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Agricultural Income and Finance Outlook

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Contents

Led by record crop and livestock production expected for 2007, U.S. net farm income is forecast to reach $87.5 billion, up $28.5 billion from 2006 and exceeding the 2004 all-time high. The anticipated rise in net farm income occurs as large increases in the value of crop and livestock production are expected to more than offset a decline in direct government payments and record-high farm production expenses.

U.S. agriculture's net value added is expected to increase to $136.2 billion in 2007. Family farms—where the majority of the farm business is owned by the operator and individuals related to the operator—are expected to contribute over 80 percent of U.S. agriculture's net value added in 2007. Crop farms—where at least 50 percent of the value of the farm's production from crops and livestock is derived from crops—are expected to account for over 60 percent of agriculture's net value added in 2007. Livestock farms are expected to account for the remainder.

This large boost is primarily the result of the increased demand for biofuels and agricultural exports, which has increased farm prices for corn, soybeans, milk, and other farm commodities. The value of crop production is expected to increase by $30.5 billion in 2007, the largest annual increase since 1984. The value of livestock production is expected to increase almost $20 billion.

Direct government payments in 2007 are expected to decline by $3.7 billion from 2006. Farm production expenses are forecast to rise to a record-level $254.2 billion in 2007. Fuel price increases in 2007 are expected to be lower than the previous 4 years of consecutive double-digit annual percentage increases.

Average net cash income for U.S. farm businesses is projected to be $66,100 in 2007. This represents a 21-percent increase from 2006 and would be 23 percent higher than its most recent 5-year average.

Farm sector equity is expected to continue rising in 2007 as the anticipated increase in farm asset value exceeds the rise in the value of farm debt. U.S. farm sector net worth is expected to exceed $2.0 trillion in 2007, up from $1.8 trillion in 2006.

The average household income (from farm and off-farm sources) of principal U.S. farm operators is projected to be up 7.7 percent in 2007, to $83,622. About 13 percent of the average farm operator household income is expected to come from farm sources in 2007. Income from farm sources increased by more than 30 percent in 2006-07, in contrast to a more moderate 5-percent increase in off-farm income.

For every year since 1996, average income of farm households has exceeded average U.S. household income. In fact, just the off-farm income component of average farm operator household income has exceeded the average U.S. household income from all sources since 1998. For the 15 major agricultural States where data are available, the average income of farm operator households in 2006 exceeded the average income of all households in those States. In addition, farm households have significantly more net worth than the average U.S. household.

Trends in averages mask a great deal of diversity in the financial position of U.S. farm operator households. The size of the farm operation, the commodities being produced, and the importance of off-farm sources of income all influence the level of farm household income and net worth, and how much it is growing or declining.

Farm Income Outlook

Net farm income and value added to U.S. economy forecast to achieve record levels in 2007

Net farm income at $87.5 billion is forecast to be up 48 percent in 2007, exceeding its previous high of $85.9 billion set in 2004. Net cash income at $85.7 billion is forecast to be slightly below its prior record level of $85.8 billion in 2005 (table 1). Net value added is expected to increase by almost $32 billion in 2007 (fig.1 and see box, "Defining the Key Terms"). Much of these increases has been the result of the anticipated increase in the values of both crop and livestock production, which are forecast to be at record levels in 2007 (table 2). Both measures have trended steadily upward since 1970 and have been roughly equal over this period (fig. 2).

Net farm income has followed the value of commodity production over the long term and in year-to-year fluctuations (fig. 3). Because farmers typically do not vary their production mix dramatically from year to year, production costs tend to be comparatively stable. The direction and magnitude in year-to-year change in value of livestock production arises primarily from changes in livestock market prices. The variability in the value of crop production is determined by variability in market prices and production levels. The volatility in crop production derives mainly from unanticipated, weather-induced variability in yields.

