farmer reaps the benefits and if earnings are low, the farmer bears the brunt of the failure to earn income.

For a commodity grown predominately under production contracts such as broilers, the farm operator is paid a fixed fee per unit of production and is little affected by market prices. Thus in 2002, broiler producers will be sheltered from the decline in prices by their contracts and it likely will be the contractor who will bear the consequences, if there are any. About half of hogs are also grown under production contracts, and those producers may also be sheltered from the decline in prices that occurred in 2002. Those hog producers without production contracts would, however, have to absorb the loss of income. For those farmers growing hogs under a production contract with an integrator, who in turn has a marketing contract with a meat processor, the sharing of the market risks between the integrator and contractor would depend on the terms of the marketing contract.

In contrast, dairy farmers will pretty much bear the full brunt of the reduction in income from the price declines for milk in 2002. However, 2001 was a good year for dairy farmers as milk prices surged for the first three-quarters of the year. As the primary risk assumer, the operators of dairy farms will be the principal beneficiaries when the production and market environment are favorable and will bear the brunt of income-reducing conditions/phenomena regardless of whether they are within their control or not.

The business structure and disposition of risk/income for producers of vegetables, fruits, nuts, and other miscellaneous commodities varies by commodity. Much is produced under contractual arrangements and marketing orders and in association with producer-owned cooperatives. Generally, the purpose of most of these legal arrangements is to reduce the risks to farmers of the potentially extreme vacillations in market conditions. In some arrangements the risks are shared or shifted and in others they are mitigated by increased control over the quantity and timing of supplies.

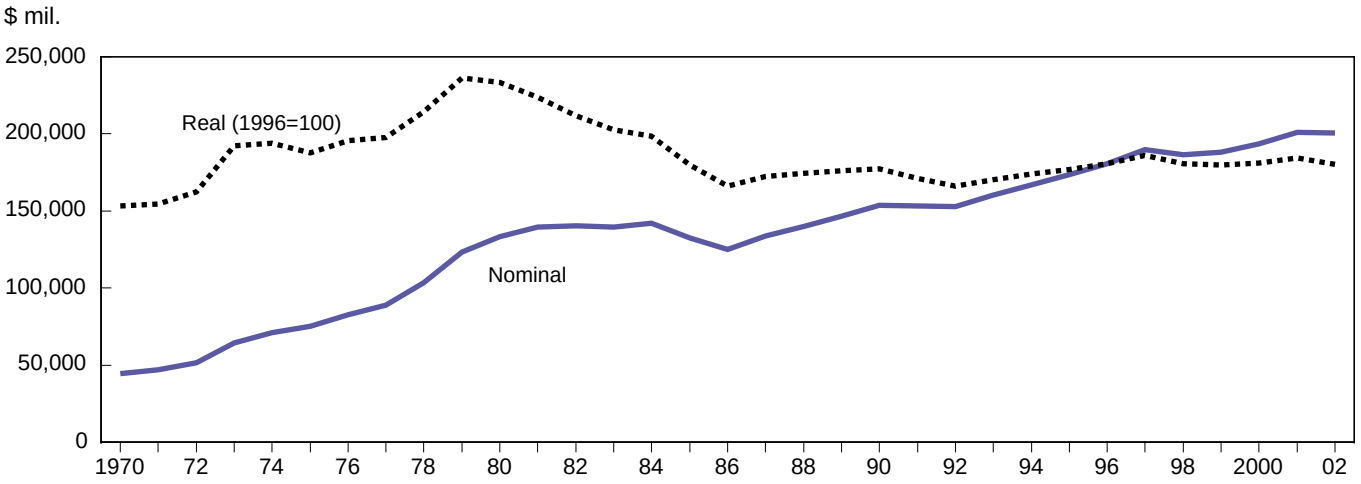
Expenses To Fall Slightly in 2002

Total farm production expenses, including operator dwelling expenses, are now estimated to have reached $200 billion for the first time in 2001 and are forecast to remain essentially the same in 2002. Since reaching a low point in 1986, total production expenses have risen rapidly during two extended periods: between 1986 and 1990 when total expenses rose $28.4 billion (22 percent) and, between 1992 and 1997 when they rose $37.3 billion (24 percent). In the shorter period between a low point in 1998 and 2001, total expenses increased $14.3 billion (7.7 percent). During the first two periods of large increases, deflated expenditures increased along with nominal expenses. Since reaching a high point in 1997, however, deflated total expenses will have fallen 3.6 percent by 2002. From their peak in 1979, deflated expenses have fallen 23.7 percent, while nominal expenses have risen 62.5 percent (fig. 16). Real total expenses in 2002 are below the levels of real expenses from 1973-85, the period of highest real total expenses.

Crop-Related Expenses

The major crop-related expenses—seeds, fertilizer, and pesticides—are forecast to be $26.8 billion in 2002, 1.6 percent below the 2001 estimate. Total area plant-

Figure 16
Total production expenses, including operator dwelling expenses, 1970-2002



2002 forecast.
Source: Economic Research Service, USDA.

ed, one of the major factors in crop expenses, is forecast up slightly from 2001. The area planted to corn, which is a relatively heavier user of crop-related inputs, has increased 3.2 million acres (4.2 percent). However, wet conditions delayed corn planting in the eastern Corn Belt. Then, hot and dry conditions have interfered with pollination in the western part of the region and emergent growth in the eastern part. Another offsetting factor is that the acres planted to cotton, which is the heaviest user of pesticides, is 6-percent lower in 2002.

Further, the average annual price of the largest expense in this category, fertilizer, is slated to fall about 12 percent. Fertilizer prices to this point in 2002 have been between 11 to 25 percent lower than during the same months in 2001. What will happen with fertilizer expenses hinges on what occurred with fertilizer prices and use in 2001. Fertilizer application rates fell in 2001 due to high prices and, in some places, limited supply. Fertilizer use will probably increase in 2002 because of lower fertilizer prices, the need to replenish soil nutrients, and the increase in corn acreage. The slight rise in anticipated pesticide expenditures is due to acreage expanding slightly more than prices fall.

Livestock-Related Expenses

Following a 3-percent jump in 2001, feed expenses are forecast to rise 4.8 percent in 2002. Feed prices are forecast to rise about 2 percent and increased meat and milk production will account for the rest of the change.

The number of grain-consuming animal units is forecast up slightly for the 2001-2002 feeding year. The number of cattle on feed remains relatively high because cattle and calves are being pushed into feedlots by the 4th straight year of drought in the Plains grazing areas, by strong hay prices, and by cattle being fed to heavier weights.

Other Expenses

Fuel expenses for 2002 are expected to fall 4.3 percent ($380 million) as average fuel prices drop a little more than that. Electricity's cost per kilowatt-hour is forecast up 2.4 percent, which in combination with a slight increase in sector total output, should lead to a 3.1-percent ($110 million) increase in the expense.

The largest users of fuel in 2001 were grain and oilseed, cotton, greenhouse and nursery, and beef cattle operations. Grain and oilseed farms use a great deal of diesel for the field operations of their equipment. They also use LP gas in some volume. Greenhouse and nursery operations use a lot of natural gas to provide heat in their buildings. Gasoline and diesel are a major component of total expenses for beef cattle farms, but the ratio of their fuel use to total U.S. fuel use is much less than their portion of total farms.

In 2001, 57.5 percent of contract labor expenses took place on fruits, nuts, and berry farms and 71.5 occurred in the Pacific production region, primarily in California. Significant amounts of contract labor were also present on vegetable and melon and greenhouse and nursery operations. Hired labor costs are now projected to rise 6.8 percent as the result of a small decrease in total output and a 5.9-percent increase in wage rates. The increase in 2002 wage rates is now greater than the 4-percent increase in the preceding 5 years and may result from stronger competition for rural workers.

The only factor payment that will decline in 2002 is interest expenses. The 2.5-percent fall in interest expenses is the result of a 0.4-percent increase in real estate interest and a 5.4-percent drop in nonreal estate (short-term) interest.

Cost Control

Since the highs of 1996 and 1997, prices for many major field crops have been depressed. Average corn prices have been below $2.00 per bushel in most months since 1998. Until recently, wheat prices stayed below $3.00 per bushel and soybean prices have mostly been under $5.00. Likewise, cotton prices have trended downward since the mid-90s and are currently less than 35 cents per pound. Input costs have also been higher in recent years as higher energy prices caused a spike in fuel and fertilizer costs during 2000 and 2001. Faced with this cost-price squeeze, many crop producers have attempted to maintain their profitability by implementing measures to control costs.

The 2001 ARMS asked producers about their use of various management practices and strategies to control costs. Results of the survey are presented by farm typology in table 6. Rural residence farms have operators with a major occupation other than farming, and primarily support their household through off-farm sources of income. Operators of intermediate and almost all commercial farms have a major occupation as farming, but are distinguished by size of operation divided at $250,000 in total farm sales. Results show that the use of cost control practices and strategies has been much greater among operators with farming as the major occupation, and among larger farm operations. These results are consistent across input management, overhead management, and long-term planning strategies. Rural residence farmers likely have less time and incentive for cost control because household income is generated mainly off farm, and because they often have different business goals than do other farm operators. Operators of larger farms may use cost containment more often because of differences in the management approach, financial position, stage of life, and household dependence on farm income between operators of smaller and larger farms.

Table 6--Reported practices and strategies used to control costs on U.S. farm operations by farm typology, 2001 1/

Item	Rural residence farms	Intermediate farms	Commercial farms
	Percent of farms		
Input management:			
Forward purchased inputs	6	20	38
Reduced input quantities	10	23	33
Negotiated lower input prices	10	22	39
Changed production practices	11	21	31
Changed enterprise mix	3	6	12
Used farm management service	4	10	27
Overhead management:			
Renegotiated rental agreements	3	7	14
Refinanced farm loans	3	12	19
Long-term plan:			
Expand size of operation	8	11	21
Alter machinery complement	6	11	26
Adopt cost saving technology	8	16	33

1/ Rural residence farms have farm operators reporting a major occupation other than farming. Intermediate and commercial farms have farm operators reporting a major occupation as farming. Intermediate farms have less than $250,000 in value of sales. Commercial farms have $250,000 or more in value of sales.

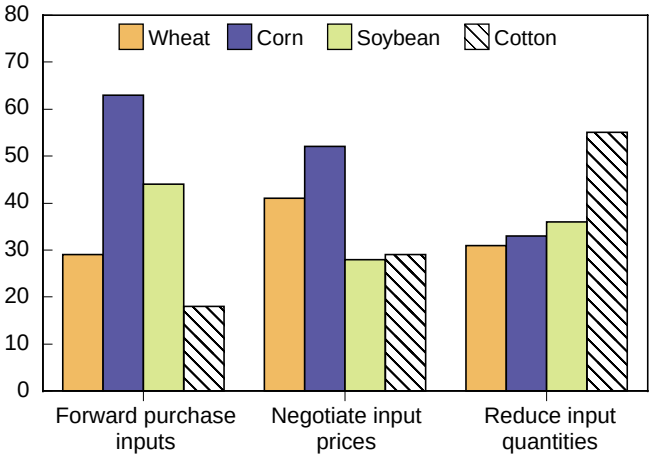
Source: Preliminary analysis of the 2001 Agricultural Resource Management Survey.

Input management practices used by intermediate and commercial producers of four major crops are shown in figure 17. Corn producers were the most likely to control costs by forward purchasing inputs and negotiating input prices. Over 60 percent of corn growers forward purchased inputs and over half negotiated lower input prices in 2001. Since nitrogen fertilizer prices were sharply higher in 2001 and corn producers are the largest users of nitrogen fertilizers, fertilizer cost control was probably important to corn producers in 2001 (see enterprise cost of production for more detail). Cotton producers were the most likely to reduce input quantities for cost control. Cotton production uses relatively more inputs than other crops and thus is afforded more opportunities for input reduction, such as less pesticide use with bio-tech cotton. In contrast, wheat and soybean production uses relatively few inputs. Cotton producers were also more likely to control costs by refinancing loans, and by long-term strategies that include expanding the operation and adopting cost-saving technologies (fig. 18).

Figure 17

Input management practices used to control costs by type of farm, 2001

Percent of farms

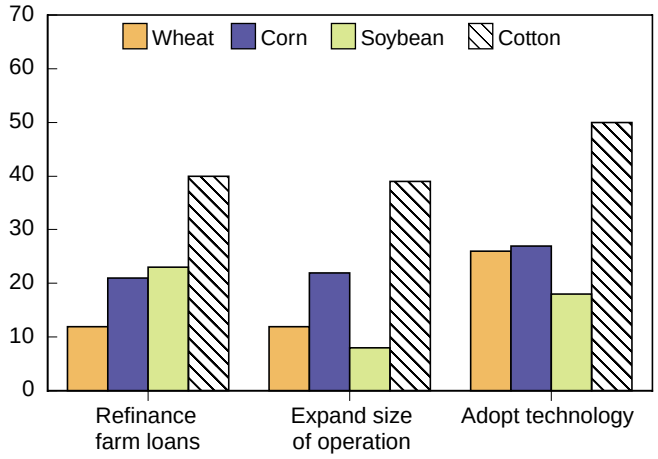


Includes only intermediate and commercial farms.
Source: ARMS/USDA.

Figure 18

Strategies for cost control by type of farm, 2001

Percent of farms



Includes only intermediate and commercial farms.
Source: ARMS/USDA.

Cost containment is similarly important for livestock producers, particularly among dairy operations. Nearly all poultry production and much of hog production takes place under contract with large contractors who supply or specify most of the inputs and output price risk. In contrast, milk production, like most field crop production, is mainly on independent operations that must manage price risk. About a third of milk producers reported reducing input quantities and negotiating lower input prices in 2001.

Government Payments

For calendar 2002, payments received by farmers will come from a mix of programs under both the previous and the new legislation. At this time, the Economic Research Service assumes that direct government payments will total $16,971 million, down 18 percent from the previous year (table 7). Prospects for crop production have declined and crop prices have strengthened over the summer, lowering earlier forecasts of payments. Despite additional commodities being eligible for loan deficiency payments, loan deficiency payments are expected to be 63 percent lower because of lower production and higher prices of program eligible crops. Production flexibility payments, direct payments, and counter-cyclical payments are expected to amount to $8,609.9 million in 2002. This is much larger than the $4,040.4 million realized in production flexibility payments in 2001. However, when all sources of payments are considered, the current assumption is that payments will decline by about $4.5 billion in 2002.

Questions are often raised about how many and which farms receive government payments. According to the 2001 ARMS, 40.9 percent of all farms received government payments in 2001 (table 8). This was down from the previous year when 43 percent of farms reported receiving government payments. A much higher share of commercial farms received payments relative to other types of farms.

Payments averaged $17,319 for those operations receiving payments, contributing 13.9 percent of gross cash income to these farms (table 9). While 39.8 percent of rural residential farms received government payments, 15.2 percent of payments went to rural residence farms. These payments were mostly from conservation programs and represented 25.9 percent of those farms' gross cash income (fig. 19). Nearly 51.9 percent of government payments went to commercial farms (large and very large family farms and nonfamily farms). The largest payments went to the very large family farms. About 72 percent of commercial farms received government payments, but they represented only 11.2 percent of gross cash income.

Looking at the composition of average government payments reported by farms receiving government payments, production flexibility contract (AMTA) and loan deficiency payments contributed about 60 percent of the total (fig. 20). Market loss and disaster assistance (MLDA) payments contributed 21 percent of the

Table 7--Direct government payments, 1998-2002F

	1998	1999	2000	2001P	2002F	Change from 2001 to 2002	
			$ million			$ million	Percent
Total direct payments 1/	12,380.0	21,513.1	22,896.4	20,727.5	16,970.6	-3,756.9	-18.1
Marketing Loan Gains 2/	171.1	895.5	1,127.1	707.7	2,000.0	1,292.3	182.6
Production flexibility contracts (AMTA) 3/	6,000.6	5,045.7	5,048.8	4,040.4	3,013.8	-1,026.6	-25.4
Direct payments 4/					5,036.3	5,036.3	n.a.
Counter-cyclical payments 5/					559.8	559.8	n.a.
Loan deficiency payments 6/	1,783.0	5,919.1	6,424.5	5,464.2	2,026.8	-3,437.4	-62.9
Compensation payments to peanut quota holders 7/					649.0	649.0	n.a.
National Dairy Market Loss Payments					657.4	657.4	n.a.
Conservation payments 8/	1,474.9	1,493.6	1,614.7	1,803.1	1,845.0	41.9	2.3
Emergency assistance payments 9/	2,818.0	7,803.9	8,492.5	8,405.5	907.5	-7,498.0	-89.2
Miscellaneous payments 10/	132.5	355.4	188.8	306.9	275.0	-31.9	-10.4

P = preliminary. F = forecast. n.a. = not applicable. Numbers may not add due to rounding.
1/ Includes only those funds paid directly to farmers within the calendar year.
2/ In publications prior to May of 2001, marketing loan gains were included in cash receipts rather than in government payments.
3/ Enactment of Farm Act 2002 terminated the authority for production flexibility payments for fiscal year 2002.
4/ This estimate assumes all of the crop year 2000 direct payment adjusted for production flexibility payments for fiscal year 2002 plus 50 pecent of 2001 crop year payment as first partial payment are received in calendar year 2002.
5/ This estimate assumes that 35 percent of the 2002 crop year payment is received as first partial payment is received in caledar year 2002.
6/ Starting in 2001, this estimate includes payments for grazed acres of wheat, barley, and oats.
7/ This estimate assumes that 50 percent of the toal payment is received in 2002.
8/ This includes amount paid under the following conservation programs -- Conservation Reserve, Agricultural Conservation, Emergency Conservation, and Great Plains Programs. Other conservation programs are considered as miscellanous.
9/ This includes payments to farmers as a consequence of emergency Supplemental Assistance Legislation enacted in October 1998, October 1999, June 2000, and August 2001. This also includes aid to drought-stricken farmers and ranchers in 2002 including the $752 million in assistance through the Livestock Compensation Program announced September 19, 2002.
10/ Miscellaneous programs and provisions vary from year to year. The payments in 2002 include Market Loss Assistance Payments to Apple and Onion Producers.

total, nearly twice the level of Conservation Reserve Program (CRP) payments. However, limited resources, retirement, and residential/lifestyle family farms received larger payment from the CRP than from MLDA programs. For retirement farms, about 68 percent of government payments were CRP payments.

Farms specializing in cotton (over 50 percent of total value of production from cotton) received $55,859, the highest average payment of any crop specialization. However, 47 percent of all government payments went to cash grain farms, which averaged $34,174 in payments. Regionally, the largest payments were realized in the Northern Great Plains and Fruitful Rim regions. The smallest payments went to farms in the Eastern Uplands. Farms in the Heartland and Northern Great Plains regions were most likely to receive payments. Farms in the Fruitful Rim were least likely to receive payments. Better than 90 percent of cash grain farms and soybean farms and 89 percent of cotton farms received government payments. For soybean farms, these payments represented 26 percent of gross cash income. For cash grain farms and cotton farms, these payments represented about 21 percent of gross cash income. Only 30 percent of beef cattle farms received government payments. Although 62 percent of dairy farms received government payments, payments represented only 4 percent of gross cash income.

Questions are also raised about the distribution of government payments by size of farm (fig. 21). This is the direct result of payments being determined by the type of commodities targeted by each program and the amount of crops eligible for program benefits. A much higher share of cash grain, soybean, and cotton farms received government payments relative to all other farm types. These types of farms are more heavily concentrated in the middle to the upper sizes of farms as measured by sales of products. Beef cattle farms, which had a much lower participation rate, are more heavily concentrated in the lower sales classes.

A smaller share of farms with sales under $50,000 received government payments relative to the share of

Table 8--Number of farms, average government payments, and payments contribution to farm income by program and combined farm typology, 2001

	48-State total	Rural residence farms	Intermediate farms	Commercial farms
All farms	2,149,683	1,286,549	659,962	203,172
Average gross cash income ($)	85,612	11,843	66,419	615,087
Average government payments ($)	7,092	1,799	7,594	38,981
Percent of gross cash income (%)	8.3	15.2	11.4	6.3
Farms receiving government payments	880,286	383,385	349,745	147,156
Percent of all farms (%)	40.9	29.8	53	72.4
Average gross cash income ($)	124,201	23,339	85,354	479,303
Average government payments ($)	17,319	6,038	14,329	53,820
Percent of gross cash income (%)	13.9	25.9	16.8	11.2
Average AMTA payments ($)	4,827	909	4,341	16,192
Average loan deficiency payments ($)	5,505	1,237	4,113	19,933
Average CRP payments ($)	1,868	2,359	1,152	*2,289
Average market loss and disaster payments ($)	3,591	844	3,595	10,738
Average other payments ($)	1,528	689	1,128	4,668
Farms receiving AMTA payments	464,839	150,716	221,970	92,153
Percent of all farms (%)	21.6	11.7	33.6	45.4
Average gross cash income ($)	168,984	34,962	100,961	552,022
Average government payments ($)	25,917	7,593	18,662	73,359
Percent of gross cash income (%)	15.3	21.7	18.5	13.3
Average AMTA payments ($)	9,142	2,313	6,840	25,856
Percent of government payments (%)	35.3	30.5	36.7	35.2
Farms receiving loan deficiency payments	404,890	117,344	194,742	92,804
Percent of all farms (%)	18.8	9.1	29.5	45.7
Average gross cash income ($)	186,451	37,700	102,914	549,833
Average government payments ($)	27,651	7,620	18,908	71,325
Percent of gross cash income (%)	14.8	20.2	18.4	13
Average loan deficiency payments ($)	11,969	4,041	7,387	31,608
Percent of government payments (%)	43.3	53	39.1	44.3
Farms receiving CRP payments	269,120	154,571	66,937	*47,612
Percent of all farms (%)	12.5	12	10.1	*23.4
Average gross cash income ($)	80,100	15,257	80,391	#290,204
Average government payments ($)	16,891	7,681	19,401	#43,263
Percent of gross cash income (%)	21.1	50.3	24.1	14.9
Average CRP payments ($)	6,109	5,850	6,019	7,074
Percent of government payments (%)	36.2	76.2	31	*16.4
Farms receiving market loss and disaster payments	386,840	123,570	190,390	72,881
Percent of all farms (%)	18	9.6	28.8	35.9
Average gross cash income ($)	156,575	32,395	96,240	524,742
Average government payments ($)	23,753	7,138	17,296	68,791
Percent of gross cash income (%)	15.2	22	18	13.1
Average market loss and disaster payments ($)	8,172	2,620	6,604	21,680
Percent of government payments (%)	34.4	36.7	38.2	31.5
Farms receiving other payments 1/	284,049	92,899	136,190	54,960
Percent of all farms (%)	13.2	7.2	20.6	27.1
Average gross cash income ($)	160,518	33,116	95,933	535,903
Average government payments ($)	24,796	8,446	17,542	70,410
Percent of gross cash income (%)	15.4	25.5	18.3	13.1
Average other payments ($)	4,737	2,842	2,897	12,499
Percent of government payments (%)	19.1	33.6	16.5	17.8
Farms receiving no government payments	1,269,397	903,163	310,217	56,017
Percent of all farms (%)	59.1	70.2	47	27.6
Average gross cash income ($)	70,858	8,946	47,114	997,254

1/ Includes EQIP, WRP, and other Federal and State program payments.

Source: 2001 USDA Agricultural Resource Management Survey.

Table 9--Distribution of government payments among farms, 2001

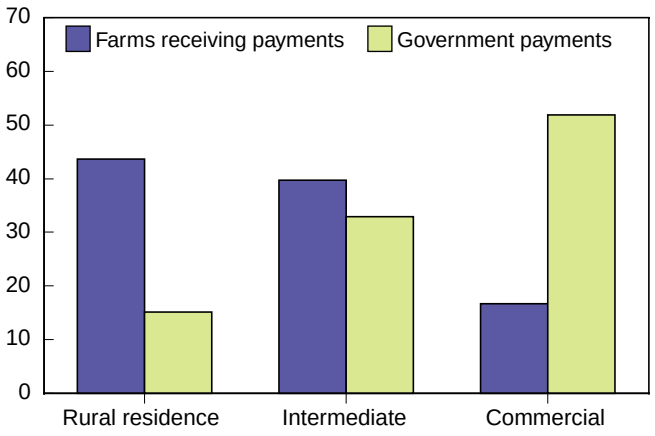
	Distribution of total payments	Percent of all farms	Percent of farms reporting	Percent of reporting farms	Payments as percent of gross cash income	Payments per farm	Payments per reporting farm
		----------	Percent	----------		Dollars	
All farms	100	100	41	100	8	7,092	17,319
Economic class:							
$500,000 or more	28	3	67	5	5	61,953	92,411
$250,000 to $499,999	22	4	78	8	12	38,703	49,468
$100,000 to $249.999	23	9	71	16	11	18,307	25,662
$50,000 to $99,999	12	8	71	14	14	10,399	14,649
$10,000 to $49,999	11	21	56	28	13	3,765	6,705
Less than $10,000	5	55	22	30	14	579	2,645
Farm type:							
Cash grain and oilseed	54	14	93	31	22	28,024	30,177
Cotton	6	1	89	*2	21	49,950	55,859
Other crop	18	29	42	29	5	4,542	10,801
Beef	12	34	30	25	6	2,441	8,117
Hog	3	1	58	2	6	17,760	30,413
Dairy	4	4	62	6	2	7,173	11,491
Other livestock	2	18	11	5	3	892	8,266
ERS resource regions:							
Heartland	39	19	71	32	15	15,028	21,153
Northern Crescent	8	15	42	15	5	3,978	9,379
Northern Great Plains	13	5	72	9	15	17,809	24,601
Prairie Gateway	18	14	47	16	12	9,034	19,121
Eastern Uplands	2	16	20	8	3	681	3,417
Southern Seaboard	4	11	25	7	7	2,732	11,052
Fruitful Rim	6	12	16	5	2	3,755	23,791
Basin and Range	2	4	26	2	5	4,026	15,606
Mississippi Portal	8	6	47	*7	17	10,130	*21,619
Farm typology:							
Rural residence farms	15	60	30	44	15	1,799	6,038
Intermediate farms	33	31	53	40	11	7,594	14,329
Commercial farms	52	10	72	17	6	38,981	53,820
Net cash farm income:							
$100,000 or more	32	5	69	8	5	49,808	72,417
$40,000 to $99,999	21	7	74	13	11	21,059	28,349
$10,000 to $39.999	20	13	65	20	14	11,154	17,116
$1 to $9,999	9	22	49	26	16	3,034	6,211
$0 to -$9,999	6	39	24	23	13	1,019	4,264
-$10,000 to -$39,999	6	13	25	8	11	2,945	11,646
Less than -$40,000	7	2	55	3	8	21,471	39,313

* indicates that the standard error of the estimate is greater than 25 percent and less than or equal to 50 percent.
# indicates that the standard error of the estimate is greater than 50 percent and less than or equal to 75 percent.
a indicates that the standard error of the estimate is greater than 75 percent.

Source: 2001 USDA Agricultural Resource Management Study.

Figure 19

Distribution of farms receiving government payments and payments by typology, 2001



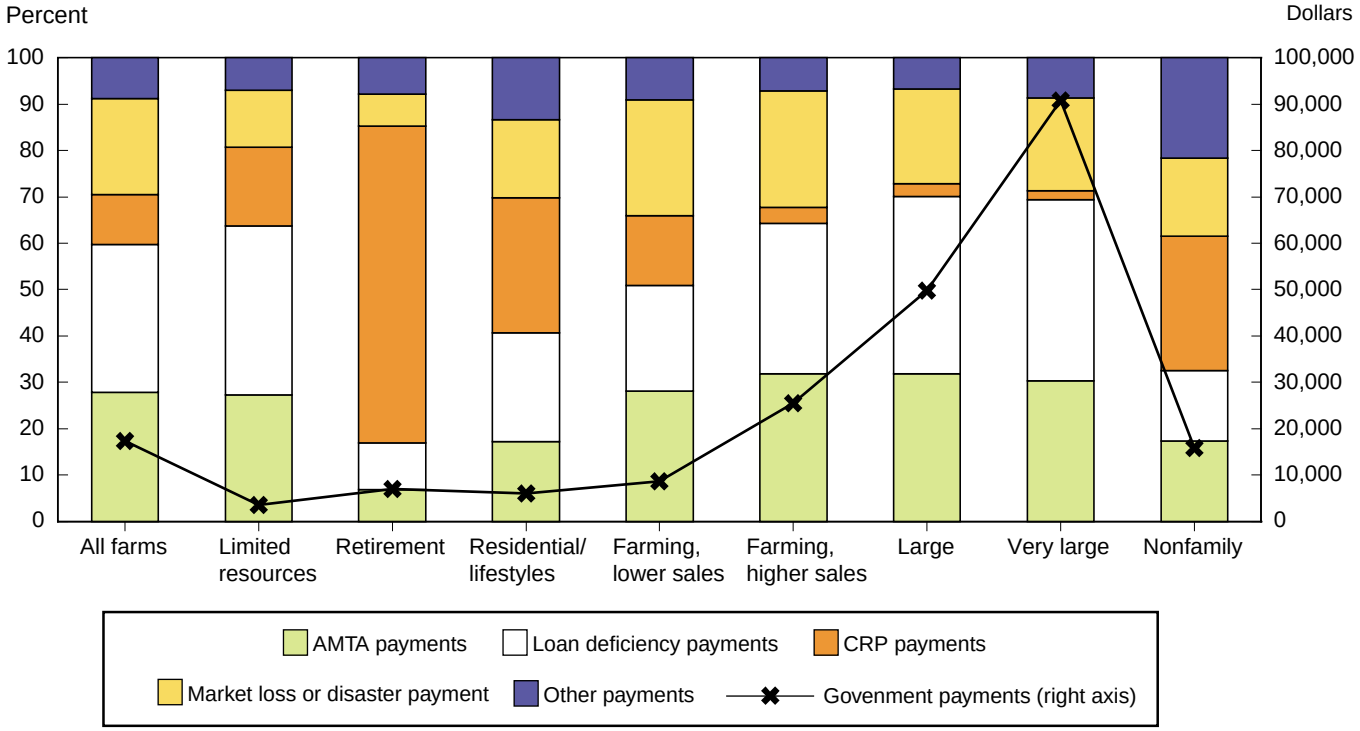
Source: ARMS/USDA.

farms with sales over $50,000. Average payments for AMTA, LDP, and MLDA received by recipient farms increase with farm size. Further, the average payments for AMTA, LDP, and MLDA received by recipient cash grain and soybean farms are larger than for the respective payments for any other type of farm. The only exception to this is the CRP, where the largest payments are realized by recipient farms in the lower sales classes.

In summary, about 76 percent of all farms have less than $50,000 in sales. These farms receive 16 percent of total government payments. However, they also receive 67 percent of the CRP payments. At the other extreme, about 7 percent of all farms have sales of $250,000 or more. These farms receive half of total government payments.

Figure 20

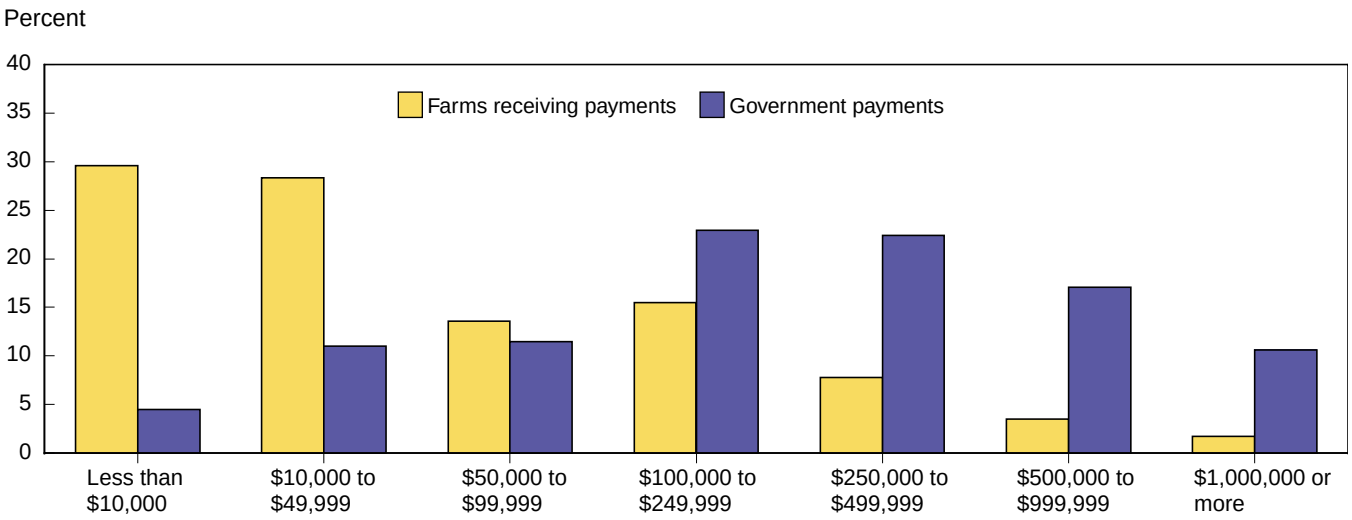
Composition of government payments and mean government payments for farms receiving payment by detailed typology, 2001



Source: ARMS/USDA.

Figure 21

Distribution of farms receiving government payments and payments by sales class, 2001



Source: ARMS/USDA.

Balance Sheet Outlook

Farm Sector Assets and Equity

Farm business sector assets, debt, and equity values continue to rise modestly despite lower commodity prices and the decline in farm sector returns. Rising asset values reflect farm investors' and lenders' collective decisions and their expectations about the relative stability and profitability of farm and nonfarm sector investments.

U.S. farm business sector assets are forecast to rise slightly from the $1.2 trillion attained in 2001. The value of farm real estate, the largest share of the sector's assets, is expected to increase by 1 percent. The projected decline in farm income is anticipated to slow farmland value growth from its recent rapid growth of 4.5 percent in 2001 and 4.1 percent in 2000. Farm business debt is expected to grow about 2 percent this year, reaching $196.5 billion. By the end of 2002 farm debt will surpass its previous record level (in nominal terms) of $193.8 billion set in 1984. Sector equity (net worth) is expected to rise modestly. On average, asset values grew nearly 4 percent annually during the 1990s.

Farm business balance sheets have steadily improved over the last 10 years. Debt-to-asset ratios have improved as increases in debt have been more than offset by larger gains in farm asset values. As a result, the degree of farmland leverage has declined. This has provided farm investors with an added equity cushion to lessen the impact of any short-term declines in income or asset values.

Farmland Values

The value of farm real estate increased 4.5 percent in 2001 and is expected to increase by an average of 1 percent in 2002. Despite the general economic slowdown, favorable mortgage interest rates have spurred growth in the housing sector, resulting in strong demand for land for urbanization and recreational purposes. Passage of the 2002 Farm Bill, which reduced uncertainty concerning future farm program payments, has been a key factor contributing to recent farmland value gains.

However, there is considerable variation in the growth of farmland prices across the country. This reflects a variety of factors, including differences in land quality and location, credit conditions, non-farm investment opportunities, government farm policies, and production risks and weather uncertainties unique to each region's agriculture.

Evidence of these regional differences and trends is provided by a variety of sources, including information from the ARMS survey and farmland survey data in the Federal Reserve System's Chicago, Kansas City, Dallas and Minneapolis Districts. Agricultural bankers responding to Fed surveys suggest that continued demand for agricultural land near urban areas and demand for rural land for recreational purposes is contributing to the growth in real estate values.

Agricultural bankers surveyed by the Chicago Federal Reserve Bank (including Iowa and parts of Illinois, Indiana, Michigan, and Wisconsin) report considerable disparities in farmland value gains across these States. For the year ended April 30, 2002, the value of "good" farmland was up 6 percent district-wide. Annual farmland price gains were strongest in Wisconsin and Michigan (up 8 percent or more). Illinois, with a gain of 3 percent, showed the lowest growth rate. The region's cash rental rates are up about 2 percent in 2002, as rents increased more slowly than farmland values. Bankers report that strong demand for land for urbanization purposes is contributing to rising land values in outlying areas, as farmers trade urban fringe land for more remote parcels in tax-deferred exchanges. Such exchanges, if meeting the requirements of Section 1031 of the IRS code, defer the gain on the sale of the urban fringe land.

In addition to geographical variation, there is obvious variation by land use. Surveyed bankers in the Minneapolis Federal Reserve Bank District (Montana, North Dakota, South Dakota, Minnesota, and parts of Wisconsin and Michigan) indicate that, in the year ending June 30, 2002, ranchland gained almost 12 percent, while non-irrigated cropland increased 7.5 percent and irrigated cropland rose 4.8 percent. Bankers cited greater certainty concerning future government payments and demand for urban expansion and recreational uses as sources of strength.

Agricultural bankers in the Dallas Federal Reserve Bank District estimate that the price of both non-irrigated and irrigated cropland rose by less than 1 percent, while the price of ranchland rose by 5.8. Land prices, particularly for irrigated cropland, are stabilizing, reflecting not only

current low commodity prices but also the slow recovery in the general economy (particularly in the technology sector). However, bankers are optimistic that the 2002 Farm Bill will provide needed support for crop producers. Continuing dry conditions and uncertain water rights are of concern in some areas. Rangeland prices are stabilizing as the demand for hunting and recreational land is moderating.

In the West, water has always been a key factor affecting the value of land. Reallocation of traditional agricultural water rights to environmental-enhancement purposes, coupled with increased pumping costs due to rising electricity prices, could lower net returns to farming and moderate increases in farmland values in affected areas.

Traditional commodities grown also have an effect on land prices. Farms in the Kansas City Federal Reserve District (Kansas, Nebraska, Oklahoma, Colorado, Wyoming, and parts of Missouri and New Mexico) include a variety of farm types. These primarily include wheat, sorghum, and corn farms (all program crops) as well as cattle and sheep ranches. Bankers in the Kansas City District estimate prices for farm and ranch land increased by about 3 percent in the year ending March 31, 2002, slowing from the 4- to 5-percent growth rates experienced during 1998-2001. Nonfarm demand has held firm, contributing to more rapid land value gains in the Mountain States and Missouri.

Government Payments Help Stabilize Income, Support Land Values

Government payments contribute to farm income and, since the value of agricultural land depends largely on its expected future earnings from farming, indirectly support farmland values. Payments are generally attached to the land, and the rights to receive payments are transferred with ownership of the land. Current landowners capture a large portion of the expected future benefits in the form of higher land values.

The bidding of government payments into higher rents and land values is an inexact process. Some payment benefits do accrue to tenants and sharecroppers, as well as to the merchants providing seed, fertilizer, machinery, and other inputs used in the production process. Indirect additional benefits accrue, as local economic multipliers create ripple effects throughout the rural community, and lenders benefit from the improved repayment capacity of farm borrowers and reduced risk on farm loan portfolios. Passage of the 2002 Farm Bill has reduced the uncertainty of future government support of agriculture and has contributed to strength of land values in areas producing traditional farm program commodities.

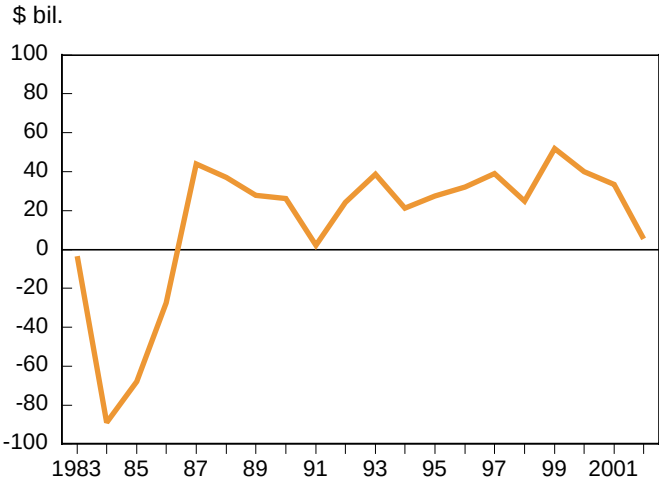
Nonreal Estate Values

Nonreal estate asset values are expected to decrease slightly in 2002. The value of machinery and equipment is expected to rise slightly, while financial assets and inventories of crops, livestock, and purchased inputs are expected to decline or remain unchanged. The value of livestock and poultry inventories is declining despite a projected 5-percent rise in the value of cattle inventories, which is more than offset by an anticipated decline in the value of hog inventories. A projected fall in hog prices overshadows the gain in the number of hogs. Machinery and equipment values are also rising slowly as net investment in machinery and equipment is above 2001 levels.

Farm Sector Equity

Farm sector equity or net worth is the value of farm business assets minus farm business debt. Equity therefore represents the residual claims on assets held by the firm's proprietor, partners, or stockholders after accounting for all debt claims. Farm business equity is expected to continue rising in 2002 as the increase in farm asset values exceeds the rise in farm debt. In current dollars, sector net worth is estimated to be about $1,042.9 billion, up $5.4 billion from 2001 (fig. 22). Data from the 1999 *Agricultural Economics and Land Ownership Survey* indicate that about a third of the

Figure 22
Annual change in farm equity, 1983-2002



2002 forecast.
Source: Economic Research Service, USDA.

increase in equity (about $1.8 billion) will accrue to non-operator landlords, with the other two-thirds (about $3.6 billion) attributable to farm operators.

Farm Debt Outlook

Farm business debt is expected to rise about 2 percent in 2002, marking 10 consecutive years of growing farm debt balances. The $196.6 billion in debt outstanding at the end of 2002 will, in nominal terms, surpass 1984's record level of $193.8 billion (table 10). The anticipated moderate increase in loan balances in 2002 would follow debt growth of 4.1 percent in both 2001 and 2000. These increases were slightly above the 1993-1998 farm debt expansion, when year-end loan balances grew at an annualized rate of 3.7 percent. Debt gains peaked at $9.3 billion (6 percent) in 1997 and $7.5 billion (4.5 percent) in 1998, the largest consecutive annual increases since 1980.

Crop cash receipts are anticipated to rise in 2002, but lower livestock cash receipts and reduced total assistance from the Federal Government indicate a $10-billion decline in gross cash income. This top-line income decrease, coupled with relatively level production expenditures, translates directly into a $9.6-billion decline in net cash income, reducing income available to many farmers to meet their current debt service needs. Financial conditions are anticipated to decline somewhat in the crop sector, but deteriorate more for livestock producers.

Farmers' Use of Repayment Capacity Expected To Rise in 2002

While the rise in debt in recent years may result in additional financial difficulty for some farm operators, it does not indicate widespread financial distress in the farm sector. Viewed from the farm sector level, farm operators are expected to use their available credit lines more fully in 2002. Lenders generally require that no more than 80 percent of a loan applicant's income available for debt service be used for repayment of principal and interest on loans. For farm operators, this income (measured as net cash income plus interest for the farm sector) can be used to determine the maximum amount of loan payment the farmer could make. Given current market interest rates and an established repayment period, the maximum debt that the farmer could carry with this loan payment can be determined. Using current bank interest rates and a 7-year repayment period, maximum feasible debt conceptually measures the line of credit that could be available to farmers.

Debt repayment capacity utilization (DRCU), computed as actual debt relative to maximum feasible debt, effectively measures the extent to which farmers can service debt using only current income. The projected 8-percent decline in net cash income in 2002 means that farmers will have significantly less cash available to meet production expenses and service rising debt loads. The projected 2002 DRCU ratio indicates that, in 2002, farmers can be expected to use more than 67 percent of the debt that could be supported by their current incomes. Deterioration in the overall ability of the farm sector to service debt is indicated by the rise in DRCU from about 60 percent in 2001. As previously noted, many farm businesses, especially livestock producers, may experience additional difficulty in meeting 2002 debt service obligations.

Farm Household Assets and Debt

Limiting discussion of farm assets and debt to the farm sector level masks the wide variation in the financial condition of farm operator households. ARMS data, excluding nonfamily farms, suggest that the financial condition of households operating family farms, on average, was strong entering 2002. Farm households are likely to experience financial stress when debt levels become burdensome. Debt repayment poses no serious problem for the 58 percent of operator households that reported owing no farm debt at the end of 2001. The extent of debt exposure varied widely across farm typology classes, with farm debt balances being reported by about one-third of rural residences, less than half of intermediate farms, and more than three-fourths of commercial farms.

Despite several years of weak commodity prices, owning a farming operation has served as an important wealth-building tool for many farm operator households. Family farms had an average household wealth (net worth) of almost $570,000 in 2001, with about 84 percent of this wealth derived from their farm businesses. The average value of farm assets on family farms approached $535,000 in 2001, with the farm operator's dwelling accounting for about $78,000 of total farm assets. Family farms reported farm debt of less than $57,000, resulting in a calculated average net worth of family farm businesses exceeding $475,000. In addition to the wealth of their farm businesses, farm operator households have accumulated average nonfarm wealth of more than $90,000.

Analysis of ARMS data using ERS' farm typology classification system illustrates the diversity among

family farms. About 7 percent of all family farms are classified as ***commercial farms***, reporting sales greater than $250,000. These large operations efficiently manage a substantial asset base, accounting for two-thirds of the value of production on all family farms. In 2001, they generated more than $160,000 in net cash income on an owned asset base valued at almost $2,000,000. These farms reported an average farm net worth of almost $1,620,000, with an additional $100,000 in nonfarm net worth. Commercial farms generate sizeable cash flows, and advantageously use credit to enhance returns. Three-fourths of commercial farms reported debt balances entering 2002.

While intermediate and rural residential farm households earn the bulk of their income from off-farm sources, the farm asset and net worth bases of these households account for a substantial portion of their accumulated wealth.

Intermediate farms, those with sales less than $250,000 that indicate farming as the operator's primary occupation, account for 32 percent of all family farms. While these generate negative rates of return on farm assets, on average, they reported off-farm household income of almost $40,000 in 2001. These farms, despite low returns to farming, owned farm assets valued at about $640,000, on average, and reported farm net worth of $585,000. Nonfarm wealth boosted household net worth to almost $675,000 per farm. Slightly less than half of these farms reported farm debt balances at the end of 2001.

About 61 percent of family farms are ***rural residences***, which may not necessarily view farm operations as profit centers. The residential nature of these operations is evidenced by the relative importance of the operator dwelling, which accounts for almost one-fourth of the total value of farm assets. Traditional farm financial performance measures are meaningless in assessing the financial condition of rural residences, since their financial well-being is more closely tied to off-farm employment conditions in the rural economy than to profitability of their farming operations. While farming activities on rural residence farms generated negative net cash income, on average, these operations reported farm assets valued at almost $320,000. Low returns to farming in 2001 were offset by average off-farm income of almost $74,000.

Farm assets contribute significantly to the wealth of the rural residence farms, which had an average farm net worth of more than $290,000, plus an additional $170,000 in nonfarm net worth. About one-third of these farms reported farm debt outstanding at the end of 2001, with farm business debt-to-asset ratios averaging less than 8 percent. These households reported farm liabilities of about $24,000 and nonfarm liabilities of almost $73,000. Considering both farm and nonfarm balance sheets, the average rural residence household debt-to-asset ratio approached 16 percent.

While varying between farm typology classes, farm assets account for a large share of total operator household assets for all classes. As might be expected, farm assets are 94 percent of reported household assets for commercial farms and 86 percent of assets for intermediate farms. Farm assets, including the operator dwelling, represent almost 70 percent of total assets in rural residence households. Considering the dwelling a nonfarm asset for rural residence households, farm assets would still represent 53 percent of total assets.