The income earned from production activities in the farm sector, as measured in net value added, is distributed among stakeholders (net rent, hired labor

Table 1
Income statement for U.S farm sector, 2005-07

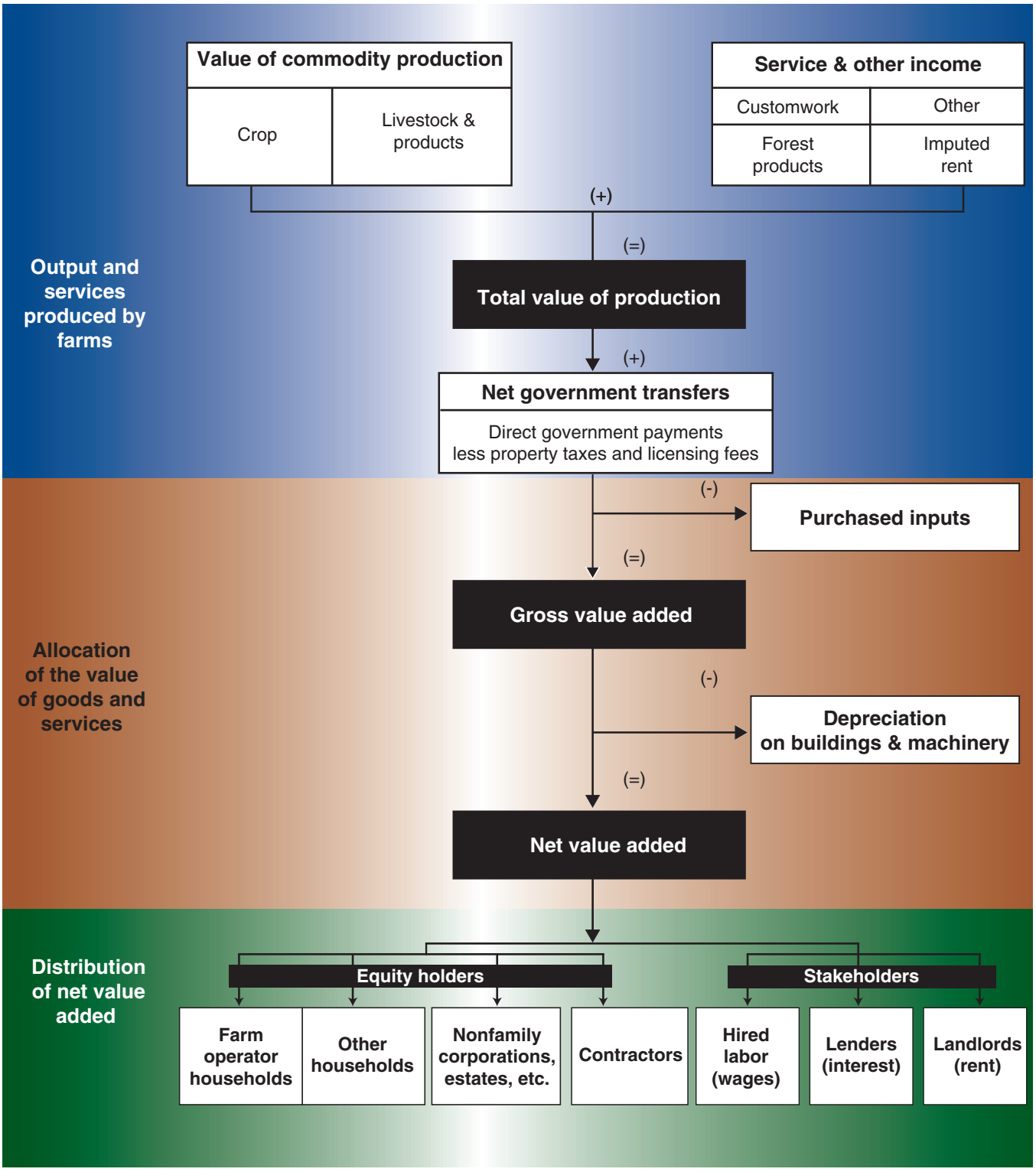
	2005	2006	2007
		$ billion	
Cash income statement:			
1. Cash receipts	240.7	239.3	282.2
Crops	115.9	120.0	142.6
Livestock	124.9	119.3	139.6
2. Direct government payments	24.4	15.8	12.1
3. Farm-related income	16.2	17.5	17.8
4. Gross cash income (1+2+3)	281.3	272.5	312.1
5. Cash expenses	195.5	204.7	226.4
6. NET CASH INCOME (4-5)	85.8	67.9	85.7
Farm income statement:			
7. Gross cash income (1+2+3)	281.3	272.5	312.1
8. Nonmoney income	19.3	20.5	23.9
9. Inventory adjustment	-1.1	-1.6	5.8
10. Gross farm income (7+8+9)	299.6	291.5	341.7
11. Total expenses	222.5	232.5	254.2
12. NET FARM INCOME (10-11)	77.1	59.0	87.5

Note: 2007 forecast.