Household Debt Levels Not Yet Burdensome

Debt levels did not appear to be creating loan repayment problems for the 42 percent of all farms reporting debt balances at the end of 2001. Farm business debt-to-asset ratios were only 11 percent, on average. Family farms had borrowed about 45 percent of the total household debt that they could service with 2001 income from both farm and nonfarm sources. However, debt repayment could become problematic for the 53 percent of indebted farm households whose total borrowings exceeded 120 percent of the amount they could service with current income from all sources. These highly indebted operations owe about 51 percent of all reported household debt.

About 35 percent of indebted commercial farms reported levels exceeding 120 percent of the debt that could be serviced with 2001 income. These highly indebted operations owed more than 44 percent of all household debt reported by commercial farms. Debt service problems could be more severe for intermediate farms, as more than 57 percent indicated potentially burdensome debt levels. These indebted farms owed more than 52 percent of all household liabilities reported by intermediate farms. Any financial stress encountered by rural residence farm households were more likely due to debt service difficulties arising from their nonfarm debt levels, rather than their farm-related borrowings.

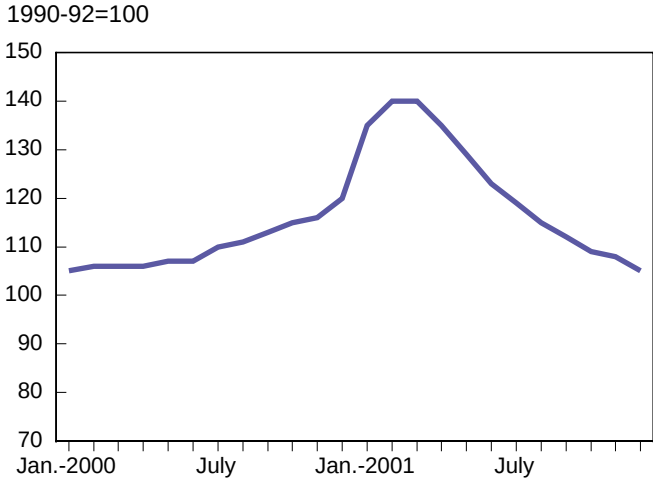
Aggregate prices paid for farm production inputs increased only about 3 percent from 2000 to 2001 as sharply higher fertilizer prices were offset by lower energy costs. Fertilizer prices averaged 12 percent higher in 2001, but during the spring planting season were more than 25 percent higher than in 2000, the result of high energy prices in 2000 that drove up the cost of producing nitrogen fertilizer. In contrast, average energy prices dropped about 10 percent from 2000 to 2001. Prices received for most major field crops in 2001 remained low relative to those in the mid-90s, but were up slightly from 2000. However, cotton prices were down about 20 percent. The combination of product prices and input costs in 2001 caused net returns to remain mostly unchanged for most field crops, except for sharply lower cotton returns. Livestock feed prices were up about 7 percent in 2001, but higher prices improved net returns to milk and hog production. Milk prices were about 20 percent higher and average hog prices improved slightly. Feeder cattle prices were up in 2001 for the 3rd consecutive year, but not enough to cover additional forage and concentrate costs.

The Response to Higher Fertilizer Prices in 2001

Prices for nitrogen fertilizer began to rise in the fall of 2000 and peaked early in the spring planting season of 2001 in response to tight supplies and rising prices of natural gas (fig. 23). Natural gas is the major cost component in producing nitrogen fertilizer, accounting for 75-90 percent of anhydrous ammonia production costs. During the winter of 2000/2001, high prices for natural gas caused some fertilizer companies to reduce the production of nitrogen, raising fears of a shortage for the planting season.

The response of producers to higher fertilizer prices varied across the sector, as producers of different crops are more or less dependent on nitrogen fertilizers. Corn producers are the largest users of nitrogen fertilizer products. The 2001 Agricultural Resource Management Survey asked corn producers how they altered the amount applied or management of commercial fertilizer in response to higher prices (table 10). About a third of corn producers reported that a majority of nitrogen fertilizer was pre-purchased at a predetermined price set prior to January 1, 2001, and thus was not affected by the sharp rise in fertilizer prices

Figure 23
Monthly prices paid index for fertilizer, 2000-01



Source: National Agricultural Statistics Service, *Agricultural Prices 2001 Annual Summary*, July 2002, USDA.

early in 2001. These producers were among the largest corn farms and applied the most nitrogen per acre. Eleven percent of corn producers reported adjusting nitrogen rates and/or practices in response to higher prices. About 80 percent of these producers reduced nitrogen use by an average of 23 percent. More than half of corn producers (55 percent) reported no response to higher nitrogen prices. These producers were among the smallest corn farms and applied the least amount of nitrogen.

In total, the impacts on corn production costs of sharply higher nitrogen fertilizer prices at planting were blunted to a large extent by the input management strategies used by many producers.[2] The largest and most intensive users of nitrogen fertilizer locked in prices prior to the sharp increase. Other corn producers reduced the rate of applied nitrogen and managed nitrogen more carefully. A majority of corn producers experienced the greatest impact of higher nitrogen prices, but these were generally smaller producers who applied less nitrogen.

[2] The fertilizer costs for corn shown in appendix table 9 reflect the response of producers to the higher nitrogen prices early in 2001. The 2001 fertilizer cost for U.S. corn producers of $46.79 per acre was estimated to be more than $54 had producers not purchased nitrogen prior to the price peak or altered their use of nitrogen fertilizer in response to the higher prices.

Table 10--Reported response of corn producers to higher nitrogen prices in the spring of 2001

Item	N pre-purchased 1/	Adjusted N amount or practice	No change
Percent of farms	34	11	55
Corn acres per farm	345	208	155
Nitrogen applied (lb. per acre)	138	121	110
Adjusted N by: (percent of farms) 2/			
Reducing rate 3/	n/a	80	n/a
Increasing manure/organic sources	n/a	13	n/a
Changing type of product	n/a	15	n/a
Managing more carefully	n/a	56	n/a

1/ Pre-purchased at a pre-determined price set prior to January 1, 2001.
2/ Total will not add to 100 percent because some producers made more than one adjustment.
3/ Reduced N rate by an average of 23 percent.

Source: Preliminary analysis of the 2001 Agricultural Resource Management Survey of corn producers.

Cost and Return Highlights for Crops

Despite another year of high yields, **corn** prices improved in 2001, but not enough to cover additional input costs (appendix table 9). The harvest-period price rose to $1.85 per bushel in 2001 and the marketing-year average price rose above the $1.89 loan rate to $2.00 per bushel.[3] Operating costs for corn production were up about 6 percent between 2000 and 2001 due mainly to higher fertilizer costs. Average returns among U.S. corn producers were mostly unchanged between 2000 and 2001. Most corn producers covered operating costs in 2001 as the average breakeven price was $1.21 per bushel, but the average breakeven on total costs was $2.81.

Regional differences in corn yields affected how returns to corn production differed in 2000 and 2001. Returns to corn production improved the most in the Southern Seaboard where yields were up 16 percent. Producers in the Northern Crescent experienced the largest decline in returns as average corn yields fell about 10 percent. In the other regions, returns to corn production in 2001 were mostly down from those in 2000 as higher input costs offset higher corn prices. Average returns above operating costs were positive in all regions, but corn prices remained well below breakeven prices on total costs.

[3] Harvest-period prices are used to value production in the cost and return accounts, rather than marketing-year prices, because the accounts do not include marketing and storage costs that would have been incurred to hold the crop past harvest.

Soybean yields in 2001 were up 2 bushels per acre from 2000, but already low prices in 2000 fell again in 2001, depressing returns to soybean production (appendix table 10). The soybean harvest period price was $4.15 per bushel in 2001, down from $4.45 in 2000. Likewise, the marketing-year average price fell from $4.54 to $4.30, considerably below the loan rate of $5.26, creating strong incentives for soybean producers to utilize the loan program. Average operating costs for soybean production were up by more than $3 per acre. The spike in fertilizer prices had a limited impact on soybean production costs as little nitrogen is used, but higher seed costs from the continued expansion of biotech soybean plantings accounted for much of the higher costs. National breakeven prices for soybeans in 2001 were $1.90 per bushel for operating costs, and $6.14 for total costs. Most soybean producers covered operating costs in 2001, but few covered total costs.

Depressed prices in 2001 kept returns low in all soybean regions, although most producers in all regions were able to cover operating costs. Returns to soybean production improved in 2001 compared with 2000 in the Prairie Gateway, Eastern Uplands, and Mississippi Portal due to higher yields. Average soybean yields rose by 50 percent in the Prairie Gateway as returns above operating costs doubled. In the other regions, soybean returns declined in response to lower prices.

Despite an increase in **wheat** prices during 2001, returns to wheat production were kept down by lower yields and rising input costs, mainly for fertilizer (appendix table 11). The harvest period price of wheat was $2.76 per bushel, while the marketing-year average price was $2.80, considerably below prices received in 1996 and 1997 but above the loan rate of $2.58 per bushel. The sharp rise in nitrogen prices pushed up fertilizer costs for wheat by more than third. National returns above operating costs fell about 10 percent from 2000 to $33 per acre. Most wheat growers were able to cover operating costs as the average breakeven price was $1.82 per bushel, but the average breakeven price needed to cover total costs was $5.14.

Returns to wheat production varied significantly by region, due mainly to differences in wheat yields and the value of wheat straw. Returns above operating costs continued to be the highest in the Northern Crescent because of relatively high yields and a strong market for wheat straw. Returns were lowest in the Southern Seaboard region, where the average yield was off by nearly 9 bushels per acre between 2000 and 2001. Returns above

operating costs were positive in all regions except the Southern Seaboard where wheat growers needed $2.80 per bushel to cover operating costs. Few producers in any region covered the total costs of wheat production. Breakeven prices for total cost varied widely among the regions, ranging from $2.86 per bushel in the Northern Crescent to $6.18 in the Southern Seaboard.

Cotton yields improved in 2001, up about 12 percent from 2000, but returns to cotton production fell sharply as cotton prices fell nearly 40 percent (appendix table 12). The harvest-period and marketing-year average prices (upland cotton) were at 35 cents per pound or lower, significantly below the cotton loan rate of 52 cents. Total operating costs for cotton production were up about 6 percent between 2000 and 2001 due to higher fertilizer and seed costs. Seed costs continued an upward trend as plantings of relatively expensive biotech cotton seed continued to expand. Average returns above operating costs among U.S. cotton producers were negative in 2001, as the breakeven price of 37 cents per pound was below both the harvest-period and marketing-year average prices.

Cotton yields were up in 2001 in most regions, but the sharply lower cotton prices pushed down the returns to cotton production in all regions. In the Heartland, Southern Seaboard, and Mississippi Portal, cotton yields were significantly higher in 2001, such that average returns above operating costs were positive. However, a yield decrease in the Fruitful Rim, and chronically low yields in the Prairie Gateway, meant that the lower cotton prices were insufficient to cover the operating costs of cotton production in these regions.

For the most part, producers of corn, soybeans, wheat and other major field crops were able to cover operating costs, but unable to cover total costs at the prevailing prices in 2001 and in most years. Much of the difference between product prices and total costs can be accounted for by charges made for resources often owned by the farm operator, including unpaid labor and land. Unpaid labor is charged at an estimated off-farm wage earned by farm operators, while land is charged at its rental rate in local areas. These costs may or may not reflect the opportunities that individual producers consider when deciding to produce a crop.

Cost and Return Highlights for Livestock

Average **milk** prices rose more than 20 percent from 2000 to 2001, reaching $17 per cwt in the fall of 2001. Coupled with a modest change in feed grain and forage prices, higher milk prices resulted in significantly higher returns on dairy operations (appendix table 20). Returns above operating costs for milk production were up more than 50 percent between 2000 and 2001, rising from $4.88 to $7.64 per cwt. Average breakeven prices for milk were about $7.72 for operating costs and $16.65 for total costs in 2001. With milk prices in the $13-$17 range throughout 2001, most producers were able to cover operating costs and many also covered total costs.

Returns net of operating costs were also higher in 2001 compared with 2000 in all regions. Average returns above operating costs were similar in all regions, ranging from about $5 to $9 per cwt of milk. However, returns above total costs were much higher in regions with larger dairy operations, including the Prairie Gateway, Southern Seaboard, and Fruitful Rim. Larger dairy operations generally have lower overhead costs because fixed costs for capital and labor are spread over more units of production (see Spotlight Commodity). Average returns above total costs were positive in each of these three regions for 2001. In contrast, average overhead costs were about $12 per cwt in the Heartland, Northern Crescent, and Eastern Uplands, compared with $3-$8 in the other regions, the main result of higher capital and labor charges on the smaller farms in these regions. Higher milk prices in 2001 were not sufficient to cover average total costs in these regions.

Market **hog** (barrow and gilt) prices were around $40 per cwt at the beginning of 2001, but surged above $50 per cwt during the spring and summer before falling below $40 by year's end. The average hog price for 2001 was nearly $45 per cwt, up about $2 from 2000. In contrast, feeder pig prices were somewhat lower in 2001, averaging about $110 per cwt compared with $112 in 2000. However, these prices were much above the $59 and $77 per cwt received for feeder pigs in 1998 and 1999, respectively. Feed costs moved higher in 2001 from 2000 as the average corn price rose about 15 cents per bushel and soybean meal prices were slightly higher (appendix table 21). Despite the higher prices, feed costs for hogs were relatively low in 2001. This set of price and cost conditions resulted in higher average returns among all U.S. hog producers in 2001 compared with 2000, and among producers in most regions.

Higher market hog prices more than offset a rise in feed prices resulting in a small increase in average

returns to **farrow-to-finish** production in 2001 among producers in all regions. Producers needed an average hog price of about $23 per cwt to cover operating costs and $47 to cover total costs. With average hog prices of about $45 per cwt, most producers were able to cover feed and other operating costs in 2001. Also, many farrow-to-finish operations likely covered total costs, particularly larger operations that benefit from economies of size. Since feeder pig prices were solid in 2001 and feed prices stayed low, average returns among **farrow-to-feeder pig** producers remained strong in 2001. Feeder pig prices needed to cover operating costs averaged about $40 per cwt, and to cover total costs were $90 per cwt. among all U.S. producers. With an average feeder pig price of about $110 per cwt in 2001, many producers earned substantial returns to feeder pig production for the second year in a row. In the Southern Seaboard where feeder pig operations are large operations averaging over 20,000 head, returns above total costs were more than $50 per cwt in both years. Higher market hog prices and lower pig prices improved returns among **feeder pig-to-finish** operations in 2001. U.S. hog finishers needed an average price of about $47 per cwt to cover operating costs and $58 to cover total costs. However, since feeder pig cost is the largest component of the hog finishing account, much of this result is determined by the price charged for feeder pigs. Most feeder pig and finished hog production are coordinated by contractors as feeder pigs are removed from one operation and placed on another for finishing. Therefore, the price of feeder pigs is not the relevant cost to contractors, instead the cost of producing the feeder pigs impacts the contractors net returns. If feeder pig production costs are used, the feeder pig cost falls about $7-$8 per cwt, and returns to feeder pig finishing are significantly higher. Substituting feeder pig costs for pig prices has the greatest impact in the Southern Seaboard where over 90 percent of feeder pig and finished hog production was arranged under contract, and where feeder pig production costs were the lowest.

Prospects for 2002

Prospects for higher returns to crop production for 2002 are encouraged by crop prices that have recently moved higher, but the higher prices have resulted from the expectation of lower yields. Average monthly corn prices moved to nearly $2.50 per bushel in August 2002, soybean prices rose to $5.65, and wheat prices climbed over $3.50 per bushel. However, dry conditions in areas of the Heartland, Prairie Gateway, and Northern Great Plains have reduced the forecasted yields of these crops. In addition, higher crop prices will lower counter-cyclical government payments authorized in the 2002 Farm Bill. Unlike the prices of other major field crops, cotton prices have remained low throughout 2002, averaging 32 cents per pound in August.

Lower returns are expected for major livestock commodities as milk, hog, and cattle prices have moved lower in 2002. Milk prices have fallen steadily throughout the year and were down to nearly $11 per cwt in August. Average monthly hog prices have been below $40 per cwt during most of the year. Cattle prices have remained fairly strong in 2002, but have declined in recent months.

On the cost side, prices for fertilizer and fuels have been down significantly in 2002 and could contribute to higher returns for most major field crops. However, higher feed grain prices may adversely affect livestock producers if feed grain and oilseed supplies are down.

Improved Data, Improved Methods

Data used to establish the annual cost and return estimates are collected in producer surveys conducted every 5-8 years for each commodity and updated each year with estimates of annual price, acreage, and production changes. Cost and return estimates for milk, rice, and sugarbeets in 2000 and 2001 are the first estimates based on new data collected in the 2000 Agricultural Resource Management Survey (ARMS). These data replace previous survey data collected in 1993 for milk and 1992 for rice and sugarbeets. Also, the methods used to estimate the costs and returns, and the format of the milk, rice, and sugarbeet accounts have been revised to conform with standards recommended by the American Agricultural Economics Association (AAEA) Task Force on Commodity Costs and Returns. This change means that the accounts for all commodities, except for barely, oats, and tobacco, now conform with the Task Force recommendations.

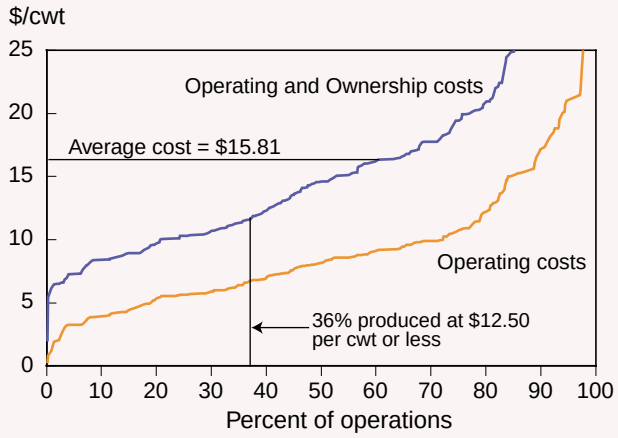
Improvements have also been made to the annual cost and return update procedures for hogs and milk. Rapid structural change has characterized these industries, resulting in fewer and larger operations. Therefore, larger operations make up an increasing proportion of the total number of farms and production of these commodities each year. Large farms tend to have lower costs than smaller farms due to economies of size, meaning that average sector costs are expected to decline over time due to structural change. Starting with the 1998 hog data and the 2000 milk data, the impact of structural change on average costs has been reflected in the annual estimates by re-weighting the data each year by changes in the number of operations in various size groups. This means that as large operations make up an increasing share of total operations, their costs have an increasing impact on the average sector costs. The average size of operation reflected in the hog and milk estimates is presented as part of the supporting information in these accounts.

Spotlight Commodity: Milk

Between 1995 and 2001 the number of small dairy operations (less than 50 cows) declined nearly 40 percent from about 80,000 to less than 50,000. During this time the number of large and industrial-scale operations (200 cows or more) increased by about 15 percent from 7,000 to nearly 8,000. This presentation plots the cumulative distribution of unit production costs by size groups in order to examine the relationship between milk costs-of-production and size of operation. Operating and ownership costs (capital recovery plus taxes and insurance) indicate costs that must be paid to justify investing in milk production facilities and remaining in business over their useful life (10-20 years).

Figure 24

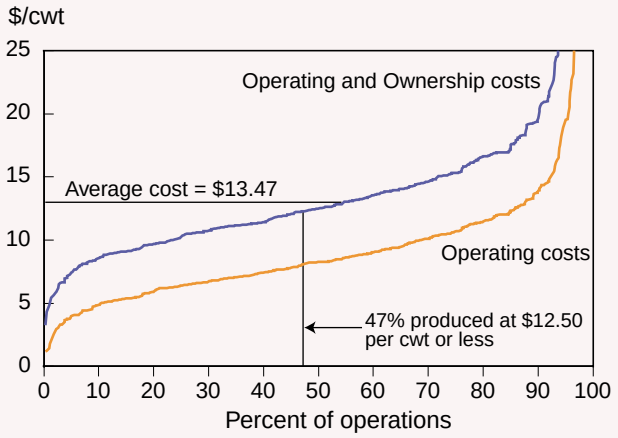
Small dairy operations (less than 50 cows)



Source: 2000 dairy ARMS survey.

Figure 25

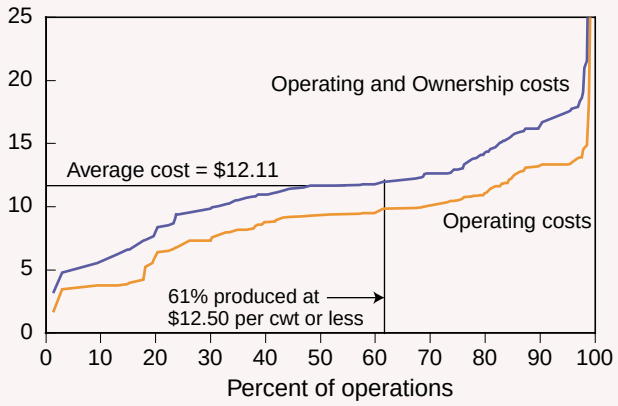
Medium dairy operations (50-199 cows)



Source: 2000 dairy ARMS survey.

Figure 26

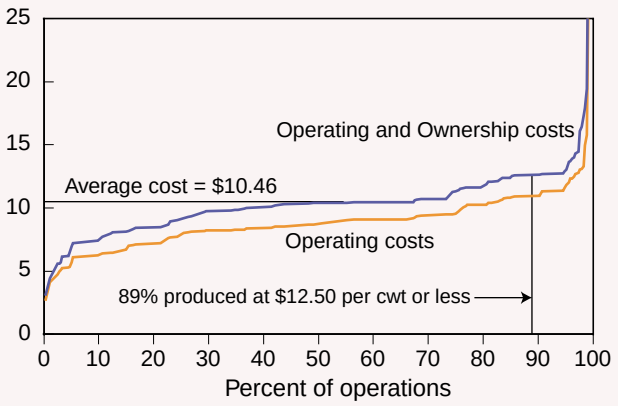
Large dairy operations (200-499 cows)



Source: 2000 dairy ARMS survey.

Figure 27

Industrial-scale dairy operations (500 cows or more)



Source: 2000 dairy ARMS survey.

- Average cost declined across the size groups from $15.81 per hundredweight among small operations to $10.46 per hundredweight among industrial-scale operations.
- Ownership costs comprised a much larger share of total costs on smaller operations than on larger operations because large operations are able to spread fixed costs over more units of production.
- At a milk price of $12.50 per hundredweight, only about a third of small operations are able to cover costs whereas nearly 90 percent of industrial-scale operations cover costs.
- Financial difficulties associated with low milk prices are not confined to small operations, but their sheer numbers and greater variation in costs mean that as a group they are much more severely affected when milk prices fall.