Sources: USDA, ERS.

Figure 1

Components of value added among sources and earners



Defining the Key Terms

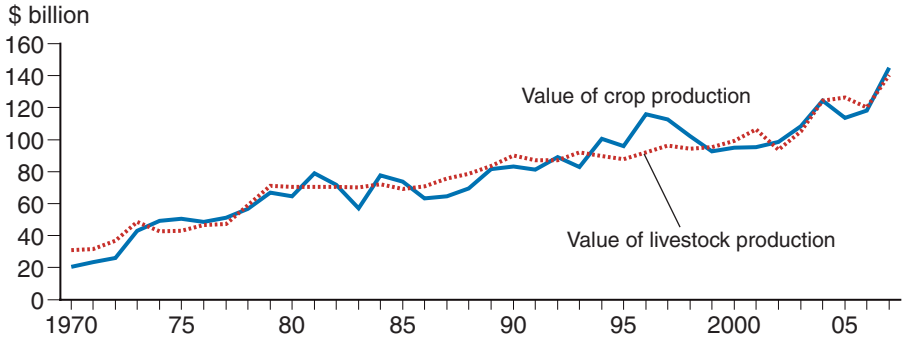
Net value added is a measure of U.S. agriculture's contribution to the U.S. economy's production of goods and services created in a particular year. It is derived as the total value of agricultural sector production within the calendar year less the related annual costs of production plus net government transactions. U.S. agriculture's net value added is distributed to its equity holders (farm operators, their business partners, and contractors) and its stakeholders (lenders, nonoperator landlords, and hired labor).

Net farm income is the residual portion of net value added after paying the owners of factors of production (land, labor, capital) for which payment is determined in advance of production and marketing activities. The residual is the income accruing to those entrepreneurs providing factors of production for which the earnings are determined by assuming and managing the risks of production and marketing.

Net cash income is computed in the same manner as net farm income, but excludes the noncash components, of which the two largest are imputed rental value of operators' dwellings and capital consumption. It is a measure of the farm income available to pay debts and household living expenses.

Figure 2

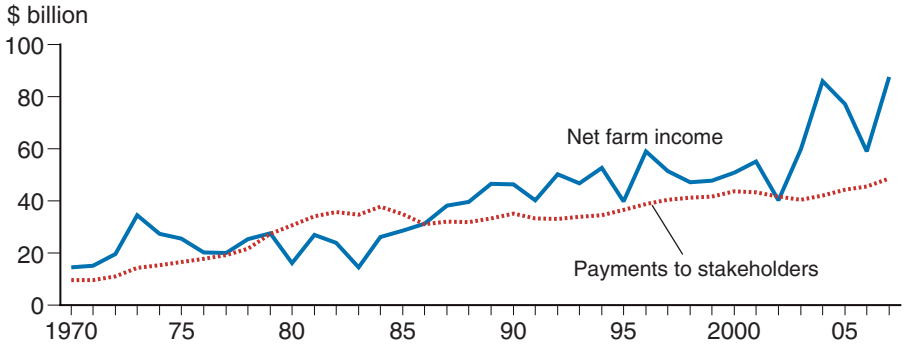
Value of crop production and livestock production, 1970-2007



Note: 2007 forecast.
Source: USDA, ERS.

Figure 3

Payments to stakeholders and net farm income, 1970-2007



Note: 2007 forecast.
Source: USDA, ERS.