Appendix Tables

Appendix table 1--Deriving farm operator household income estimates from the Agricultural Resource Management Survey (ARMS) that are consistent with Current Population Survey (CPS) methodology, 1997-2002 1/

	1997	1998	1999	2000 2/	2001P	2002F
			Dollars per farm			
Net cash farm business income 3/	12,676	14,357	13,194	11,175	14,311	11,858
Less depreciation 4/	6,578	7,409	7,027	7,357	7,609	n.a.
Less wages paid to operator 5/	513	637	499	608	932	n.a.
Less farmland rental income 6/	568	543	802	757	477	n.a.
Less adjusted farm business income due to other household(s) 7/	*1,505	1,332	1,262	801	1,083	n.a.
			Dollars per farm operator household			
Equals adjusted farm business income	3,513	4,436	3,603	*1652	4,211	n.a.
Plus wages paid to operator	513	637	499	608	932	n.a.
Plus net income from farmland rental 8/	945	868	1,312	n.a.	n.a.	n.a.
Equals farm self-employment income	4,971	5,941	5,415	*2260	5,143	n.a.
Plus other farm-related earnings 9/	1,234	1,165	944	339	396	n.a.
Equals earnings of the operator household from farming activities	6,205	7,106	6,359	2,598	5,539	3,274
Plus earnings of the operator household from off-farm sources 10/	46,358	52,628	57,988	59,349	58,578	59,963
Equals average farm operator household income comparable to U.S. average household income, as measured by the CPS	52,562	59,734	64,347	61,947	64,117	63,237
			Dollars per U.S. household			
U.S. average household income 11/	49,692	51,855	54,842	57,045	58,208	n.a.
			Percent			
Average farm operator household income as percent of U.S. average household income	105.8	115.2	117.3	108.6	110.2	n.a.
Average operator household earnings from farming activities as percent of average operator household income	11.8	11.9	9.9	4.2	8.6	5.2

P = Preliminary. F = forecast. n.a. = not available. * = The relative standard error exceeds 25 percent, but is no more than 50 percent.
1/ This table derives farm operator household income estimates from the Agricultural Resource Management Survey (ARMS) that are consistent with Current Population Survey (CPS) methodology. The CPS, conducted by the Census Bureau, is the source of official U.S. household income statistics. The CPS defines income to include any income received as cash. The CPS definition departs from a strictly cash concept by including depreciation as an expense that farm operators and other self-employed people subtract from gross receipts when reporting net cash income. 2/ Prior to 2000, net cash income from operating another farm and net cash income from farmland rental were included in earnings from farming activities. However, because of a change in the ARMS survey design, net cash income from another farm and net cash income from farmland rental are not separable from total off-farm income. Although there is no effect on estimates of farm operator household income in 2000 and beyond, estimates of farm self employment income, other farm related earnings, earnings of the farm from farming activities, and earnings of the farm from off-farm sources are not strictly comparable to those from previous years.
3/ A component of farm sector income. Excludes income of contractors and landlords as well as the income of farms organized as nonfamily corporations or cooperatives and farms run by a hired manager. Includes the income of farms organized as proprietorships, partnerships, and family corporations. 4/ Consistent with the CPS definition of self-employment income, reported depreciation expenses are subtracted from net cash income. The ARMS collects farm business depreciation used for tax purposes. 5/ Wages paid to the operator are subtracted here because they are not shared among other households that have claims on farm business income. These wages are added to the operator household's adjusted farm business income to obtain farm self-employment income. 6/ Gross rental income is subtracted here because net rental income from the farm operation is added below to income received by the household. 7/ More than one household may have a claim on the income of a farm business. On average, 1.1 households share the income of a farm business. 8/ Includes net rental income from the farm business. Also includes net rental income from farmland held by household members that is not part of the farm business. Beginning in 2000, net income from farmland rental is considered as part of off-farm income (see footnote 2).
9/ Wages paid to other operator household members by the farm business and net income from a farm business other than the one being surveyed. This also includes the value of commodities provided to household members for farm work. Beginning in 2000, net cash income from another farm is included in off-farm income (see footnote 2). 10/ Wages, salaries, net income from nonfarm businesses, interest, dividends, transfer payments, etc. Beginning in 2000, also includes net cash income from another farm and net cash income from farmland rental (see footnote 2). 11/ From the CPS.

Sources: U.S. Dept. of Agriculture, Economic Research Service, 1997, 1998, 1999, 2000, and 2001 Agricultural Resource Management Survey (ARMS) for farm operator household data. U.S. Dept. of Commerce, Bureau of the Census, Current Population Survey (CPS), for U.S. average household income.

Appendix table 2--Value added to the U.S. economy by the agricultural sector via the production of goods and services, 1997-2002F

	Item 1/	1997	1998	1999	2000	2001	2002F	1992-2001 average
					------- $ billion --------			
	Value of crop production	112.4	101.7	92.4	95.0	93.9	96.6	97.8
	Food grains	10.4	8.8	7.0	6.8	6.6	6.6	8.7
	Feed crops	27.1	22.6	19.6	20.8	23.2	25.0	22.6
	Cotton	6.3	6.1	4.6	3.8	5.0	3.9	5.7
	Oil crops	19.8	17.4	13.4	13.8	14.3	15.2	15.2
	Tobacco	2.9	2.8	2.3	2.3	1.9	1.8	2.6
	Fruits and tree nuts	13.1	11.8	12.0	12.6	11.7	12.0	11.5
	Vegetables	14.7	15.2	15.1	15.6	15.5	16.3	14.5
	All other crops	16.9	17.2	18.0	18.4	18.2	18.4	16.2
	Home consumption	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Value of inventory adjustment 2/	1.0	(0.3)	0.4	0.8	(2.7)	(2.6)	0.8
	Value of livestock production	96.5	94.2	95.3	99.3	106.3	96.8	94.1
	Meat animals	49.7	43.3	45.6	53.0	53.3	50.2	47.9
	Dairy products	20.9	24.1	23.2	20.6	24.7	20.8	21.5
	Poultry and eggs	22.3	22.9	22.9	21.8	24.6	22.6	20.7
	Miscellaneous livestock	3.6	3.7	3.9	4.2	3.9	3.9	3.5
	Home consumption	0.4	0.3	0.4	0.4	0.4	0.4	0.4
	Value of inventory adjustment 2/	(0.4)	(0.3)	(0.6)	(0.6)	(0.5)	(1.0)	(0.0)
	Revenues from services and forestry	21.8	23.8	25.2	24.4	25.5	26.5	21.2
	Machine hire and customwork	2.4	2.2	2.0	2.2	2.0	1.9	2.1
	Forest products sold	2.9	3.1	2.8	2.9	2.8	2.6	2.7
	Other farm income	6.9	8.7	10.2	8.7	10.1	11.2	7.0
	Gross imputed rental value of farm dwellings	9.7	9.9	10.2	10.7	10.6	10.8	9.4
	Value of agricultural sector production	230.6	219.7	212.9	218.8	225.8	219.9	213.1
less:	Purchased inputs	119.8	117.6	118.6	121.9	127.5	126.0	112.7
	Farm origin	46.9	44.8	45.6	48.1	49.2	49.4	44.0
	Feed purchased	26.3	25.0	24.5	24.5	25.2	26.5	23.9
	Livestock and poultry purchased	13.8	12.6	13.8	16.1	15.7	13.9	13.7
	Seed purchased	6.7	7.2	7.2	7.5	8.3	9.0	6.4
	Manufactured inputs	29.2	28.1	27.1	28.7	29.7	28.2	26.8
	Fertilizers and lime	10.9	10.6	9.9	10.0	10.3	9.2	9.9
	Pesticides	9.0	9.0	8.6	8.5	8.6	8.7	8.0
	Petroleum fuel and oils	6.2	5.6	5.6	7.2	7.2	6.9	5.9
	Electricity	3.0	2.9	3.0	3.0	3.5	3.5	3.0
	Other intermediate expenses	43.7	44.6	45.9	45.1	48.6	48.3	41.9
	Repair and maintenance of capital items	10.4	10.4	10.5	10.8	11.2	11.4	10.0
	Machine hire and customwork	4.2	4.9	4.8	4.5	4.3	4.3	4.5
	Marketing, storage, and transportation expenses	7.1	6.9	7.3	7.5	7.8	7.3	6.8
	Contract labor	2.5	2.4	2.5	2.7	3.2	3.4	2.3
	Miscellaneous expenses	19.4	20.2	20.9	19.6	22.2	21.9	18.4
plus:	Net government transactions	0.1	4.9	14.3	15.5	13.2	9.3	5.9
+	Direct Government payments	7.5	12.4	21.5	22.9	20.7	17.0	13.0
-	Motor vehicle registration and licensing fees	0.5	0.5	0.4	0.5	0.5	0.5	0.4
-	Property taxes	6.9	7.0	6.8	6.9	7.0	7.1	6.7
	Gross value added	110.9	107.0	108.6	112.4	111.4	103.3	106.2
less:	Capital consumption	19.5	19.9	20.1	20.3	20.6	20.9	19.4
	Net value added	91.4	87.2	88.4	92.1	90.9	82.4	86.8
less:	Payments to stakeholders	40.9	41.6	42.2	44.0	45.2	46.3	39.9
	Employee compensation (total hired labor)	15.9	16.8	17.4	17.9	19.0	19.7	15.6
	Net rent received by nonoperator landlords	11.9	11.4	11.3	11.8	12.0	12.8	11.6
	Real estate and nonreal estate interest	13.1	13.4	13.6	14.3	14.1	13.7	12.7
	Net farm income	50.5	45.6	46.2	48.0	45.7	36.2	46.9

F = forecast. P = preliminary. na = not applicable. ( ) = negative number. Numbers may not add due to rounding.

1/ Final sector output is the gross value of the commodities and services produced within a year. Net value-added is the sector's contribution to the National economy and is the sum of the income from production earned by all factors of production. Net farm income is the farm income is the operators' share of income from the sector's production activities. The concepts presented are consistent with those employed by the Organization for Economic Cooperation and Development (OECD). 2/ A positive value of inventory change represents current-year production not sold by December 1. A negative value is an offset to production from prior years included in current-year sales.

3/ Direct government payments include only payments made directly to farmers, including realized marketing loan gains.

In publications prior to May of 2001, marketing loan gains were included in cash receipts rather than in government payments.

The current forecast and historic information can always be found at http://www.ers.usda.gov/data/farmincome/finfidmu.htm

Appendix table 3--Income statement for U.S. farm sector, 1994-2002F

	1994	1995	1996	1997	1998	1999	2000	2001	2002F	1992-2001 average
					$ billion					
Cash income statement:										
1. Cash receipts	181.3	188.0	199.3	207.7	196.0	187.5	193.7	202.8	196.5	190.6
Crops 1/	93.0	100.8	106.3	111.2	101.9	91.9	94.1	96.4	99.1	96.9
Livestock	88.3	87.2	92.9	96.5	94.1	95.6	99.6	106.4	97.4	93.7
2. Direct government payments 2/	7.9	7.3	7.3	7.5	12.4	21.5	22.9	20.7	17.0	13.0
3. Farm-related income 3/	9.0	10.5	11.0	12.1	13.9	15.0	13.8	14.9	15.7	11.7
4. Gross cash income (1+2+3)	198.2	205.9	217.7	227.3	222.3	224.0	230.4	238.5	229.2	215.3
5. Cash expenses 4/	147.5	153.3	159.9	166.9	165.5	166.9	172.0	178.8	178.4	158.6
6. NET CASH INCOME 5/ (4-5)	50.7	52.5	57.7	60.4	56.8	57.1	58.4	59.7	50.8	56.8
Farm income statement:										
7. Gross cash income (1+2+3)	198.2	205.9	217.7	227.3	222.3	224.0	230.4	238.5	229.2	215.3
8. Nonmoney income 6/	9.6	9.9	10.2	10.2	10.3	10.7	11.2	11.2	11.3	10.0
9. Inventory adjustment	8.3	(5.0)	7.9	0.6	(0.6)	(0.3)	0.1	(3.2)	(3.6)	na
10. Total gross income (7+8+9)	216.0	210.8	235.8	238.1	232.1	234.5	241.7	246.5	236.9	226.1
11. Total expenses	167.2	173.8	181.0	187.6	186.5	188.3	193.7	200.8	200.7	179.2
12. NET FARM INCOME (10-11)	48.9	36.9	54.8	50.5	45.6	46.2	48.0	45.7	36.2	46.9

F = forecast. P = preliminary. ( ) = negative number. Numbers may not add due to rounding.

1/ Includes CCC loans. 2/ Direct government payments include only payments made directly to farmers, including realized marketing loan gains. In publications prior to May of 2001, marketing loan gains were included in cash receipts rather than in government payments. 3/ Income from custom work, machine hire, recreational activities, forest product sales, and other farm sources. 4/ Excludes depreciation and perquisites to hired labor. 5/ Excludes farm households. 6/ Value of home consumption of farm products plus the imputed rental value of operator dwellings.

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The current forecast and historic information can always be found at http://www.ers.usda.gov/data/farmincome/finfidmu.htm

Appendix table 4--U.S. farm sector cash receipts from sales of agricultural commodities, 1998-2002F

	1998	1999	2000	2001	09/17/02 2002F	Change 2000 to 2001	Change 2001 to 2002
				$ billion			
Crop receipts:							
Food grains	8.8	7.0	6.8	6.6	6.6	(0.2)	0.0
Wheat	7.1	5.4	5.7	5.7	5.7	0.0	(0.1)
Rice	1.7	1.5	1.0	0.8	0.9	(0.2)	0.1
Feed crops	22.6	19.6	20.8	23.2	25.0	2.5	1.7
Corn	17.2	14.7	15.4	17.1	18.9	1.7	1.8
Barley, oats, and sorghum	1.6	1.5	1.5	1.5	1.5	0.0	0.0
Hay	3.8	3.4	3.8	4.6	4.6	0.7	0.0
Oil crops	17.4	13.4	13.8	14.3	15.2	0.5	0.8
Soybeans	15.6	11.8	12.4	12.8	13.6	0.4	0.8
Peanuts	1.1	1.0	0.9	1.0	0.9	0.1	(0.1)
Cotton (lint and seed)	6.1	4.6	3.8	5.0	3.9	1.1	(1.1)
Tobacco	2.8	2.3	2.3	1.9	1.8	(0.4)	(0.1)
Fruits and nuts	11.8	12.0	12.6	11.7	12.0	(0.9)	0.3
Vegetables	15.2	15.1	15.6	15.5	16.3	(0.1)	0.8
All other crops	17.2	18.0	18.4	18.2	18.4	(0.2)	0.2
Greenhouse and nursery	12.5	13.0	13.7	13.8	13.8	0.1	0.0
TOTAL CROPS	101.9	91.9	94.1	96.4	99.1	2.3	2.7
Livestock receipts:							
Red meats	43.3	45.6	53.0	53.3	50.2	0.3	(3.1)
Cattle and calves	33.4	36.5	40.7	40.4	40.2	(0.3)	(0.2)
Hogs	9.4	8.6	11.8	12.5	9.6	0.7	(2.9)
Sheep and lambs	0.5	0.5	0.5	0.4	0.4	(0.1)	(0.0)
Poultry and eggs	22.9	22.9	21.8	24.6	22.6	2.8	(2.0)
Broilers	15.1	15.1	14.0	16.7	14.6	2.7	(2.1)
Turkeys	2.6	2.8	2.8	2.7	2.7	(0.0)	(0.1)
Eggs	4.4	4.3	4.3	4.4	4.5	0.1	0.1
All dairy	24.1	23.2	20.6	24.7	20.8	4.1	(3.9)
Miscellaneous livestock	3.7	3.9	4.2	3.9	3.9	(0.3)	0.0
TOTAL LIVESTOCK	94.1	95.6	99.6	106.4	97.4	6.9	(9.0)
TOTAL RECEIPTS	196.0	187.5	193.7	202.8	196.5	9.2	(6.3)

F = forecast. P = preliminary. ( ) = negative number. Numbers may not add due to rounding.

The current forecast and historic information can always be found at http://www.ers.usda.gov/data/farmincome/finfidmu.htm

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Appendix table 5--Ranking of States for value of production per acre and net farm income per acre and per operation for 2001

Rank	Value of production 1/		Net farm income per acre		Net farm income per operation	
	State	Dollars per acre	State	Dollars per acre	State	Dollars per operation
1	Delaware	1,646	Connecticut	400	Arizona	137,493
2	Connecticut	1,549	Delaware	382	Delaware	87,143
3	New Jersey	1,110	North Carolina	352	North Carolina	57,163
4	North Carolina	1,061	Maryland	249	New Mexico	54,643
5	California	995	New Jersey	228	Florida	49,230
6	Rhode Island	905	Florida	212	Idaho	47,795
7	Maryland	873	Georgia	209	Georgia	45,971
8	Massachusetts	790	Alabama	178	California	42,827
9	Florida	661	South Carolina	143	Maryland	42,089
10	Pennsylvania	634	California	136	Nevada	39,744
11	Georgia	565	Pennsylvania	126	South Dakota	37,468
12	New York	493	New York	106	Connecticut	36,928
13	Alabama	479	Vermont	102	Alabama	33,648
14	Vermont	455	Mississippi	101	Colorado	32,989
15	Maine	427	Idaho	96	Nebraska	30,383
16	New Hampshire	422	Arkansas	96	Arkansas	29,163
17	Wisconsin	414	Rhode Island	92	South Carolina	28,501
18	South Carolina	412	Kentucky	90	Mississippi	26,470
19	Arkansas	380	Ohio	71	Utah	26,309
20	Hawaii	379	Virginia	69	Wyoming	21,713
21	Michigan	377	Maine	65	New York	21,409
22	Indiana	371	Hawaii	65	Iowa	20,818
23	Ohio	370	Indiana	63	Vermont	20,613
24	Washington	369	Iowa	60	New Jersey	19,670
25	Iowa	364	Wisconsin	55	North Dakota	19,366
26	Mississippi	354	Louisiana	52	Texas	18,890
27	Idaho	346	Illinois	51	Illinois	18,668
28	Virginia	322	Massachusetts	49	Hawaii	17,716
29	Kentucky	309	Tennessee	43	Alaska	17,490
30	Minnesota	298	Washington	40	Pennsylvania	16,416
31	Illinois	294	Arizona	38	Washington	15,917
32	Louisiana	253	Nebraska	35	Indiana	15,305
33	Tennessee	234	Utah	34	Kansas	15,209
34	Nebraska	222	Texas	33	Louisiana	14,417
35	Oregon	218	Colorado	32	Kentucky	13,974
36	Kansas	192	Missouri	30	Ohio	13,452
37	Missouri	187	New Hampshire	30	Maine	12,298
38	Colorado	167	South Dakota	28	Virginia	12,248
39	West Virginia	144	Oklahoma	27	Wisconsin	11,537
40	Oklahoma	136	Minnesota	24	Montana	11,426
41	Texas	121	Kansas	20	Oklahoma	10,727
42	Utah	114	New Mexico	19	Minnesota	8,804
43	Arizona	106	Michigan	18	Missouri	8,426
44	South Dakota	98	Nevada	18	Rhode Island	7,916
45	North Dakota	84	Oregon	15	Oregon	6,646
46	Nevada	68	North Dakota	15	Tennessee	5,613
47	Alaska	62	West Virginia	13	Massachusetts	4,554
48	New Mexico	53	Alaska	11	New Hampshire	4,062
49	Montana	35	Wyoming	6	Michigan	3,666
50	Wyoming	31	Montana	5	West Virginia	2,327
	United States	240	United States	49	United States	21,198

1/ Value of agricultural sector production in the value-added accounting model (table).

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Appendix table 6--All commodities: States' ranking for cash receipts, 2001

Rank	State	Value of receipts	Percent of total U.S. receipts	Cumulative percent 1/
		1,000 dollars	Percent	
1	California	25,892,319	12.8	12.8
2	Texas	13,795,618	6.8	19.6
3	Iowa	11,550,109	5.7	25.3
4	Nebraska	9,488,580	4.7	29.9
5	Kansas	8,121,044	4.0	33.9
6	Minnesota	8,101,875	4.0	37.9
7	North Carolina	7,730,633	3.8	41.7
8	Illinois	7,547,087	3.7	45.5
9	Florida	6,415,882	3.2	48.6
10	Wisconsin	5,896,293	2.9	51.5
11	Georgia	5,514,952	2.7	54.3
12	Washington	5,191,920	2.6	56.8
13	Arkansas	5,131,964	2.5	59.3
14	Indiana	5,105,437	2.5	61.9
15	Missouri	4,824,141	2.4	64.2
16	Colorado	4,728,954	2.3	66.6
17	Ohio	4,682,011	2.3	68.9
18	Pennsylvania	4,454,979	2.2	71.1
19	South Dakota	4,107,879	2.0	73.1
20	Oklahoma	4,026,680	2.0	75.1
21	Idaho	3,847,926	1.9	77.0
22	Kentucky	3,548,328	1.7	78.7
23	Alabama	3,519,731	1.7	80.5
24	Michigan	3,469,122	1.7	82.2
25	New York	3,419,790	1.7	83.9
26	Mississippi	3,146,582	1.6	85.4
27	Oregon	3,122,641	1.5	87.0
28	North Dakota	2,978,548	1.5	88.4
29	Arizona	2,574,698	1.3	89.7
30	Virginia	2,443,987	1.2	90.9
31	New Mexico	2,215,122	1.1	92.0
32	Tennessee	2,160,707	1.1	93.1
33	Louisiana	1,817,088	0.9	93.9
34	Montana	1,785,002	0.9	94.8
35	South Carolina	1,646,020	0.8	95.6
36	Maryland	1,596,085	0.8	96.4
37	Utah	1,116,343	0.6	97.0
38	Wyoming	982,545	0.5	97.5
39	Delaware	847,718	0.4	97.9
40	New Jersey	821,070	0.4	98.3
41	Vermont	556,779	0.3	98.6
42	Hawaii	510,507	0.3	98.8
43	Maine	485,064	0.2	99.0
44	Connecticut	476,150	0.2	99.3
45	Nevada	424,596	0.2	99.5
46	West Virginia	407,570	0.2	99.7
47	Massachusetts	366,611	0.2	99.9
48	New Hampshire	155,478	0.1	100.0
49	Alaska	51,865	0.0	100.0
50	Rhode Island	47,438	0.0	100.0
	United States	202,849,408	100	--

-- = Not applicable.

Numbers may not add due to rounding.

1/ The cumulative percentage is the sum of the percent of commodity total for each State and all preceding States.

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Appendix table 7--Leading commodities for cash receipts, 2001

Rank	Items	Value of receipts	Percent of total receipts	Cumulative percent 1/
		1,000 dollars	Percent	
	All commodities	202,849,408	100.0	--
	Livestock and products	106,431,172	52.5	--
	Crops	96,418,236	47.5	--
1	Cattle and calves	40,439,877	19.9	19.9
2	Dairy products	24,694,531	12.2	32.1
3	Corn	17,108,878	8.4	40.5
4	Broilers	16,688,339	8.2	48.8
5	Greenhouse/nursery	13,794,634	6.8	55.6
6	Soybeans	12,777,099	6.3	61.9
7	Hogs	12,455,792	6.1	68.0
8	Wheat	5,719,222	2.8	70.8
9	Cotton	4,954,043	2.4	73.3
10	Hay	4,556,955	2.2	75.5
11	Chicken eggs	4,444,864	2.2	77.7
12	Grapes	2,924,049	1.4	79.2
13	Turkeys	2,729,457	1.3	80.5
14	Potatoes	2,464,275	1.2	81.7
15	Lettuce	1,907,083	0.9	82.7
16	Tobacco	1,880,300	0.9	83.6
17	Tomatoes	1,664,890	0.8	84.4
18	Apples	1,369,980	0.7	85.1
19	Oranges	1,369,014	0.7	85.7
20	Strawberries	1,086,082	0.5	86.3
21	Peanuts	1,001,845	0.5	86.8
22	Horses/mules	984,700	0.5	87.3
23	Cane for sugar	917,991	0.5	87.7
24	Sorghum grain	905,052	0.4	88.2
25	Sugar beets	885,172	0.4	88.6
	Government payments 2/	20,727,496	--	--
	Net farm income 3/	45,740,874	--	--

-- = Not applicable

1/ The cumulative percentage is the sum of the percent of total receipts for each commodity and all preceding commodities.

2/ Government payments made directly to farmers in cash or Payment-in-Kind.

3/ Net farm income, a value of production measure, is the farm operator's share of the sector's net value added to the National economy from production activities within a calendar year.

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Appendix table 8--Farm marketings, 2000 and 2001, and government payments, 2001, by State

State	Cash receipts, 2000			Cash receipts, 2001			2001 Government payments
	Total	Crops	Livestock and products	Total	Crops	Livestock and products	
				1,000 dollar			
Alabama	3,205,251	559,622	2,645,629	3,519,731	705,216	2,814,515	230,734
Alaska	51,885	20,327	31,558	51,865	23,853	28,012	2,173
Arizona	2,287,294	1,216,878	1,070,416	2,574,698	1,409,090	1,165,608	99,254
Arkansas	4,737,768	1,482,678	3,255,090	5,131,964	1,624,569	3,507,395	832,545
California	25,683,196	19,431,128	6,252,068	25,892,319	18,545,880	7,346,439	586,761
Colorado	4,611,563	1,281,138	3,330,425	4,728,954	1,354,465	3,374,489	319,599
Connecticut	495,632	327,518	168,114	476,150	298,829	177,321	7,540
Delaware	736,360	178,753	557,607	847,718	185,719	661,999	25,004
Florida	6,777,113	5,401,907	1,375,206	6,415,882	4,957,896	1,457,986	108,011
Georgia	5,098,526	1,991,455	3,107,071	5,514,952	1,975,220	3,539,732	427,261
Hawaii	521,771	429,517	92,254	510,507	419,298	91,209	3,860
Idaho	3,371,855	1,743,566	1,628,289	3,847,926	1,787,513	2,060,413	207,664
Illinois	7,126,795	5,416,123	1,710,672	7,547,087	5,704,242	1,842,845	1,849,769
Indiana	4,584,456	2,882,969	1,701,487	5,105,437	3,235,048	1,870,389	925,278
Iowa	10,803,640	5,047,008	5,756,632	11,550,109	5,614,520	5,935,589	1,971,677
Kansas	8,018,974	2,519,386	5,499,588	8,121,044	2,585,380	5,535,664	1,068,706
Kentucky	3,649,098	1,276,927	2,372,171	3,548,328	1,280,795	2,267,533	293,379
Louisiana	1,787,089	1,134,649	652,440	1,817,088	1,115,957	701,131	434,612
Maine	501,573	241,662	259,911	485,064	210,774	274,290	7,819
Maryland	1,450,729	614,909	835,820	1,596,085	646,712	949,373	86,626
Massachusetts	388,008	294,779	93,229	366,611	272,925	93,686	10,138
Michigan	3,321,666	1,987,798	1,333,868	3,469,122	1,979,799	1,489,323	352,766
Minnesota	7,463,087	3,579,972	3,883,115	8,101,875	3,813,440	4,288,435	1,242,141
Mississippi	2,727,435	690,989	2,036,446	3,146,582	871,056	2,275,526	517,007
Missouri	4,613,903	1,933,479	2,680,424	4,824,141	2,144,809	2,679,332	817,044
Montana	1,843,581	737,098	1,106,483	1,785,002	657,248	1,127,754	476,158
Nebraska	8,992,509	3,075,546	5,916,963	9,488,580	3,402,349	6,086,231	1,297,623
Nevada	387,286	150,075	237,211	424,596	153,300	271,296	5,864
New Hampshire	150,986	90,871	60,115	155,478	89,644	65,834	2,815
New Jersey	826,042	634,530	191,512	821,070	617,316	203,754	16,403
New Mexico	2,113,502	500,395	1,613,107	2,215,122	545,019	1,670,103	93,729
New York	3,121,511	1,190,784	1,930,727	3,419,790	1,199,163	2,220,627	114,039
North Carolina	7,340,127	3,040,248	4,299,879	7,730,633	3,086,554	4,644,079	330,730
North Dakota	2,706,065	2,076,681	629,384	2,978,548	2,258,615	719,933	944,591
Ohio	4,369,995	2,615,784	1,754,211	4,682,011	2,818,473	1,863,538	681,651
Oklahoma	4,293,314	852,649	3,440,665	4,026,680	873,802	3,152,878	392,822
Oregon	3,093,158	2,263,794	829,364	3,122,641	2,297,688	824,953	104,946
Pennsylvania	4,062,998	1,297,151	2,765,847	4,454,979	1,308,750	3,146,229	103,462
Rhode Island	46,039	38,418	7,621	47,438	39,735	7,703	292
South Carolina	1,520,669	727,767	792,902	1,646,020	763,677	882,343	130,287
South Dakota	3,805,544	1,768,888	2,036,656	4,107,879	1,852,454	2,255,425	715,264
Tennessee	1,996,706	1,006,907	989,799	2,160,707	1,033,948	1,126,759	247,485
Texas	13,370,108	4,210,776	9,159,332	13,795,618	4,456,153	9,339,465	1,703,168
Utah	1,019,621	247,586	772,035	1,116,343	263,082	853,261	39,754
Vermont	500,459	68,924	431,535	556,779	66,719	490,060	7,877
Virginia	2,284,562	735,482	1,549,080	2,443,987	770,785	1,673,202	117,158
Washington	5,117,215	3,407,899	1,709,316	5,191,920	3,464,259	1,727,661	298,784
West Virginia	396,990	57,505	339,485	407,570	59,315	348,255	9,842
Wisconsin	5,364,473	1,498,143	3,866,330	5,896,293	1,432,106	4,464,187	415,110
Wyoming	957,169	156,811	800,358	982,545	145,086	837,459	50,272
United States	193,695,232	94,135,840	99,559,392	202,849,408	96,418,236	106,431,172	20,727,496

Appendix table 9--Corn production costs and returns, excluding direct Government payments, 2000-2001

Item	United States		Heartland		Northern Crescent		Northern Great Plains	
	2000	2001	2000	2001	2000	2001	2000	2001
	Dollars per planted acre							
Gross value of production (excluding direct Government payments):								
Primary product: Corn grain	244.26	255.76	258.13	267.88	230.21	209.76	161.02	182.70
Secondary product: Corn silage	2.41	2.49	1.23	1.37	10.80	10.16	2.47	2.60
Total, gross value of production	246.67	258.25	259.36	269.25	241.01	219.92	163.49	185.30
Operating costs:								
Seed	30.02	31.77	30.64	32.45	28.96	30.21	26.64	29.77
Fertilizer 1/	39.04	46.79	41.60	49.33	34.49	41.92	20.95	31.61
Soil conditioners 2/	0.16	0.17	0.10	0.11	0.46	0.47	0.00	0.00
Manure	0.48	0.60	0.36	0.45	1.77	2.16	0.00	0.00
Chemicals	28.82	28.60	30.51	29.79	27.64	27.22	19.57	19.71
Custom operations 3/	11.48	11.44	10.96	10.96	9.84	9.48	20.64	21.16
Fuel, lube, and electricity	29.12	29.81	26.41	26.13	26.72	24.56	23.66	24.44
Repairs	17.55	18.38	15.98	16.74	17.42	17.76	17.95	19.38
Other variable cash expenses 4/	0.31	0.32	0.00	0.00	0.00	0.00	0.23	0.25
Interest on operating capital	4.53	2.95	4.51	2.92	4.25	2.63	3.74	2.48
Total, operating costs	161.51	170.83	161.07	168.88	151.55	156.41	133.38	148.80
Allocated overhead:								
Hired labor	3.36	3.45	2.35	2.47	4.92	4.86	1.93	2.09
Opportunity cost of unpaid labor	32.21	33.24	31.80	32.46	39.27	41.97	23.87	25.28
Capital recovery of machinery and equipment	70.16	73.43	67.32	70.55	72.87	74.32	59.38	63.24
Opportunity cost of land (rental rate)	89.36	90.89	100.73	102.21	66.80	68.00	56.88	57.05
Taxes and insurance	7.13	7.26	6.47	6.59	6.62	6.75	9.50	9.92
General farm overhead	11.11	11.49	11.11	11.44	13.96	14.39	6.54	6.76
Total, allocated overhead	213.33	219.76	219.78	225.72	204.44	210.29	158.10	164.34
Total, costs listed	374.84	390.59	380.85	394.60	355.99	366.70	291.48	313.14
Value of production less total costs listed	-128.17	-132.34	-121.50	-125.35	-114.98	-146.78	-127.99	-127.84
Value of production less operating costs	85.16	87.42	98.29	100.37	89.46	63.51	30.11	36.50
Supporting information:								
Yield (bushels per planted acre)	138	139	148	148	127	114	97	105
Price (dollars per bushel at harvest)	1.77	1.84	1.75	1.81	1.81	1.84	1.66	1.74
Enterprise size (planted acres) 5/	189	189	223	223	113	113	301	301
Production practices: 5/								
Irrigated (percent)	15	15	6	9	2	2	39	39
Dryland (percent)	85	85	94	94	98	98	61	61

Continued--

Appendix table 9--Corn production costs and returns, excluding direct Government payments, 2000-2001--Continued

Item	Prairie Gateway		Eastern Uplands		Southern Seaboard	
	2000	2001	2000	2001	2000	2001
	Dollars per planted acre					
Gross value of production (excluding direct Government payments):						
Primary product: Corn grain	239.15	267.15	239.51	254.13	206.70	269.37
Secondary product: Corn silage	0.16	0.18	0.00	0.00	2.35	5.44
Total, gross value of production	239.31	267.33	239.51	254.13	209.05	274.81
Operating costs:						
Seed	31.09	32.82	20.66	22.93	24.48	23.28
Fertilizer 1/	34.64	44.88	50.31	51.73	51.29	54.79
Soil conditioners 2/	0.01	0.02	1.72	1.77	0.68	0.70
Manure	0.01	0.01	0.45	0.56	0.04	0.05
Chemicals	25.99	27.64	32.33	32.94	19.84	21.07
Custom operations 3/	13.85	13.80	6.51	6.44	12.01	12.64
Fuel, lube, and electricity	48.73	57.05	23.60	23.44	24.15	26.26
Repairs	25.58	27.07	16.68	17.50	19.07	20.79
Other variable cash expenses 4/	2.26	2.36	0.00	0.00	0.00	0.00
Interest on operating capital	5.25	3.65	4.39	2.81	4.37	2.86
Total, operating costs	187.41	209.30	156.65	160.12	155.93	162.44
Allocated overhead:						
Hired labor	6.21	6.40	3.00	3.13	11.78	11.89
Opportunity cost of unpaid labor	25.05	25.69	61.51	63.17	55.45	57.73
Capital recovery of machinery and equipment	83.93	88.61	76.08	79.81	83.65	91.07
Opportunity cost of land (rental rate)	79.65	80.17	48.39	47.60	34.73	37.65
Taxes and insurance	10.05	10.27	6.93	7.08	9.39	9.43
General farm overhead	10.11	10.54	10.96	11.31	9.44	9.76
Total, allocated overhead	215.00	221.68	206.87	212.10	204.44	217.53
Total, costs listed	402.41	430.98	363.52	372.22	360.37	379.97
Value of production less total costs listed	-163.10	-163.65	-124.01	-118.09	-151.32	-105.16
Value of production less operating costs	51.90	58.03	82.86	94.01	53.12	112.37
Supporting information:						
Yield (bushels per planted acre)	127	137	128	129	106	123
Price (dollars per bushel at harvest)	1.88	1.95	1.87	1.97	1.95	2.19
Enterprise size (planted acres) 5/	344	344	42	42	96	96
Production practices: 5/						
Irrigated (percent)	77	77	0	0	0	0
Dryland (percent)	23	23	100	100	100	100

1/ Fertilizer cost for 2001 is based on preliminary estimates from the 2001 Agricultural Resource Management Survey for corn.

2/ Cost of lime.

3/ Cost of custom operation, technical services, and commercial drying.

4/ Cost of purchased irrigation water.

5/ For 1996 survey base year only.

Appendix table 10--Soybean production costs and returns, 2000-2001

Item	United States		Heartland		Northern Crescent		Northern Great Plains	
	2000	2001	2000	2001	2000	2001	2000	2001
	Dollars per planted acre							
Gross value of production								
Primary product: Soybeans	182.45	178.45	199.80	191.36	182.04	150.59	161.50	141.84
Total, gross value of production	182.45	178.45	199.80	191.36	182.04	150.59	161.50	141.84
Operating costs:								
Seed	19.18	22.59	18.30	21.72	19.37	25.34	15.33	19.59
Fertilizer	7.87	8.32	7.23	7.42	13.12	14.30	4.90	6.11
Soil conditioners	0.14	0.11	0.14	0.09	0.20	0.20	0.00	0.00
Manure	0.84	1.09	0.94	1.18	2.01	2.68	0.42	0.56
Chemicals	22.32	22.89	22.58	22.82	25.07	26.51	16.64	16.73
Custom operations	5.94	6.13	5.99	6.14	6.51	6.83	6.59	6.74
Fuel, lube, and electricity	8.60	8.77	7.78	7.84	8.95	8.94	9.93	10.21
Repairs	10.17	10.56	9.50	9.83	9.79	10.23	10.52	10.75
Purchased irrigation water	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00
Interest on operating capital	2.16	1.36	2.08	1.30	2.45	1.60	1.85	1.19
Total, operating costs	77.28	81.88	74.54	78.34	87.47	96.63	66.18	71.88
Allocated overhead:								
Hired labor	2.03	2.04	1.35	1.42	2.13	2.22	2.92	3.16
Opportunity cost of unpaid labor	19.49	20.17	18.93	19.41	26.42	27.70	15.45	16.41
Capital recovery of machinery and equipment	53.61	55.75	51.02	52.80	53.88	56.41	49.13	50.15
Opportunity cost of land(rental rate)	80.12	81.98	90.65	92.38	67.40	68.71	40.16	40.45
Taxes and insurance	7.01	7.14	7.04	7.14	7.10	7.21	8.96	9.14
General farm overhead	14.56	15.17	14.94	15.46	15.06	15.62	22.50	23.37
Total, allocated overhead	176.82	182.25	183.93	188.61	171.99	177.87	139.12	142.68
Total costs listed	254.10	264.13	258.47	266.95	259.46	274.50	205.30	214.56
Value of production less total costs listed	-71.65	-85.68	-58.67	-75.59	-77.42	-123.91	-43.80	-72.72
Value of production less operating costs	105.17	96.57	125.26	113.02	94.57	53.96	95.32	69.96
Supporting information:								
Yield (bushels per planted acre)	41	43	45	46	41	37	38	36
Price (dollars per bushel at harvest)	4.45	4.15	4.44	4.16	4.44	4.07	4.25	3.94
Enterprise size (planted acres) 1/	220	220	225	225	115	115	281	281
Production practices: 1/								
Irrigated (percent)	5	5	2	2	3	3	7	7
Dryland (percent)	95	95	98	98	97	97	93	93

Continued--

Appendix table 10--Soybean production costs and returns, 2000-2001--Continued

Item	Prairie Gateway		Eastern Uplands		Southern Seaboard		Mississippi Portal	
	2000	2001	2000	2001	2000	2001	2000	2001
	Dollars per planted acre							
Gross value of production								
Primary product: Soybeans	114.66	156.39	155.38	166.14	174.33	159.90	112.80	142.56
Total, gross value of production	114.66	156.39	155.38	166.14	174.33	159.90	112.80	142.56
Operating costs:								
Seed	23.37	26.06	22.73	24.81	20.57	28.01	20.67	23.78
Fertilizer	4.25	5.01	18.75	20.45	21.42	25.48	7.59	8.07
Soil conditioners	0.03	0.05	0.43	0.48	0.76	0.78	0.06	0.06
Manure	0.05	0.07	0.15	0.21	0.22	0.29	0.07	0.09
Chemicals	23.02	21.52	21.93	24.13	19.89	22.59	21.50	22.81
Custom operations	6.30	6.67	3.72	3.94	5.66	5.54	4.98	5.03
Fuel, lube, and electricity	8.06	12.14	6.48	6.78	9.57	9.46	12.57	13.75
Repairs	11.94	12.91	8.23	8.59	10.76	10.54	14.25	15.76
Purchased irrigation water	0.76	0.88	0.00	0.00	0.00	0.00	0.00	0.00
Interest on operating capital	1.83	1.44	2.37	1.51	2.56	1.73	2.35	1.51
Total, operating costs	79.61	86.75	84.79	90.90	91.41	104.42	84.04	90.86
Allocated overhead:								
Hired labor	2.40	2.60	2.27	2.45	4.04	4.22	6.01	6.00
Opportunity cost of unpaid labor	20.93	21.34	33.07	34.10	22.77	23.91	15.94	16.97
Capital recovery of machinery and equipment	56.43	62.50	50.03	52.37	61.69	60.66	69.63	76.77
Opportunity cost of land(rental rate)	50.74	51.38	42.02	41.14	35.17	37.08	57.03	55.85
Taxes and insurance	8.36	8.53	5.83	5.88	4.99	4.95	5.88	5.95
General farm overhead	14.07	14.71	11.20	11.70	12.84	13.36	10.60	10.92
Total, allocated overhead	152.93	161.06	144.42	147.64	141.50	144.18	165.09	172.46
Total costs listed	232.54	247.81	229.21	238.54	232.91	248.60	249.13	263.32
Value of production less total costs listed	-117.88	-91.42	-73.83	-72.40	-58.58	-88.70	-136.33	-120.76
Value of production less operating costs	35.05	69.64	70.59	75.24	82.92	55.48	28.76	51.70
Supporting information:								
Yield (bushels per planted acre)	26	39	34	39	39	39	24	33
Price (dollars per bushel at harvest)	4.41	4.01	4.57	4.26	4.47	4.10	4.70	4.32
Enterprise size (planted acres) 1/	170	170	130	130	234	234	495	495
Production practices: 1/								
Irrigated (percent)	20	20	0	0	0	0	19	19
Dryland (percent)	80	80	100	100	100	100	81	81

1/ Developed from survey base year, 1997.

Appendix table 11--Wheat production costs and returns, 2000-2001

Item	United States		Northern Great Plains		Prairie Gateway		Basin and Range		Fruitful Rim	
	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001
	Dollars per planted acre									
Gross value of production										
Primary product: Wheat grain	92.57	95.22	83.98	77.94	70.89	82.86	164.28	156.74	184.20	189.21
Secondary product: straw/grazing	3.20	3.18	1.67	1.85	2.32	2.51	0.62	0.66	4.63	5.26
Total, gross value of production	95.77	98.40	85.65	79.79	73.21	85.37	164.90	157.40	188.83	194.47
Operating costs:										
Seed	6.14	6.34	6.19	6.34	3.92	4.43	9.52	8.96	10.91	10.48
Fertilizer	17.28	23.90	13.91	19.66	13.58	19.75	26.22	36.17	27.95	36.92
Chemicals	7.13	7.20	10.15	10.14	3.14	3.14	15.26	15.28	13.81	13.97
Custom operations	6.50	6.37	4.00	3.77	7.12	7.43	4.57	3.72	14.22	13.05
Fuel, lube, and electricity	9.13	9.19	6.06	6.03	11.14	11.30	9.76	9.88	18.10	17.79
Repairs	9.97	10.24	9.85	9.66	9.05	9.72	14.17	14.36	15.31	15.74
Purchased irrigation water and baling	0.59	0.62	0.16	0.17	0.15	0.16	1.12	1.14	6.19	6.31
Interest on operating inputs	1.64	1.08	1.45	0.94	1.39	0.94	2.32	1.51	3.07	1.93
Total, operating costs	58.38	64.94	51.77	56.71	49.49	56.87	82.94	91.02	109.56	116.19
Allocated overhead:										
Hired labor	2.30	2.45	1.60	1.67	1.85	1.98	5.51	5.77	7.11	7.43
Opportunity cost of unpaid labor	15.74	16.00	11.60	11.82	16.67	16.70	26.93	27.88	22.62	23.53
Capital recovery of machinery and equipment	48.25	49.40	50.15	49.18	41.75	44.8	68.85	69.87	67.15	69.14
Opportunity cost of land (rental rate)	38.53	39.54	36.26	37.17	28.94	29.92	51.12	52.61	78.61	80.84
Taxes and insurance	3.82	3.91	3.85	3.95	3.11	3.16	7.28	7.35	6.09	6.17
General farm overhead	6.84	7.10	6.49	6.76	5.88	6.11	11.85	12.21	10.62	10.93
Total, allocated overhead	115.48	118.40	109.95	110.55	98.20	102.67	171.54	175.69	192.20	198.04
Total, costs listed	173.86	183.34	161.72	167.26	147.69	159.54	254.48	266.71	301.76	314.23
Value of production less total costs listed	-78.09	-84.94	-76.08	-87.47	-74.48	-74.17	-89.58	-109.31	-112.93	-119.76
Value of production less operating costs	37.39	33.46	33.88	23.08	23.72	28.50	81.96	66.38	79.27	78.28
Supporting information:										
Yield (bushels per planted acre)	37.6	34.5	33.6	29.3	28.5	29.7	66.5	51.9	72.5	59.5
Price (dollars per bushel at harvest)	2.46	2.76	2.50	2.66	2.49	2.79	2.47	3.02	2.54	3.18
Enterprise size (planted acres) 1/	296	296	527	527	347	347	527	527	359	359
Production practices: 1/										
Winter wheat (percent of acres)	67	67	19	19	100	100	80	80	80	80
Spring wheat (percent of acres)	27	27	66	66	0	0	19	19	12	12
Durum wheat (percent of acres)	6	6	15	15	0	0	*	*	8	8
Irrigated (percent of acres)	5	5	*	*	6	6	8	8	35	35
Dryland (percent of acres)	95	95	99	99	94	94	92	92	65	65
Straw (percent of acres)	7	7	8	8	*	*	6	6	14	14

Continued--

Appendix table 11--Wheat production costs and returns, 2000-2001--Continued

Item	Northern Crescent		Heartland		Southern Seaboard		Mississippi Portal	
	2000	2001	2000	2001	2000	2001	2000	2001
	Dollars per planted acre							
Gross value of production								
Primary product: Wheat grain	144.27	143.44	129.84	136.71	97.20	81.16	155.48	147.20
Secondary product: straw/grazing	48.75	39.88	13.43	12.49	6.01	6.53	1.62	1.58
Total, gross value of production	193.02	183.32	143.27	149.20	103.21	87.69	157.10	148.78
Operating costs:								
Seed	9.15	10.10	10.31	10.65	14.15	12.17	11.20	11.45
Fertilizer	32.38	41.51	35.06	44.86	42.44	53.95	24.24	33.32
Chemicals	2.86	2.89	3.67	3.79	5.37	5.41	6.53	6.71
Custom operations	12.68	11.67	7.22	6.94	14.43	13.37	20.11	19.31
Fuel, lube, and electricity	5.77	5.56	6.56	6.37	8.03	7.60	8.20	7.80
Repairs	6.46	6.92	8.31	8.54	10.22	8.79	10.68	10.54
Purchased irrigation water and baling	2.05	2.13	0.55	0.57	0.17	0.18	0.14	0.15
Interest on operating inputs	2.06	1.36	2.07	1.38	2.73	1.71	2.34	1.50
Total, operating costs	73.41	82.14	73.75	83.10	97.54	103.18	83.44	90.78
Allocated overhead:								
Hired labor	0.40	0.41	1.40	1.45	5.77	6.17	5.75	5.77
Opportunity cost of unpaid labor	16.69	17.18	17.68	18.07	22.04	22.68	6.94	7.00
Capital recovery of machinery and equipment	39.31	42.14	44.66	46.00	46.77	40.54	51.97	51.40
Opportunity cost of land (rental rate)	67.67	69.66	65.27	66.80	44.78	46.04	46.98	48.31
Taxes and insurance	4.17	4.25	3.36	3.42	2.74	2.81	7.24	7.19
General farm overhead	8.21	8.46	7.50	7.78	6.01	6.23	10.84	10.85
Total, allocated overhead	136.45	142.10	139.87	143.52	128.11	124.47	129.72	130.52
Total, costs listed	209.86	224.24	213.62	226.62	225.65	227.65	213.16	221.30
Value of production less total costs listed	-16.84	-40.92	-70.35	-77.42	-122.44	-139.96	-56.06	-72.52
Value of production less operating costs	119.61	101.18	69.52	66.10	5.67	-15.49	73.66	58.00
Supporting information:								
Yield (bushels per planted acre)	69.0	61.3	59.0	55.8	42.6	34.1	62.4	57.5
Price (dollars per bushel at harvest)	2.09	2.34	2.20	2.45	2.28	2.38	2.49	2.56
Enterprise size (planted acres) 1/	45	45	79	79	131	131	232	232
Production practices: 1/								
Winter wheat (percent of acres)	95	95	85	85	100	100	100	100
Spring wheat (percent of acres)	5	5	15	15	0	0	0	0
Durum wheat (percent of acres)	0	0	0	0	0	0	0	0
Irrigated (percent of acres)	0	0	0	0	*	*	0	0
Dryland (percent of acres)	100	100	100	100	99	99	100	100
Straw (percent of acres)	64	64	17	17	13	13	*	*

1/ Developed for survey base year, 1998.