Table 2

Value added to the U.S. economy by the agricultural sector via the production of goods and services, 2003-07

Item		2003	2004	2005	2006	2007	Change 2006-07	1997-2006 average
				$ billion			*Percent change*	
	Value of crop production	108.5	124.5	113.6	118.0	148.5	30.5	106.0
	Food grains	8.0	8.9	8.6	9.1	12.2	3.1	8.0
	Feed crops	24.7	27.4	24.6	28.0	41.2	13.3	24.0
	Cotton	6.4	4.8	6.3	6.2	5.9	-0.3	5.1
	Oil crops	18.0	17.9	18.4	18.2	22.6	4.4	16.5
	Tobacco	1.6	1.6	1.1	1.2	1.3	0.1	1.9
	Fruits and tree nuts	13.5	15.5	17.7	17.0	16.2	-0.8	13.8
	Vegetables	16.9	16.2	16.9	17.9	20.0	2.0	16.1
	All other crops	20.8	21.5	22.3	22.4	23.2	0.8	19.8
	Home consumption	0.1	0.1	0.1	0.1	0.1	0.0	0.2
	Value of inventory adjustment	1.6	10.7	-2.4	-2.0	5.7	7.8	0.7
	Value of livestock production	105.0	124.4	126.4	120.1	140.0	19.9	106.1
	Meat animals	56.2	62.4	64.8	63.7	65.3	1.6	54.0
	Dairy products	21.2	27.4	26.7	23.4	35.2	11.8	23.3
	Poultry and eggs	24.0	29.5	28.9	27.5	34.6	7.1	24.6
	Miscellaneous livestock	4.2	4.4	4.5	4.7	4.5	-0.2	4.1
	Home consumption	0.1	0.2	0.3	0.3	0.4	0.1	0.2
	Value of inventory adjustment	0.8	0.6	1.3	0.5	0.1	-0.4	-0.1
	Revenues from services and forestry	30.0	34.1	35.2	37.6	41.2	3.6	29.1
	Machine hire and customwork	3.0	3.4	2.8	2.7	2.9	0.2	2.5
	Forest products sold	2.2	2.4	2.5	2.5	2.5	0.0	2.6
	Other farm income	10.5	11.3	10.9	12.3	12.4	0.1	10.0
	Gross imputed rental value of farm dwellings	14.3	17.0	19.0	20.1	23.4	3.2	14.0
	Value of agricultural sector production	243.5	283.0	275.2	275.7	329.6	53.9	241.2
less:	Purchased inputs	131.1	137.5	144.6	151.4	169.3	17.9	129.2
	Farm origin	53.7	57.5	56.9	59.8	68.6	8.8	50.9
	Feed purchased	27.5	29.7	28.0	30.5	37.4	6.9	26.6
	Livestock and poultry purchased	16.7	18.2	18.4	18.2	18.6	0.4	15.7
	Seed purchased	9.4	9.6	10.4	11.0	12.6	1.5	8.6
	Manufactured inputs	28.7	31.6	35.4	37.0	41.1	4.1	30.4
	Fertilizers and lime	10.0	11.4	12.8	13.3	15.9	2.6	10.9
	Pesticides	8.4	8.6	8.8	8.8	9.0	0.2	8.7
	Petroleum fuel and oils	6.8	8.2	10.3	11.1	12.2	1.1	7.5
	Electricity	3.5	3.4	3.5	3.7	3.9	0.2	3.3
	Other purchased inputs	48.7	48.3	52.3	54.7	59.6	5.0	47.8
	Repair and maintenance of capital items	10.7	11.9	11.9	12.4	13.4	1.0	11.1
	Machine hire and customwork	3.5	3.6	3.5	3.5	3.7	0.3	3.9
	Marketing, storage, and transportation expenses	7.3	7.2	8.8	9.0	10.0	1.0	7.6
	Contract labor	3.3	3.1	3.1	3.1	3.2	0.1	2.8
	Miscellaneous expenses	23.9	22.4	25.1	26.8	29.3	2.6	22.3

——Continued

Table 2

Value added to the U.S. economy by the agricultural sector via the production of goods and services, 2003-07—Continued