* = 0.1 to less than 5 percent.

Appendix table 12--Cotton production costs and returns, 2000-2001

Item	United States		Heartland		Prairie Gateway		Southern Seaboard		Fruitful Rim		Mississippi Portal	
	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001
	Dollars per planted acre											
Gross value of production:												
Primary product: Cotton	324.33	222.60	401.52	330.75	159.53	94.08	389.76	308.58	661.76	346.50	358.02	275.50
Secondary product: Cottonseed	50.85	48.80	57.05	59.56	29.50	25.20	50.48	63.96	108.08	87.60	61.95	64.84
Total, gross value of production	375.18	271.40	458.57	390.31	189.03	119.28	440.24	372.54	769.84	434.10	419.97	340.34
Operating costs:												
Seed	30.10	37.82	11.32	13.62	14.54	17.22	43.49	52.20	30.70	38.01	45.54	55.72
Fertilizer	31.32	35.26	31.27	34.97	17.92	20.04	45.63	50.83	40.77	43.99	36.34	40.52
Chemicals	58.32	59.25	73.71	73.71	25.67	25.67	68.48	68.43	92.07	87.46	85.29	85.75
Custom operations	19.93	19.99	9.19	12.30	6.69	7.58	15.39	19.68	78.46	73.33	14.28	16.03
Fuel, lube, and electricity	36.97	36.49	23.29	23.26	35.41	35.12	31.68	31.37	63.80	60.88	30.89	33.87
Repairs	27.18	28.53	34.47	33.99	25.36	27.73	24.05	24.20	26.56	26.43	32.86	33.50
Interest on operating inputs	7.55	4.71	7.02	4.57	4.52	2.84	8.42	5.47	13.62	7.80	8.59	5.45
Ginning	51.46	57.14	60.29	79.40	31.31	34.91	63.38	77.77	91.40	88.23	52.74	57.62
Purchased irrigation water	6.55	5.05	0.00	0.00	0.00	0.00	0.00	0.00	48.60	44.57	0.00	0.00
Total, operating costs	269.38	284.24	250.56	275.82	161.42	171.11	300.52	329.95	485.98	470.70	306.53	328.46
Allocated overhead:												
Hired labor	36.98	37.89	26.28	27.95	30.52	30.98	28.62	30.56	63.37	64.50	41.11	42.65
Opportunity cost of unpaid labor	29.90	30.28	19.35	19.90	30.29	30.78	37.85	38.57	32.28	34.07	22.68	23.26
Capital recovery of machinery and equipment	97.97	101.49	126.02	130.55	88.91	92.11	89.72	92.95	101.12	104.76	116.74	120.94
Opportunity cost of land	51.68	43.83	77.87	63.31	18.75	4.62	41.59	44.59	155.02	140.34	54.07	54.48
Taxes and insurance	15.93	16.68	7.45	7.81	15.31	16.07	18.83	19.69	17.12	18.35	14.86	15.52
General farm overhead	15.82	16.11	6.59	6.81	11.12	11.47	13.22	13.75	34.70	35.74	16.33	17.05
Total, allocated overhead	248.28	246.28	263.56	256.33	194.90	186.03	229.83	240.11	403.61	397.76	265.79	273.90
Total costs listed	517.66	530.52	514.12	532.15	356.32	357.14	530.35	570.06	889.59	868.46	572.32	602.36
Value of production less total costs listed	-142.48	-259.12	-55.55	-141.84	-167.29	-237.86	-90.11	-197.52	-119.75	-434.36	-152.35	-262.02
Value of production less operating costs	105.80	-12.84	208.01	114.49	27.61	-51.83	139.72	42.59	283.86	-36.60	113.44	11.88
Supporting information:												
Cotton Yield: pounds per planted acre	569	636	717	945	301	336	672	834	1,034	990	663	725
Price: dollars per pound	0.57	0.35	0.56	0.35	0.53	0.28	0.58	0.37	0.64	0.35	0.54	0.38
Cottonseed Yield: pounds per planted acre	1,017	1,220	1,141	1,489	590	630	1,262	1,599	1,544	1,460	1,239	1,621
Price: dollars per pound	0.05	0.04	0.05	0.04	0.05	0.04	0.04	0.04	0.07	0.06	0.05	0.04
Production practices: 1/												
Irrigated (percent)	33	33	33	33	30	30	11	11	74	74	30	30
Dryland (percent)	67	67	67	67	70	70	89	89	26	26	70	70
Land tenure: 1/												
Acres owned (percent)	35	35	21	21	30	30	37	37	54	54	31	31
Acres cash rented (percent)	23	23	16	16	4	4	56	56	25	25	26	26
Acres share rented (percent)	42	42	63	63	66	66	7	7	21	21	43	43
Land rent basis 2/	Composite	Composite	Share	Share	Share	Share	Cash	Cash	Cash	Cash	Cash	Cash

1/ Developed from survey base year, 1997. 2/ Method used to determine the opportunity cost of land.

Appendix table 13--Barley production cash costs and returns, excluding direct Government payments, 2000-2001

Item	United States		Northeast		Northern Plains		Northwest		Southwest	
	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001
	Dollars per planted acre									
Gross value of production (excluding direct Government payments):										
Barley	96.75	98.25	109.96	88.38	68.82	75.98	158.32	151.05	135.93	103.82
Barley straw	4.95	5.69	57.39	61.61	2.02	2.07	4.13	5.45	5.88	5.80
Total, gross value of production	101.70	103.94	167.35	149.99	70.84	78.05	162.45	156.50	141.81	109.62
Cash expenses:										
Seed	7.84	8.13	9.71	10.74	5.84	5.84	12.10	12.51	10.78	10.61
Fertilizer, lime, and gypsum	18.13	23.72	35.35	41.35	13.80	18.15	27.60	35.45	14.06	18.99
Chemicals	9.83	10.11	3.61	3.52	7.77	7.93	16.59	16.96	7.96	7.84
Custom operations	4.99	5.29	4.99	5.16	3.64	3.77	6.99	7.27	11.69	11.45
Fuel, lube, and electricity	16.17	15.57	11.71	9.25	10.28	8.92	30.52	31.08	23.52	20.39
Repairs	16.18	16.13	13.46	13.37	14.91	15.02	19.81	19.59	16.65	14.74
Hired labor	6.52	7.02	5.61	6.11	4.88	5.23	9.79	10.27	11.59	11.29
Other variable cash expenses 1/	2.28	2.52	2.07	2.65	1.14	1.32	4.32	4.53	6.49	5.66
Total, variable cash expenses	81.94	88.49	86.51	92.15	62.26	66.18	127.72	137.66	102.74	100.97
General farm overhead	6.33	6.66	5.88	5.97	5.82	6.01	7.23	7.58	8.55	9.37
Taxes and insurance	12.02	12.48	14.32	14.64	10.70	10.70	14.06	14.35	16.63	20.02
Interest	11.05	11.69	3.71	3.82	11.40	12.15	12.50	13.36	5.75	6.13
Total, fixed cash expenses	29.40	30.83	23.91	24.43	27.92	28.86	33.79	35.29	30.93	35.52
Total, cash expenses	111.34	119.32	110.42	116.58	90.18	95.04	161.51	172.95	133.67	136.49
Gross value of production less cash expenses	-9.64	-15.38	56.93	33.41	-19.34	-16.99	0.94	-16.45	8.14	-26.87
Harvest-period price (dollars/bu.)	1.82	2.01	1.38	1.28	1.59	1.83	2.13	2.34	2.48	2.36
Yield (bu./planted acre)	53.16	48.88	79.68	69.05	43.28	41.52	74.33	64.55	54.81	43.99

Barley production economic costs and returns, excluding direct Government payments, 2000-2001

Item	United States		Northeast		Northern Plains		Northwest		Southwest	
	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001
	Dollars per planted acre									
Gross value of production (excluding direct Government payments):										
Barley	96.75	98.25	109.96	88.38	68.82	75.98	158.32	151.05	135.93	103.82
Barley straw	4.95	5.69	57.39	61.61	2.02	2.07	4.13	5.45	5.88	5.80
Total, gross value of production	101.70	103.94	167.35	149.99	70.84	78.05	162.45	156.50	141.81	109.62
Economic (full ownership) costs:										
Variable cash expenses	81.94	88.49	86.51	92.15	62.26	66.18	127.72	137.66	102.74	100.97
General farm overhead	6.33	6.66	5.88	5.97	5.82	6.01	7.23	7.58	8.55	9.37
Taxes and insurance	12.02	12.48	14.32	14.64	10.70	10.70	14.06	14.35	16.63	20.02
Capital replacement	33.10	33.12	25.14	24.89	30.03	30.31	41.15	40.87	38.42	33.92
Operating capital	2.40	1.50	2.53	1.56	1.82	1.12	3.74	2.34	3.00	1.72
Other nonland capital	13.92	12.98	11.02	10.25	13.89	13.09	14.40	13.42	14.18	11.93
Land	35.85	37.22	23.17	24.07	29.82	29.86	51.14	53.39	46.43	49.84
Unpaid labor	8.85	9.38	16.63	17.49	6.70	7.02	12.50	13.07	12.08	11.81
Total, economic costs	194.41	201.83	185.20	191.02	161.04	164.29	271.94	282.68	242.03	239.58
Residual returns to management and risk	-92.71	-97.89	-17.85	-41.03	-90.20	-86.24	-109.49	-126.18	-100.22	-129.96
Harvest-period price (dollars/bu.)	1.82	2.01	1.38	1.28	1.59	1.83	2.13	2.34	2.48	2.36
Yield (bu./planted acre)	53.16	48.88	79.68	69.05	43.28	41.52	74.33	64.55	54.81	43.99

1/ Cost of purchased irrigation water and baling.

Appendix table 14--Grain sorghum production costs and returns per planted acre, 2000-2001

Item	United States		Eastern Uplands		Heartland		Mississippi Portal		Prairie Gateway	
	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001
	Dollars per planted acre									
Gross value of production:										
Sorghum	88.62	93.86	91.16	102.34	135.29	158.34	126.08	162.00	84.46	88.80
Total, gross value of production	88.62	93.86	91.16	102.34	135.29	158.34	126.08	162.00	84.46	88.80
Operating costs:										
Seed	6.33	6.35	5.18	6.93	8.62	9.00	8.01	7.89	5.98	5.82
Fertilizer	14.34	21.53	24.50	32.91	25.65	34.72	27.07	32.86	12.93	20.14
Chemicals	11.15	11.31	10.65	10.91	19.67	18.99	16.45	18.07	10.74	10.99
Custom operations	5.48	5.27	5.12	6.14	7.15	7.64	8.14	10.43	4.55	4.47
Fuel, lube, and electricity	26.09	29.99	35.88	41.43	36.34	40.92	14.68	15.49	26.28	30.68
Repairs	15.29	16.28	17.21	19.25	14.35	15.10	17.65	19.43	15.27	16.25
Interest on operating inputs	2.27	1.53	2.84	1.98	3.22	2.13	2.65	1.76	2.18	1.49
Total, operating costs	80.95	92.26	101.38	119.55	115.00	128.50	94.65	105.93	77.93	89.84
Allocated overhead:										
Hired labor	6.57	7.06	2.37	2.73	2.46	2.54	12.66	12.54	6.55	7.01
Opportunity cost of unpaid labor	20.80	21.32	23.51	23.61	19.24	19.91	13.57	14.03	20.90	21.42
Capital recovery of machinery and equipment	56.70	58.23	63.89	68.19	53.19	53.80	62.04	64.76	57.29	58.85
Opportunity cost of land	21.02	20.63	36.79	34.06	62.41	62.28	27.02	35.23	17.45	17.82
Taxes and insurance	5.07	5.10	7.84	7.63	7.40	7.56	7.28	7.40	5.00	5.07
General farm overhead	4.08	4.23	7.63	8.50	3.03	3.16	3.96	4.09	4.00	4.12
Total, allocated overhead	114.24	116.57	142.03	144.72	147.73	149.25	126.53	138.05	111.19	114.29
Total costs listed	195.19	208.83	243.41	264.27	262.73	277.75	221.18	243.98	189.12	204.13
Value of production less total costs listed	-106.57	-114.97	-152.25	-161.93	-127.44	-119.41	-95.10	-81.98	-104.66	-115.33
Value of production less operating costs	7.67	1.60	-10.22	-17.21	20.29	29.84	31.43	56.07	6.53	-1.04
Supporting information:										
Sorghum Yield: bushels per acre	42	38	43	43	83	87	64	81	41	37
Price: dollars per bushel	2.11	2.47	2.12	2.38	1.63	1.82	1.97	2.00	2.06	2.40
Production practices: 1/										
Irrigated (percent)	9	9	1	1	2	2	5	5	10	10
Dryland (percent)	91	91	99	99	98	98	95	95	90	90
Land tenure: 1/										
Acres owned (percent)	31	31	30	30	41	41	15	15	32	32
Acres cash rented (percent)	16	16	27	27	11	11	22	22	16	16
Acres share rented (percent)	53	53	43	43	48	48	62	62	53	53
Land rent basis 2/	Composite	Composite	Cash	Cash	Cash	Cash	Share	Share	Share	Share

1/ Developed from survey base year, 1995. 2/ Method used to determine the opportunity cost of land.

Appendix table 15--Oats production cash costs and returns, excluding direct Government payments, 2000-2001 1/

Item	United States		Northeast		North Central		Northern Plains	
	2000	2001	2000	2001	2000	2001	2000	2001
	Dollars per planted acre							
Gross value of production (excluding direct Government payments):								
Oats	70.10	86.47	71.13	92.02	69.90	85.42	65.63	85.09
Oats straw	33.67	34.90	44.27	45.89	46.48	48.18	9.38	9.72
Total, gross value of production	103.77	121.37	115.40	137.91	116.38	133.60	75.01	94.81
Cash expenses:								
Seed	7.25	7.47	13.83	14.07	8.30	8.23	4.44	4.85
Fertilizer, lime, and gypsum	14.88	17.85	27.48	30.76	18.24	21.16	7.99	10.92
Chemicals	1.81	1.83	2.86	2.90	1.25	1.27	2.29	2.32
Custom operations	4.33	4.36	4.91	4.90	5.76	5.82	2.43	2.42
Fuel, lube, and electricity	9.10	9.30	15.67	17.73	5.52	5.19	11.45	12.34
Repairs	9.69	9.88	11.24	11.45	6.57	6.69	12.70	12.95
Hired labor	2.44	2.43	3.94	3.92	2.18	2.17	0.44	0.44
Other variable cash expenses 2/	1.25	1.30	1.53	1.59	1.71	1.78	0.42	0.44
Total, variable cash expenses	50.75	54.42	81.46	87.32	49.53	52.31	42.16	46.68
General farm overhead	6.09	6.29	9.08	9.37	5.21	5.38	3.70	3.82
Taxes and insurance	15.60	15.88	23.21	23.63	21.16	21.54	8.14	8.29
Interest	5.80	5.90	5.56	5.66	6.48	6.60	5.39	5.48
Total, fixed cash expenses	27.49	28.07	37.85	38.66	32.85	33.52	17.23	17.59
Total, cash expenses	78.24	82.49	119.31	125.98	82.38	85.83	59.39	64.27
Gross value of production less cash expenses	25.53	38.88	-3.91	11.93	34.00	47.77	15.62	30.54
Harvest-period price (dollars/bu.)	1.06	1.35	1.25	1.44	1.02	1.32	1.04	1.32
Yield (bu./planted acre)	66.13	64.05	56.90	63.90	68.53	64.71	63.11	64.46

Oats production economic costs and returns, excluding direct Government payments,2000-2001 1/

Item	United States		Northeast		North Central		Northern Plains	
	2000	2001	2000	2001	2000	2001	2000	2001
	Dollars per planted acre							
Gross value of production (excluding direct Government payments):								
Oats	70.10	86.47	71.13	92.02	69.90	85.42	65.63	85.09
Oats straw	33.67	34.90	44.27	45.89	46.48	48.18	9.38	9.72
Total, gross value of production	103.77	121.37	115.40	137.91	116.38	133.60	75.01	94.81
Economic (full ownership) costs:								
Variable cash expenses	50.75	54.42	81.46	87.32	49.53	52.31	42.16	46.68
General farm overhead	6.09	6.29	9.08	9.37	5.21	5.38	3.70	3.82
Taxes and insurance	15.60	15.88	23.21	23.63	21.16	21.54	8.14	8.29
Capital replacement	17.44	18.41	17.41	27.99	12.22	16.08	23.00	16.36
Operating capital	1.37	0.92	2.38	1.48	1.45	0.89	1.23	0.79
Nonland capital	9.28	8.70	10.37	9.72	8.99	8.42	9.58	8.98
Land	28.01	28.14	6.04	6.15	37.32	37.63	22.59	22.55
Unpaid labor	19.22	20.31	26.39	26.26	24.12	25.50	12.29	13.49
Total, economic costs	147.76	153.07	176.34	191.92	160.00	167.75	122.69	120.96
Residual returns to management and risk	-43.99	-31.70	-60.95	-54.01	-43.62	-34.15	-47.68	-26.15
Harvest-period price (dollars/bu.)	1.06	1.35	1.25	1.44	1.02	1.32	1.04	1.32
Yield (bu./planted acre)	66.13	64.05	56.90	63.90	68.53	64.71	63.11	64.46

1/ Survey base year 1994. 2/ Includes cost of baling.

Appendix table 16--Rice production costs and returns, 2000-2001

Item	United States		Ark Non-Delta		California		Mississippi River Delta		Gulf Coast	
	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001
	Dollars per planted acre									
Gross value of production										
Primary product: Rice	368.77	328.67	367.05	313.99	422.31	323.84	332.28	325.25	357.68	367.07
Total, gross value of production	368.77	328.67	367.05	313.99	422.31	323.84	332.28	325.25	357.68	367.07
Operating costs:										
Seed	23.31	21.21	18.62	15.46	27.22	24.11	22.20	21.44	27.85	29.36
Fertilizer	46.65	59.11	38.05	49.20	57.37	64.84	47.26	63.31	54.00	72.59
Soil conditioners	0.01	0.01	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02
Chemicals 2/	49.25	49.44	36.49	39.42	79.50	79.11	48.36	50.99	47.15	46.97
Custom operations	68.69	65.59	40.68	41.71	153.72	157.61	47.71	48.85	66.66	66.39
Fuel, lube, and electricity	57.84	71.14	65.91	72.19	29.05	51.43	56.57	72.37	65.89	78.36
Repairs	19.16	19.90	20.30	20.86	16.35	17.34	19.38	19.96	20.68	21.22
Purchased irrigation water	11.12	9.64	0.00	0.00	40.84	42.25	0.00	0.00	15.60	15.01
Interest on operating capital	7.77	4.98	6.11	4.03	11.63	7.35	6.74	4.67	8.35	5.54
Total, operating costs	283.80	301.02	226.18	242.89	415.68	444.04	248.22	281.59	306.20	335.46
Allocated overhead:										
Hired labor	26.28	26.13	22.75	22.53	31.79	33.57	26.36	26.69	26.21	25.72
Opportunity cost of unpaid labor	43.55	43.90	44.33	45.85	56.71	58.58	14.84	15.33	57.10	57.97
Capital recovery of machinery and equipment	79.42	82.09	78.66	80.85	76.85	81.53	81.83	84.33	86.10	88.42
Opportunity cost of land(rental rate)	108.04	104.29	85.90	83.75	197.02	203.59	77.68	77.00	94.40	97.79
Taxes and insurance	15.69	15.87	14.85	15.20	19.64	20.11	16.63	17.07	13.35	13.58
General farm overhead	22.11	22.73	20.36	21.02	23.87	24.64	25.47	26.35	19.99	20.47
Total, allocated overhead	295.09	295.01	266.85	269.20	405.88	422.02	242.81	246.77	297.15	303.95
Total costs listed	578.89	596.03	493.03	512.09	821.56	866.06	491.03	528.36	603.35	639.41
Value of production less total costs listed	-210.12	-267.36	-125.98	-198.10	-399.25	-542.22	-158.75	-203.11	-245.67	-272.34
Value of production less operating costs	84.97	27.65	140.87	71.10	6.63	-120.20	84.06	43.66	51.48	31.61
Supporting information:										
Price (dollars per cwt at harvest)	5.46	4.74	5.58	4.66	5.19	3.87	5.44	4.99	5.53	5.43
Yield (cwt per planted acre)	68	69	66	67	81	84	61	65	65	68
Enterprise size (planted acres) 1/	391	391	407	407	315	315	503	503	366	366
Production practices: 1/										
Percentage of water from water sources	22	22	3	3	79	79	9	9	22	22
Percentage of farms harvesting ratoon crop	7	7	0	0	0	0	0	0	30	30
Type of rice (percentage of rice acreage):										
Long	71	71	80	80	0	0	99	99	93	93
Medium	27	27	20	20	92	92	1	1	7	7
Short	2	2	0	0	8	8	0	0	0	0

1/ Developed from survey base year, 2000.
2/ Includes non-chemical controls for blackbirds.

Appendix table 17--Peanut production costs and returns, 2000-2001

Item	United States		Prairie Gateway		Southern Seaboard			
					AL, GA	AL, GA	VA, NC	VA,NC
	2000	2001	2000	2001	2000	2001	2000	2001
	Dollars per planted acre							
Gross value of production:								
Primary product: Peanuts	539.19	593.40	338.85	388.70	602.37	658.90	785.16	801.32
Secondary product: Peanut hay	13.18	13.75	19.13	20.38	10.66	11.03	8.82	9.30
Total, gross value of production	552.37	607.15	357.98	409.08	613.03	669.93	793.98	810.62
Operating costs:								
Seed	72.71	73.72	60.65	60.97	75.98	76.67	90.02	92.55
Fertilizer	37.25	41.84	20.83	24.25	47.84	53.19	43.40	46.04
Chemicals	93.00	93.73	39.46	38.81	115.91	115.87	145.23	145.15
Custom operations	8.04	10.64	7.08	9.80	9.12	12.13	5.79	6.19
Fuel, lube, and electricity	46.46	46.55	62.41	65.95	35.04	33.71	30.75	30.20
Repairs	28.62	29.74	31.23	32.12	27.61	28.84	25.92	27.52
Interest on operating inputs	8.64	5.30	6.75	4.19	9.46	5.78	9.98	5.95
Commercial drying	13.61	18.15	12.36	16.93	16.67	22.21	5.08	5.31
Total, operating costs	308.33	319.67	240.77	253.02	337.63	348.40	356.17	358.91
Allocated overhead:								
Hired labor	39.10	41.45	28.06	28.08	38.38	41.39	52.43	56.87
Opportunity cost of unpaid labor	89.75	90.49	104.01	105.06	81.36	81.95	83.73	86.62
Capital recovery of machinery and equipment	122.62	122.97	133.12	132.72	117.05	117.63	114.60	117.53
Opportunity cost of land	38.24	41.17	49.60	56.96	31.75	32.82	43.27	45.48
Quota rent	80.42	83.47	44.51	51.96	98.28	98.39	80.57	80.62
Taxes and insurance	20.42	21.47	15.81	16.23	22.62	23.82	20.67	21.81
General farm overhead	18.65	19.04	23.67	24.34	13.67	14.05	17.90	18.48
Total, allocated overhead	409.20	420.06	398.78	415.35	403.11	410.05	413.17	427.41
Total costs listed	717.53	739.73	639.55	668.37	740.74	758.45	769.34	786.32
Value of production less total costs listed	-165.16	-132.58	-281.57	-259.29	-127.71	-88.52	24.64	24.30
Value of production less operating costs	244.04	287.48	117.21	156.06	275.40	321.53	437.81	451.71
Supporting information:								
Peanut yield: lbs/acre	1,997	2,580	1,255	1,690	2,231	2,995	2,908	3,082
Peanut price: dollars/lb	0.27	0.23	0.27	0.23	0.27	0.22	0.27	0.26
Production practices: 1/								
Irrigated (percent)	32	32	64	64	25	25	6	6
Dryland (percent)	68	68	36	36	75	75	94	94
Land tenure: 1/								
Acres owned (percent)	35	35	35	35	37	37	23	23
Acres cash rented (percent)	55	55	38	38	61	61	63	63
Acres share rented (percent)	10	10	25	25	2	2	14	14
Land rent basis 2/	Composite	Composite	Share	Share	Cash	Cash	Cash	Cash

1/ Developed from survey base year, 1995. 2/ Method used to determine the opportunity cost of land.

Appendix table 18--Sugar beet production cash costs and returns, 2000-2001 1/

Item	United States		Great Lakes		Red River Valley		Great Plains		Northwest	
	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001
	Dollars per planted acre									
Gross value of production 2/:										
Beets	767.87	698.12	641.65	638.52	723.06	624.60	642.50	678.62	1,050.38	945.77
Beet tops/grazing	0.14	0.12	0.00	0.00	0.00	0.00	0.77	0.80	0.00	0.00
Total, gross value of production	768.01	698.24	641.65	638.52	723.06	624.60	643.27	679.42	1,050.38	945.77
Cash expenses:										
Seed	44.21	44.54	38.93	41.57	44.89	45.01	48.13	48.32	41.44	41.71
Fertilizer	46.86	59.24	66.5	85.54	28.74	37.21	53.73	77.60	71.87	89.92
Chemicals	94.28	96.12	74.17	74.19	109.03	109.80	77.68	78.71	88.64	88.26
Custom operations	36.04	32.25	28.52	28.99	23.49	23.02	35.86	35.57	50.46	45.69
Fuel, lube, and electricity	50.90	49.75	50.19	50.91	24.86	24.55	54.26	54.09	109.89	118.99
Repairs	41.42	43.65	49.73	51.95	32.52	34.59	48.01	51.10	57.58	61.66
Purchased irrigation water	5.77	5.01	0.00	0.00	0.06	0.06	8.04	9.44	16.49	16.73
Freight and dirt hauling	14.23	14.78	18.87	19.31	13.62	13.91	11.91	13.01	13.76	14.70
Miscellaneous	16.43	16.41	3.12	3.23	13.30	13.75	15.42	17.79	26.62	28.97
Hauling allowance (-)	7.69	7.30	0.00	0.00	10.34	10.44	9.04	7.77	2.16	1.44
Interest on operating capital	10.31	6.03	9.52	6.04	8.38	4.96	10.18	6.42	13.75	8.59
Total, operating costs	352.76	360.48	339.55	361.73	288.55	296.42	354.18	384.28	488.34	513.78
Allocated overhead:										
Hired labor	58.70	60.42	29.10	29.73	51.76	55.21	52.40	55.19	95.36	100.44
Opportunity cost of unpaid labor	83.04	83.04	97.52	99.63	49.63	52.87	143.10	155.23	92.95	93.60
Capital recovery of machinery and equipment	142.07	145.01	166.02	168.95	114.64	117.22	158.82	163.52	198.30	206.24
Opportunity cost of land (rental rate)	126.61	123.81	126.17	129.81	83.85	86.16	132.47	132.31	211.14	214.59
Taxes and insurance	15.88	14.97	13.75	14.08	14.57	12.59	14.97	16.17	20.24	21.04
General farm overhead	35.08	34.91	27.05	27.92	27.55	28.49	33.46	37.99	44.94	47.34
Coop share	22.06	24.46	0.00	0.00	39.77	40.68	0.00	0.00	17.11	18.13
Total, allocated overhead	483.44	486.62	459.61	470.12	381.77	393.22	535.22	560.41	680.04	701.38
Total costs listed	836.20	847.10	799.16	831.85	670.32	689.64	889.40	944.69	1,168.38	1,215.16
Value of production less total costs listed	-68.19	-148.86	-157.51	-193.33	52.74	-65.04	-246.14	-265.27	-118.00	-269.39
Value of production less operating costs	415.25	337.76	302.10	276.79	434.51	328.18	289.09	295.14	562.04	431.99
Supporting information:										
Yield (tons/planted acre) 3/	22.40	20.30	20.50	20.40	20.60	17.80	20.30	21.30	28.10	25.10
Season-average price (dollars/ton)	34.28	34.39	31.30	31.30	35.10	35.09	31.65	31.86	37.38	37.68
Enterprise size (planted acres) 4/	276		195		328		246		279	
Production practices: 4/										
Irrigated (percent)	39		0		1		99		100	
Dryland (percent)	61		100		99		1		0	

1/ 2001 estimates are preliminary. Sugarbeet season-average prices are held at 2000 level because State-level prices for the 2001 season will not be available before January 2003.
2/ Excludes payments on acres diverted from production by the PIK program.
3/ Yields are those reported in USDA's Agricultural Resource Management Survey of sugarbeet growers adjusted for year-to-year changes as reported in Crop Production, NASS/USDA.
4/ For 2000 survey base year.

Note: Sugarbeet regions defined as: Great Lakes (Michigan), Red River Valley (eastern North Dakota, Minnesota), Great Plains (western North Dakota, Montana, Wyoming, Nebraska, Colorado), Northwest (Idaho, Oregon), and Southwest (California). The Southwest region is not reported because of limited data, but is included in the U.S. averages,
Source: Economic Research Service, USDA.

Appendix table 19--U.S. tobacco production costs and returns, 2000-2001

Item	Flue-cured				Burley			
	2000	2001	2000	2001	2000	2001	2000	2001
	Dollars per acre		Dollars per cwt		Dollars per acre		Dollars per cwt	
Gross value of production								
Tobacco	4,283.47	4,517.94	179.30	185.70	3,941.97	4,093.66	196.55	197.46
Total, gross value of production	4,283.47	4,517.94	179.30	185.70	3,941.97	4,093.66	196.55	197.46
Cash expenses:								
Seed and plant bed	60.07	63.95	2.51	2.63	102.61	106.03	5.13	5.10
Fertilizer	273.93	320.04	11.45	13.18	288.81	338.12	14.43	16.27
Chemicals	216.58	216.58	9.05	8.92	98.65	98.65	4.93	4.75
Custom operations	7.79	7.92	0.33	0.33	13.35	13.57	0.67	0.65
Fuel, lube, and electricity	90.69	81.89	3.79	3.37	96.36	87.01	4.82	4.19
Curing fuel	477.38	446.30	19.95	18.37	1/	1/	1/	1/
Repairs	115.32	119.04	4.82	4.90	75.92	78.37	3.79	3.77
Hired labor	594.35	634.61	24.84	26.13	499.76	526.92	24.98	25.36
Marketing expenses	187.24	88.95	7.82	3.66	152.65	64.42	7.63	3.10
Other variable cash expenses	3.98	4.12	0.17	0.17	20.78	21.50	1.04	1.03
Total, variable cash expenses	2,027.33	1,983.40	84.73	81.66	1,348.89	1,334.59	67.42	64.22
General farm overhead	189.38	195.49	7.91	8.05	211.38	218.20	10.56	10.50
Taxes and insurance	142.27	148.49	5.95	6.11	46.19	47.18	2.31	2.27
Interest	174.03	181.80	7.27	7.48	78.79	82.31	3.94	3.96
Total, fixed cash expenses	505.68	525.78	21.13	21.64	336.36	347.69	16.81	16.73
Total, cash expenses	2,533.01	2,509.18	105.86	103.30	1,685.25	1,682.28	84.23	80.95
Gross value of production less cash expenses	1,750.46	2,008.76	73.44	82.40	2,256.72	2,411.38	112.32	116.51

U.S. tobacco production economic costs and returns, 2000-2001

Item	Flue-cured				Burley			
	2000	2001	2000	2001	2000	2001	2000	2001
	Dollars per acre		Dollars per cwt		Dollars per acre		Dollars per cwt	
Gross value of production								
Tobacco	4,283.47	4,517.94	179.30	185.70	3,941.97	4,093.66	196.55	197.46
Total, gross value of production	4,283.47	4,517.94	179.30	185.70	3,941.97	4,093.66	196.55	197.46
Economic (full ownership) costs:								
Variable cash expenses	2,027.33	1,983.40	84.73	81.66	1,348.89	1,334.59	67.42	64.22
General farm overhead	189.38	195.49	7.91	8.05	211.38	218.20	10.56	10.50
Taxes and insurance	142.27	148.49	5.95	6.11	46.19	47.18	2.31	2.27
Capital replacement	313.34	320.86	13.09	13.21	134.13	142.02	6.70	6.83
Operating capital	59.30	33.72	2.48	1.39	40.91	23.02	2.04	1.11
Other nonland capital	77.52	76.83	3.24	3.16	94.08	88.16	4.70	4.24
Land and quota	1,370.37	1,433.20	57.27	59.00	991.31	1,081.99	49.54	52.07
Unpaid labor	241.16	257.49	10.08	10.60	693.35	731.03	34.65	35.18
Total, economic (full ownership) costs	4,420.67	4,449.48	184.75	183.18	3,560.24	3,666.19	177.92	176.42
Residual returns to management and risk	-137.20	68.46	-5.45	2.52	381.73	427.47	18.63	21.04
Harvest-period price (dollars/lb. or cwt)	1.79	1.86	179.30	185.70	1.97	1.97	196.55	197.46
Yield (lb. or cwt/harvested acre)	2,393	2,429	23.93	24.29	2,001	2,078	20.01	20.78

1/ Burley curing fuel costs are included in fuel, lube, and electricity expenses.

Appendix table 20--Milk production costs and returns, per cwt sold, 2000-2001

Item	United States		Heartland		Northern Crescent		Prairie Gateway		Eastern Uplands		Southern Seaboard		Fruitful Rim	
	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001
							Dollars per cwt							
Gross value of production:														
Milk	12.63	15.36	12.36	15.31	12.90	15.78	13.12	15.54	13.83	16.45	14.07	16.70	11.98	14.55
Cattle	1.05	1.12	1.42	1.54	1.17	1.24	0.84	0.91	1.32	1.42	1.40	1.52	0.71	0.76
Other income 1/	0.57	0.74	0.79	1.05	0.63	0.81	0.33	0.40	0.49	0.62	1.16	1.47	0.42	0.56
Total, gross value of production	14.25	17.22	14.57	17.90	14.70	17.83	14.29	16.85	15.64	18.49	16.63	19.69	13.11	15.87
Operating costs:														
Feed--														
Feed grains	1.22	1.27	1.83	1.99	1.15	1.22	1.43	1.45	1.23	1.24	0.74	0.78	1.11	1.12
Hay and straw	1.51	1.67	2.29	2.37	1.07	1.13	1.54	1.54	1.75	1.67	0.92	0.93	1.78	2.20
Complete feed mixes	1.43	1.50	0.87	0.94	1.09	1.14	1.47	1.50	2.86	2.97	2.95	3.05	1.63	1.73
Liquid whey and milk replacer	0.08	0.05	0.11	0.07	0.10	0.07	0.07	0.05	0.13	0.09	0.04	0.02	0.04	0.03
Silage	1.09	1.06	0.86	0.82	1.26	1.25	2.08	2.16	0.74	0.79	0.95	0.94	0.80	0.70
Grazed pasture and cropland	0.08	0.08	0.13	0.13	0.07	0.07	0.03	0.03	0.26	0.27	0.11	0.11	0.03	0.03
Other feed items 2/	1.08	1.12	1.55	1.58	1.05	1.07	0.90	1.00	2.37	2.70	1.18	1.20	0.81	0.82
Total, feed costs	6.49	6.75	7.64	7.90	5.79	5.95	7.52	7.73	9.34	9.73	6.89	7.03	6.20	6.63
Veterinary and medicine	0.65	0.66	0.75	0.77	0.77	0.79	0.55	0.55	0.55	0.57	0.57	0.59	0.50	0.51
Bedding and litter	0.16	0.16	0.23	0.23	0.23	0.24	0.02	0.02	0.10	0.10	0.10	0.11	0.07	0.07
Marketing	0.27	0.27	0.22	0.22	0.31	0.31	0.26	0.26	0.36	0.37	0.40	0.40	0.22	0.22
Custom services	0.53	0.54	0.53	0.54	0.47	0.48	0.93	0.95	0.82	0.85	0.90	0.92	0.42	0.43
Fuel, lube, and electricity	0.48	0.47	0.56	0.52	0.56	0.54	0.35	0.37	0.56	0.55	0.51	0.51	0.37	0.38
Repairs	0.53	0.56	0.59	0.59	0.60	0.61	0.39	0.41	0.66	0.68	0.58	0.62	0.43	0.50
Other operating costs 3/	0.01	0.01	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.02	0.02
Interest on operating capital	0.26	0.16	0.30	0.18	0.25	0.15	0.29	0.17	0.36	0.22	0.29	0.17	0.24	0.15
Total, operating cost	9.38	9.58	10.82	10.95	8.98	9.07	10.33	10.48	12.75	13.07	10.24	10.35	8.47	8.91
Allocated overhead:														
Hired labor	1.14	1.19	0.73	0.79	1.17	1.21	1.22	1.28	0.96	1.05	1.60	1.71	1.19	1.24
Opportunity cost of unpaid labor	3.54	3.58	5.64	5.68	5.15	5.15	0.57	0.53	6.35	6.47	2.49	2.54	0.97	1.01
Capital recovery of machinery and equipment 4/	3.23	3.41	4.66	4.67	4.11	4.22	1.07	1.12	4.31	4.36	2.74	2.98	1.93	2.29
Opportunity cost of land (rental rate)	0.06	0.06	0.09	0.09	0.09	0.08	0.01	0.02	0.20	0.20	0.06	0.07	0.02	0.02
Taxes and insurance	0.18	0.18	0.19	0.20	0.22	0.22	0.09	0.09	0.19	0.20	0.14	0.15	0.14	0.14
General farm overhead	0.49	0.50	0.56	0.58	0.61	0.63	0.35	0.36	0.51	0.53	0.52	0.54	0.32	0.33
Total, allocated overhead	8.64	8.92	11.87	12.01	11.35	11.51	3.31	3.40	12.52	12.81	7.55	7.99	4.57	5.03
Total costs listed	18.02	18.50	22.69	22.96	20.33	20.58	13.64	13.88	25.27	25.88	17.79	18.34	13.04	13.94
Value of production less total costs listed	-3.77	-1.28	-8.12	-5.06	-5.63	-2.75	0.65	2.97	-9.63	-7.39	-1.16	1.35	0.07	1.93
Value of production less operating costs	4.87	7.64	3.75	6.95	5.72	8.76	3.96	6.37	2.89	5.42	6.39	9.34	4.64	6.96
Supporting information:														
Milk cows (head per farm)	93	95	57	59	66	68	474	521	53	53	133	133	399	403
Output per cow (pounds)	19,974	20,003	18,567	18,541	19,721	19,806	21,940	22,028	16,942	17,024	19,079	19,097	21,352	21,319
Milking frequency greater than twice per day (percent of farms)	3.38	3.50	1.62	1.77	2.84	2.98	31.61	34.02	0.40	0.46	7.32	7.15	11.99	12.10
Homegrown feed cost (percent of total feed cost)	34	34	60	60	50	49	5	4	34	34	23	23	13	13
Milk cows injected with bST (head per farm)	17	17	10	10	13	14	86	94	3	3	26	25	80	80

1/ Income from renting or leasing dairy stock to other operations; renting space to other dairy operations; co-op patronage dividends associated with the dairy; assessment rebates, refunds, and other dairy-related resources; and manure production. 2/ Cotton seed meal, protein supplements, protein byproducts, vitamin or mineral supplements, nonprotein byproducts, alfalfa cubes or pellets, green chop, corn stalks, and antibiotics and other medicated additives. 3/ Manure handling. 4/ Machinery and equipment, and housing, manure handling, and feed storage structures, and dairy breeding herd.

Source: 2000 Agricultural Resource Management Survey, USDA.

Appendix table 21--Hog production costs and returns per hundredweight gain, 2000-2001

Item	United States		Heartland		Northern Crescent		Northern Great Plains	
	2000	2001	2000	2001	2000	2001	2000	2001
	Dollars per cwt gain 1/							
Gross value of production								
Market hogs	40.92	42.97	41.58	43.75	39.15	40.42	43.73	45.42
Feeder pigs	14.30	14.35	11.39	11.27	5.89	5.80	11.58	11.08
Cull stock	1.36	1.39	1.28	1.29	2.43	2.74	0.92	1.01
Breeding stock	0.97	1.01	0.51	0.50	0.58	0.60	0.09	0.11
Inventory change	0.66	0.63	-0.13	-0.36	0.55	-0.26	0.94	0.49
Other income 2/	1.30	1.65	1.46	1.89	1.75	2.30	0.92	1.17
Total, gross value of production	59.51	62.00	56.09	58.34	50.35	51.60	58.18	59.28
Operating costs:								
Feed --								
Grain	5.00	5.34	6.42	7.10	7.61	7.62	2.77	3.37
Protein sources	4.54	4.62	6.21	6.45	6.56	6.59	2.01	2.38
Complete mixes	9.82	10.22	7.45	7.74	3.88	3.91	12.99	12.90
Other feed items 3/	0.18	0.18	0.21	0.23	0.19	0.20	0.01	0.02
Total feed cost	19.54	20.36	20.29	21.52	18.24	18.32	17.78	18.67
Other --								
Feeder pigs	16.69	16.63	14.40	14.30	11.71	11.57	25.15	23.79
Veterinary and medicine	1.08	1.10	1.21	1.22	0.96	0.97	0.84	0.89
Bedding and litter	0.03	0.03	0.04	0.04	0.02	0.02	0.01	0.01
Marketing	1.01	1.05	0.62	0.63	0.53	0.54	0.54	0.54
Custom services	0.39	0.42	0.31	0.32	0.27	0.28	0.03	0.03
Fuel, lube, and electricity	1.41	1.32	1.54	1.45	1.45	1.35	1.13	1.08
Repairs	0.75	0.78	0.86	0.92	0.79	0.79	0.42	0.44
Other operating costs 4/	0.04	0.04	0.03	0.03	0.03	0.03	0.05	0.05
Interest on operating capital	1.18	0.70	1.13	0.68	0.98	0.57	1.33	0.77
Total, operating costs	42.12	42.43	40.43	41.11	34.98	34.44	47.28	46.27
Allocated overhead:								
Hired labor	2.25	2.39	2.27	2.43	2.54	2.69	1.04	1.16
Opportunity cost of unpaid labor	5.03	4.94	5.94	5.84	6.40	6.36	4.25	4.71
Capital recovery of machinery & equipment 5/	10.34	10.74	10.73	11.11	11.02	11.32	8.44	8.67
Opportunity cost of land (rental rate)	0.05	0.05	0.05	0.05	0.06	0.06	0.02	0.02
Taxes and insurance	0.46	0.46	0.50	0.50	0.44	0.45	0.89	0.95
General farm overhead	0.96	0.97	1.00	1.02	0.91	0.93	1.33	1.51
Total, allocated overhead	19.09	19.55	20.49	20.95	21.37	21.81	15.97	17.02
Total costs listed	61.21	61.98	60.92	62.06	56.35	56.25	63.25	63.29
Value of production less total costs listed	-1.70	0.02	-4.83	-3.72	-6.00	-4.65	-5.07	-4.01
Value of production less operating costs	17.39	19.57	15.66	17.23	15.37	17.16	10.90	13.01
Supporting information:								
Production arrangement (percent of production) 6/								
Independent	58	57	71	72	72	71	47	50
Under contract	42	43	29	28	28	29	53	50
Size of operation (head sold/removed) 6/								
Market hogs	1,872	1,994	1,607	1,706	1,182	1,210	2,437	2,415
Feeder pigs	1,330	1,436	875	924	251	256	900	873

Continued--

Appendix table 21--Hog production costs and returns per hundredweight gain, 2000-2001--Continued

Item	Prairie Gateway		Eastern Upland		Southern Seaboard		Mississippi Portal	
	2000	2001	2000	2001	2000	2001	2000	2001
	Dollars per cwt gain 1/							
Gross value of production								
Market hogs	39.91	41.67	33.39	35.14	41.02	43.20	36.40	37.77
Feeder pigs	3.05	2.92	23.19	21.96	27.14	27.04	14.37	14.47
Cull stock	2.84	2.97	2.76	2.78	0.65	0.65	2.19	2.29
Breeding stock	4.92	5.27	4.49	4.67	0.51	0.55	0.63	0.62
Inventory change	3.26	2.69	-0.79	-1.41	2.06	2.96	0.05	0.65
Other income 2/	0.91	1.19	1.14	1.33	0.96	1.15	1.24	1.44
Total, gross value of production	54.89	56.71	64.18	64.47	72.34	75.55	54.88	57.24
Operating costs:								
Feed --								
Grain	5.45	5.30	3.91	4.38	0.59	0.55	9.21	10.23
Protein sources	3.75	3.89	1.89	2.16	0.37	0.31	4.83	5.14
Complete mixes	8.76	9.52	11.91	12.24	17.64	17.87	4.07	4.17
Other feed items 3/	0.14	0.14	0.77	0.82	0.01	0.01	0.08	0.09
Total feed cost	18.10	18.85	18.48	19.60	18.61	18.74	18.19	19.63
Other --								
Feeder pigs	16.85	16.37	11.22	10.82	24.09	24.04	9.23	9.31
Veterinary and medicine	0.84	0.87	1.22	1.24	0.88	0.90	1.54	1.58
Bedding and litter	0.03	0.03	0.03	0.03	0.00	0.00	0.00	0.01
Marketing	0.65	0.66	1.61	1.60	2.25	2.31	0.78	0.79
Custom services	0.09	0.09	0.13	0.14	0.75	0.77	0.35	0.34
Fuel, lube, and electricity	1.12	1.04	2.09	1.92	1.04	0.98	2.77	2.65
Repairs	0.67	0.72	1.03	1.05	0.44	0.46	1.07	1.10
Other operating costs 4/	0.05	0.05	0.07	0.08	0.03	0.03	0.00	0.00
Interest on operating capital	1.11	0.65	1.03	0.61	1.39	0.81	0.98	0.60
Total, operating costs	39.51	39.33	36.91	37.09	49.48	49.04	34.91	36.01
Allocated overhead:								
Hired labor	2.87	3.16	2.46	2.61	1.76	1.85	2.97	3.19
Opportunity cost of unpaid labor	3.59	3.62	9.23	9.39	2.16	2.13	25.86	25.94
Capital recovery of machinery & equipment 5/	10.61	11.35	12.83	13.30	8.51	8.95	25.45	25.75
Opportunity cost of land (rental rate)	0.05	0.05	0.08	0.09	0.04	0.04	0.97	1.01
Taxes and insurance	0.50	0.51	0.83	0.82	0.27	0.27	0.81	0.81
General farm overhead	1.17	1.22	1.07	1.11	0.66	0.65	3.33	3.27
Total, allocated overhead	18.79	19.91	26.50	27.32	13.40	13.89	59.39	59.97
Total costs listed	58.30	59.24	63.41	64.41	62.88	62.93	94.30	95.98
Value of production less total costs listed	-3.41	-2.53	0.77	0.06	9.46	12.62	-39.42	-38.74
Value of production less operating costs	15.38	17.38	27.27	27.38	22.86	26.51	19.97	21.23
Supporting information:								
Production arrangement (percent of production) 6/								
Independent	83	84	36	38	13	11	92	92
Under contract	17	16	64	62	87	89	8	8
Size of operation (head sold/removed) 6/								
Market hogs	2,276	2,402	935	982	5,516	5,913	380	380
Feeder pigs	655	684	1,651	1,668	7,221	7,825	268	276

1/ Cwt gain = (cwt sold - cwt purchased) + cwt inventory change. 2/ Value of manure production.
3/ Milk replacer, milk, milk by-products, antibiotics, and other medicated additives.
4/ Costs for odor control and fees, permits, licenses, and other regulatory costs.
5/ Machinery and equipment, and housing, manure handling, and feed storage structures, and breeding herd.
6/ Developed from survey base year, 1998.

Appendix table 22--Farrow-to-finish production costs and returns per hundredweight gain, 2000-2001

Item	United States		Heartland		Northern Crescent		Prairie Gateway		Eastern Upland		Southern Seaboard	
	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001
	Dollars per cwt gain 1/											
Gross value of production												
Market hogs	40.43	42.58	40.34	42.64	35.20	36.32	46.24	48.49	37.19	39.23	46.24	49.17
Feeder pigs	0.79	0.74	0.85	0.81	0.52	0.48	0.56	0.47	0.84	0.77	0.24	0.19
Cull stock	2.17	2.24	2.18	2.19	4.06	4.63	1.24	1.29	0.96	0.96	1.39	1.47
Breeding stock	0.23	0.23	0.20	0.20	0.28	0.31	0.37	0.36	0.05	0.04	0.40	0.34
Inventory change	0.15	-0.20	0.10	-0.20	0.59	-0.14	0.49	-0.14	-0.79	-0.94	-0.46	-0.86
Other income 2/	1.36	1.73	1.41	1.81	1.65	2.10	0.85	1.13	1.06	1.25	1.14	1.34
Total, gross value of production	45.13	47.32	45.08	47.45	42.30	43.70	49.75	51.60	39.31	41.31	48.95	51.65
Operating costs:												
Feed --												
Grain	8.11	8.75	8.11	8.93	9.20	9.09	7.97	7.76	7.04	7.67	6.41	6.71
Protein sources	7.96	8.20	8.60	8.87	7.50	7.53	5.81	5.92	4.04	4.63	4.24	4.12
Complete mixes	4.36	4.57	4.41	4.66	2.46	2.51	3.18	3.52	5.51	5.12	10.36	11.19
Other feed items 3/	0.31	0.33	0.35	0.37	0.28	0.29	0.13	0.14	0.06	0.06	0.07	0.06
Total feed cost	20.74	21.85	21.47	22.83	19.44	19.42	17.09	17.34	16.65	17.48	21.08	22.08
Other --												
Feeder pigs	0.12	0.12	0.08	0.08	0.65	0.68	0.00	0.00	0.04	0.04	0.01	0.01
Veterinary and medicine	1.47	1.48	1.63	1.63	0.93	0.94	1.34	1.40	1.11	1.17	0.78	0.85
Bedding and litter	0.04	0.04	0.05	0.04	0.02	0.02	0.05	0.04	0.04	0.04	0.00	0.00
Marketing	0.38	0.39	0.34	0.35	0.37	0.37	0.57	0.57	0.59	0.59	0.63	0.62
Custom services	0.31	0.32	0.27	0.28	0.21	0.21	0.22	0.23	0.13	0.12	0.26	0.26
Fuel, lube, and electricity	1.63	1.53	1.64	1.55	1.42	1.30	1.42	1.31	1.30	1.16	1.84	1.75
Repairs	1.10	1.17	1.17	1.26	0.82	0.81	1.01	1.07	0.83	0.76	0.93	0.97
Other operating costs 4/	0.04	0.04	0.03	0.03	0.03	0.04	0.09	0.09	0.02	0.02	0.13	0.13
Interest on operating capital	0.74	0.45	0.77	0.47	0.69	0.40	0.63	0.37	0.60	0.36	0.74	0.45
Total, operating costs	26.57	27.39	27.45	28.52	24.58	24.19	22.42	22.42	21.31	21.74	26.40	27.12
Allocated overhead:												
Hired labor	2.86	3.11	2.59	2.83	2.38	2.51	3.32	3.61	2.06	2.31	5.38	5.97
Opportunity cost of unpaid labor	7.56	7.43	7.73	7.51	8.27	8.15	5.28	5.59	8.48	8.74	7.03	6.93
Capital recovery of machinery and equipment 5/	11.79	12.26	11.63	12.03	12.11	12.41	9.57	10.31	11.00	11.46	15.49	16.89
Opportunity cost of land (rental rate)	0.07	0.07	0.06	0.06	0.09	0.09	0.07	0.09	0.11	0.11	0.11	0.11
Taxes and insurance	0.54	0.55	0.53	0.54	0.35	0.35	0.70	0.70	0.49	0.49	0.47	0.47
General farm overhead	1.27	1.28	1.10	1.11	0.85	0.87	1.06	1.11	0.93	1.02	3.70	3.85
Total, allocated overhead	24.09	24.70	23.64	24.08	24.05	24.38	20.00	21.41	23.07	24.13	32.18	34.22
Total costs listed	50.66	52.09	51.09	52.60	48.63	48.57	42.42	43.83	44.38	45.87	58.58	61.34
Value of production less total costs listed	-5.53	-4.77	-6.01	-5.15	-6.33	-4.87	7.33	7.77	-5.07	-4.56	-9.63	-9.69
Value of production less operating costs	18.56	19.93	17.63	18.93	17.72	19.51	27.33	29.18	18.00	19.57	22.55	24.53
Supporting information:												
Production arrangement (percent of production) 6/												
Independent	98	98	99	99	91	90	100	100	77	80	94	93
Under contract	2	2	1	1	9	10	0	0	23	20	6	7
Size of operation (head sold/removed) 6/												
Market hogs	1,422	1,511	1,424	1,520	1,239	1,285	1,867	1,962	884	940	1,665	1,803
Feeder pigs	45	45	47	49	28	27	38	34	40	38	19	17

1/ Cwt gain = (cwt sold - cwt purchased) + cwt inventory change. 2/ Value of manure production. 3/ Milk replacer, milk, milk by-products, antibiotics, and other medicated additives. 4/ Costs for odor control and fees, permits, licenses, and other regulatory costs. 5/ Machinery and equipment, and housing, manure handling, and feed storage structures, and breeding herd. 6/ Developed from survey base year, 1998.

Appendix table 23--Farrow-to-feeder pig production costs and returns per hundredweight gain, 2000-2001

Item	United States		Eastern Upland		Southern Seaboard	
	2000	2001	2000	2001	2000	2001
	Dollars per cwt gain 1/					
Gross value of production						
Market hogs	1.97	2.21	1.33	1.45	4.70	4.96
Feeder pigs	122.29	121.07	116.72	114.65	122.26	120.56
Cull stock	3.26	3.33	6.55	6.42	3.37	3.41
Breeding stock	0.32	0.33	3.21	3.20	0.31	0.31
Inventory change	-5.71	-5.50	-0.66	-2.07	-0.23	0.43
Other income 2/	1.21	1.52	1.31	1.52	1.14	1.37
Total, gross value of production	123.34	122.96	128.46	125.17	131.55	131.04
Operating costs:						
Feed --						
Grain	1.83	1.97	4.02	4.54	0.05	0.04
Protein sources	0.95	1.00	0.70	0.74	0.23	0.22
Complete mixes	24.09	25.23	19.13	20.57	23.93	24.05
Other feed items 3/	0.22	0.23	2.72	3.02	0.02	0.02
Total feed cost	27.09	28.43	26.57	28.87	24.23	24.33
Other --						
Feeder pigs	0.71	0.76	0.09	0.09	2.15	2.12
Veterinary and medicine	2.74	2.91	3.03	3.03	3.89	3.96
Bedding and litter	0.05	0.05	0.00	0.00	0.00	0.00
Marketing	3.69	3.86	3.50	3.52	6.14	6.22
Custom services	0.28	0.31	0.03	0.03	0.71	0.72
Fuel, lube, and electricity	3.96	3.79	5.95	5.60	3.01	2.84
Repairs	1.09	1.16	1.25	1.31	1.14	1.20
Other operating costs 4/	0.04	0.04	0.06	0.05	0.03	0.03
Interest on operating capital	1.14	0.70	1.17	0.72	1.19	0.70
Total, operating costs	40.79	42.01	41.65	43.22	42.49	42.12
Allocated overhead:						
Hired labor	11.30	11.80	6.25	6.28	6.99	7.45
Opportunity cost of unpaid labor	7.80	7.86	21.35	21.68	4.59	4.67
Capital recovery of machinery and equipment 5/	26.32	27.68	27.07	27.92	19.83	20.97
Opportunity cost of land (rental rate)	0.07	0.07	0.09	0.10	0.06	0.06
Taxes and insurance	0.95	0.95	1.59	1.58	0.80	0.81
General farm overhead	1.54	1.59	1.91	1.88	1.57	1.61
Total, allocated overhead	47.98	49.95	58.26	59.44	33.84	35.57
Total costs listed	88.77	91.96	99.91	102.66	76.33	77.69
Value of production less total costs listed	34.57	31.00	28.55	22.51	55.22	53.35
Value of production less operating costs	82.55	80.95	86.81	81.95	89.06	88.92
Supporting information:						
Production arrangement (percent of production) 6/						
Independent	23	22	24	24	1	1
Under contract	77	78	76	76	99	99
Size of operation (head sold/removed) 6/						
Market hogs	65	72	26	28	344	373
Feeder pigs	8,535	8,886	3,942	4,096	18,656	20,208

1/ Cwt gain = (cwt sold - cwt purchased) + cwt inventory change. 2/ Value of manure production.
3/ Milk replacer, milk, milk by-products, antibiotics, and other medicated additives.
4/ Costs for odor control and fees, permits, licenses, and other regulatory costs.
5/ Machinery and equipment, and housing, manure handling, and feed storage structures, and breeding herd.
6/ Developed from survey base year, 1998.

Appendix table 24--Feeder pig-to-finish production costs and returns per hundredweight gain, 2000-2001

Item	United States		Heartland		Northern Crescent		Eastern Upland		Southern Seaboard	
	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001
					Dollars per cwt gain 1/					
Gross value of production										
Market hogs	49.00	51.27	50.56	52.73	45.38	46.58	45.99	48.04	49.96	52.66
Feeder pigs	0.43	0.42	0.23	0.22	0.01	0.01	0.00	0.00	0.67	0.66
Cull stock	0.38	0.39	0.02	0.02	0.17	0.17	0.00	0.00	0.17	0.18
Breeding stock	0.40	0.41	0.02	0.02	0.00	0.00	0.00	0.00	0.07	0.07
Inventory change	1.92	2.11	0.86	0.68	0.51	-0.18	-1.06	-2.01	3.13	4.19
Other income 2/	1.28	1.60	1.59	2.05	1.80	2.27	1.02	1.19	0.90	1.08
Total, gross value of production	53.41	56.20	53.28	55.72	47.87	48.85	45.95	47.22	54.90	58.84
Operating costs:										
Feed --										
Grain	3.15	3.38	5.05	5.64	5.93	6.15	1.80	2.00	0.11	0.13
Protein sources	2.30	2.37	3.84	4.08	3.91	3.90	0.82	0.92	0.03	0.02
Complete mixes	12.11	12.42	8.96	9.06	6.64	6.76	13.14	13.85	17.10	17.19
Other feed items 3/	0.06	0.06	0.08	0.08	0.17	0.16	0.00	0.00	0.00	0.00
Total feed cost	17.62	18.23	17.93	18.86	16.65	16.97	15.76	16.77	17.24	17.34
Other --										
Feeder pigs	30.23	29.69	32.35	31.97	28.30	27.92	20.95	20.61	27.36	26.98
Veterinary and medicine	0.45	0.46	0.53	0.55	0.29	0.29	0.59	0.59	0.33	0.34
Bedding and litter	0.01	0.01	0.02	0.02	0.01	0.01	0.00	0.00	0.00	0.00
Marketing	0.89	0.92	0.53	0.54	0.51	0.52	0.66	0.67	1.62	1.65
Custom services	0.42	0.45	0.37	0.40	0.15	0.15	0.03	0.03	0.71	0.73
Fuel, lube, and electricity	0.80	0.75	0.98	0.92	0.59	0.56	0.83	0.79	0.61	0.57
Repairs	0.37	0.38	0.42	0.43	0.47	0.48	0.51	0.54	0.30	0.32
Other operating costs 4/	0.03	0.03	0.03	0.03	0.04	0.05	0.04	0.04	0.01	0.01
Interest on operating capital	1.47	0.86	1.53	0.91	1.36	0.79	1.14	0.67	1.39	0.81
Total, operating costs	52.29	51.78	54.69	54.63	48.37	47.74	40.51	40.71	49.57	48.75
Allocated overhead:										
Hired labor	0.68	0.73	0.42	0.45	1.31	1.37	0.55	0.58	0.60	0.64
Opportunity cost of unpaid labor	2.46	2.42	3.43	3.38	4.01	4.16	2.70	2.66	1.22	1.27
Capital recovery of machinery and equipment 5/	6.61	6.87	6.75	6.95	7.84	8.10	6.24	6.52	5.37	5.68
Opportunity cost of land (rental rate)	0.03	0.03	0.02	0.02	0.02	0.02	0.05	0.06	0.03	0.03
Taxes and insurance	0.33	0.32	0.39	0.38	0.48	0.50	0.57	0.58	0.19	0.19
General farm overhead	0.63	0.64	0.79	0.80	0.86	0.89	0.45	0.47	0.29	0.30
Total, allocated overhead	10.74	11.01	11.80	11.98	14.52	15.04	10.56	10.87	7.70	8.11
Total costs listed	63.03	62.79	66.49	66.61	62.89	62.78	51.07	51.58	57.27	56.86
Value of production less total costs listed	-9.62	-6.59	-13.21	-10.89	-15.02	-13.93	-5.12	-4.36	-2.37	1.98
Value of production less operating costs	1.12	4.42	-1.41	1.09	-0.50	1.11	5.44	6.51	5.33	10.09
Supporting information:										
Production arrangement (percent of production) 6/										
Independent	35	34	48	49	38	36	10	10	7	7
Under contract	65	66	52	51	62	64	90	90	93	93
Size of operation (head sold/removed) 6/										
Market hogs	3,337	3,549	2,351	2,486	1,154	1,147	3,396	3,598	11,548	11,722
Feeder pigs	49	52	13	14	0	0	0	0	286	290

1/ Cwt gain = (cwt sold - cwt purchased) + cwt inventory change. 2/ Value of manure production. 3/ Milk replacer, milk, milk by-products, antibiotics, and other medicated additives. 4/ Costs for odor control and fees, permits, licenses, and other regulatory costs. 5/ Machinery and equipment, and housing, manure handling, and feed storage structures, and breeding herd. 6/ Developed from survey base year, 1998.

Appendix table 25--Cow-calf production costs and returns per bred cow, 2000-2001

Item	United States		Heartland		Northern Great Plains		Prairie Gateway	
	2000	2001	2000	2001	2000	2001	2000	2001
	Dollars							
Gross value of production:								
Steer calves	162.56	161.24	191.23	188.26	167.21	164.47	174.91	174.67
Heifer calves	101.07	100.22	129.55	127.54	103.87	102.05	94.61	94.43
Yearling steers	101.45	104.25	37.75	38.84	118.68	120.78	140.06	145.53
Yearling heifers	43.21	44.57	11.43	11.74	34.18	35.06	73.19	75.60
Other cattle	76.97	83.29	66.87	72.71	94.05	99.00	79.40	87.74
Total gross value of production 1/	491.31	499.72	441.36	443.39	525.01	527.72	568.81	585.10
Operating costs:								
Purchased cattle for backgrounding	66.62	68.10	25.64	26.39	38.15	38.24	110.39	114.19
Feed:								
Concentrates and other feed	24.06	26.32	24.76	26.23	18.19	19.58	31.00	34.83
Supplemental feed	15.06	16.71	30.65	35.19	33.16	37.40	5.69	5.71
Harvested forages	126.72	140.11	190.00	206.00	118.48	136.30	102.23	110.77
Cropland pasture	12.57	13.77	13.10	13.42	7.72	7.61	23.73	27.15
Private pasture	94.20	99.70	68.54	73.63	115.72	114.82	77.46	88.78
Public land	2.46	2.44	0.37	0.37	6.93	6.53	1.19	1.37
Total feed costs	275.07	299.05	327.42	354.84	300.20	322.24	241.30	268.61
Other:								
Veterinary and medicine	22.78	22.75	41.64	39.24	16.37	14.95	19.05	19.91
Bedding and litter	0.38	0.42	1.22	1.32	0.23	0.24	0.03	0.04
Marketing	6.05	6.15	4.53	4.30	7.02	6.36	6.64	7.13
Custom operations	32.12	31.87	43.42	40.77	32.92	29.66	23.73	25.10
Fuel, lube, and electricity	19.08	19.07	16.19	16.18	16.39	16.38	22.31	22.31
Repairs	26.14	26.32	31.43	29.63	24.07	21.46	30.81	32.65
Interest on operating inputs	13.70	7.95	15.31	8.89	13.17	7.64	13.82	8.02
Total operating costs	461.94	481.68	506.80	521.56	448.52	457.17	468.08	497.96
Allocated overhead:								
Hired labor	3.41	3.54	0.54	0.58	0.71	0.75	2.62	2.75
Opportunity cost of unpaid labor	242.54	247.95	200.12	205.55	325.93	331.60	186.59	188.87
Capital recovery cost of machinery &equipment 2/	128.61	137.44	254.91	272.90	82.26	88.72	130.05	134.92
Opportunity cost of land	2.63	2.42	5.42	5.46	3.42	3.12	1.75	1.49
Taxes and insurance	33.12	33.50	43.78	44.13	33.42	33.81	30.30	30.66
General farm overhead	58.35	60.25	80.63	82.71	53.31	55.32	59.34	61.29
Total allocated overhead	468.66	485.10	585.40	611.33	499.05	513.32	410.65	419.98
Total costs listed	930.60	966.78	1,092.20	1,132.89	947.57	970.49	878.73	917.94
Value of production less total costs listed	-439.29	-467.06	-650.84	-689.50	-422.56	-442.77	-309.92	-332.84
Value of production less operating costs	29.37	18.04	-65.44	-78.17	76.49	70.55	100.73	87.14
Supporting information:								
Bred cows (head) 3/	83	83	51	51	174	174	78	78
Calves weaned (head) 3/	71	71	45	45	162	162	66	66
Calving season (percent of ranches) 3/								
One	49	49	65	65	95	95	42	42
Two	13	13	9	9	4	4	14	14
None set	38	38	26	26	1	1	44	44
Cost of homegrown harvested forages (percent of total cost) 3/ 4/	84	84	94	94	89	89	81	81
Cost of pasture owned:								
Private pasture (percent of total cost) 3/ 5/	72	72	72	72	61	61	66	66
Cropland pasture (percent of total cost) 3/ 5/	80	80	76	76	84	84	77	77

Continued--

Appendix table 25--Cow-calf production costs and returns per bred cow, 2000-2001--Continued

Item	Eastern Uplands		Fruitful Rim		Basin and Range		Mississippi Portal	
	2000	2001	2000	2001	2000	2001	2000	2001
	Dollars							
Gross value of production:								
Steer calves	143.33	142.13	89.73	90.35	173.83	171.72	141.31	140.56
Heifer calves	114.53	113.71	61.83	62.35	108.07	106.56	121.05	120.41
Yearling steers	57.28	56.95	57.92	62.86	145.35	145.29	78.37	76.41
Yearling heifers	25.24	25.21	22.91	25.36	61.59	62.94	19.80	19.30
Other cattle	61.82	66.39	63.17	69.00	82.64	88.84	62.47	66.50
Total gross value of production 1/	408.89	411.40	300.11	314.88	577.56	581.79	428.48	428.86
Operating costs:								
Purchased cattle for backgrounding	43.82	43.29	55.64	58.05	97.70	97.40	42.45	41.39
Feed:								
Concentrates and other feed	22.71	24.46	20.33	20.81	8.71	9.12	20.28	21.20
Supplemental feed	10.91	11.21	3.27	3.31	2.33	2.61	12.82	14.20
Harvested forages	202.94	196.69	78.19	102.11	124.23	151.86	151.70	154.67
Cropland pasture	3.75	4.04	3.40	3.66	5.73	5.42	3.88	3.88
Private pasture	66.71	72.63	146.63	156.13	119.53	113.97	59.83	59.83
Public land	0.40	0.44	1.63	1.66	3.18	3.26	0.00	0.00
Total feed costs	307.42	309.47	253.45	287.68	263.71	286.24	248.51	253.78
Other:								
Veterinary and medicine	15.67	16.35	35.69	37.24	16.85	17.82	19.05	19.74
Bedding and litter	0.53	0.61	0.42	0.48	0.70	0.79	0.01	0.01
Marketing	6.69	7.01	4.55	4.96	6.08	6.44	5.48	5.68
Custom operations	26.15	27.18	56.30	57.93	25.59	27.06	19.90	20.62
Fuel, lube, and electricity	15.64	15.65	22.17	22.16	18.65	18.74	27.07	27.07
Repairs	25.04	26.09	18.73	19.97	18.03	19.28	21.43	22.20
Interest on operating inputs	12.92	7.51	13.85	8.05	13.91	8.08	9.79	5.69
Total operating costs	453.88	453.16	460.80	496.52	461.22	481.85	393.69	396.18
Allocated overhead:								
Hired labor	3.08	3.30	16.91	17.46	1.52	1.53	0.39	0.43
Opportunity cost of unpaid labor	153.37	156.31	277.63	291.38	401.10	420.34	537.57	556.30
Capital recovery cost of machinery &equipment 2/	166.78	187.69	72.35	75.86	63.09	69.53	151.58	190.55
Opportunity cost of land	2.32	2.34	1.39	1.03	1.95	1.56	2.42	2.40
Taxes and insurance	32.15	32.54	31.17	31.57	30.70	31.18	26.07	26.39
General farm overhead	51.99	53.75	51.97	53.61	52.89	54.77	52.56	54.25
Total allocated overhead	409.69	435.93	451.42	470.91	551.25	578.91	770.59	830.32
Total costs listed	863.57	889.09	912.22	967.43	1,012.47	1,060.76	1,164.28	1226.50
Value of production less total costs listed	-454.68	-477.69	-612.11	-652.55	-434.91	-478.97	-735.80	-797.64
Value of production less operating costs	-44.99	-41.76	-160.69	-181.64	116.34	99.94	34.79	32.68
Supporting information:								
Bred cows (head) 3/	50	50	138	138	170	170	53	53
Calves weaned (head) 3/	38	38	113	113	152	152	44	44
Calving season (percent of ranches) 3/								
One	19	19	46	46	81	81	22	22
Two	23	23	3	3	6	6	14	14
None set	58	58	51	51	13	13	64	64
Cost of homegrown harvested forages (percent of total cost) 3/ 4/	87	87	55	55	69	69	82	82
Cost of pasture owned:								
Private pasture (percent of total cost) 3/ 5/	87	87	80	80	60	60	87	87
Cropland pasture (percent of total cost) 3/ 5/	96	96	83	83	81	81	75	75

1/ Includes marketing costs below to avoid double counting. Market prices used to update the gross value of production are net of marketing costs.

2/ Machinery and equipment, and housing, manure handling, and feed storage structures, and breeding herd.

3/ Developed from survey base year, 1996.

4/ Percent of total harvested forage cost from charge on homegrown forages.

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