Item		2003	2004	2005	2006	2007	Change 2006-07	1997-2006 average
		——— *$ billion* ———					*Percent change*	
plus:	Net government transactions	9.2	5.4	15.8	6.2	2.0	-4.2	9.3
+	Direct government payments	16.5	13.0	24.4	15.8	12.1	-3.7	16.9
-	Motor vehicle registration and licensing fees	0.5	0.5	0.6	0.5	0.6	0.0	0.5
-	Property taxes	6.8	7.0	8.0	9.0	9.5	0.5	7.2
	Gross value added	121.5	151.0	146.4	130.5	162.3	31.8	121.3
less:	Capital consumption	21.5	23.1	25.0	26.1	26.2	0.0	21.6
	Net value added	100.0	127.8	121.4	104.4	136.2	31.8	99.7
less:	Payments to stakeholders	40.4	41.9	44.3	45.4	48.6	3.3	42.3
	Employee compensation (total hired labor)	18.7	20.4	20.7	21.3	22.8	1.5	18.7
	Net rent received by nonoperator landlords	10.2	10.0	10.6	9.3	10.2	0.9	10.5
	Real estate and nonreal estate interest	11.5	11.4	13.0	14.7	15.6	0.9	13.2
	Net farm income	59.7	85.9	77.1	59.0	87.5	28.5	57.4

Note: 2007 forecast. For explanation of terms see footnotes and glossary at http://www.ers.usda.gov/Data/FarmIncome/Finfidmu.htm

Sources: USDA, ERS.

compensation, and interest) and producers for their contributions of land, labor, capital, and management acumen. The incomes earned by stakeholders are agreed upon in advance of their contribution to the production activity. Consequently, stakeholders are not subject to the vagaries of markets and production. Equity holders bear the inherent risks of both their own production and the prices generated by global markets. As such, equity holders bear the brunt of losses when production and prices decline and reap the gains in years when price and production are above average. The relative lack of variability in stakeholder earnings, in contrast to those of equity holders, can be observed by comparing the smaller fluctuations in the payments-to-stakeholders' line in contrast to the larger fluctuations of the net-farm-income line in figure 3.

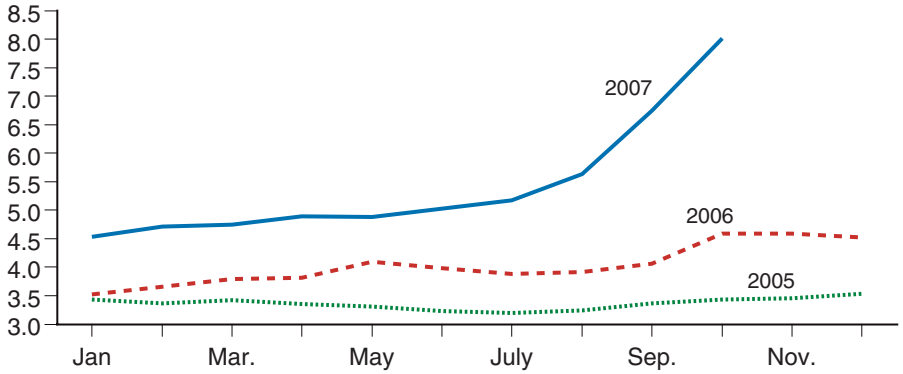
In general, 2007 is proving to be a very good year for most U.S. producers of agricultural commodities, both crops and livestock. The boost in 2007 U.S. farm income is primarily the result of high commodity prices. Prices for a number of major commodities have not only been high throughout the year, but some commodities experienced unanticipated rises to unexpected levels, with wheat, soybeans and milk being prime examples (figs. 4–9). The higher prices available to U.S. farmers are principally due to strong demand from the domestic biofuels industry and from exports. U.S. farmers have a lot to sell at high prices.

The rising use of some major crops in biofuel production has increased the demand for these commodities and contributes to upward pressure on feed grain prices. Corn is the primarily beneficiary of the increased production of biofuels. Soybeans are used in the production of biodiesel. Inadequate rainfall in competitor countries that produce similar commodities combined with increased international consumption are resulting in low worldwide supplies and inventories in 2007. In addition, global wheat consumption has

Figure 4

Monthly wheat prices, 2005-07

$ per bushel

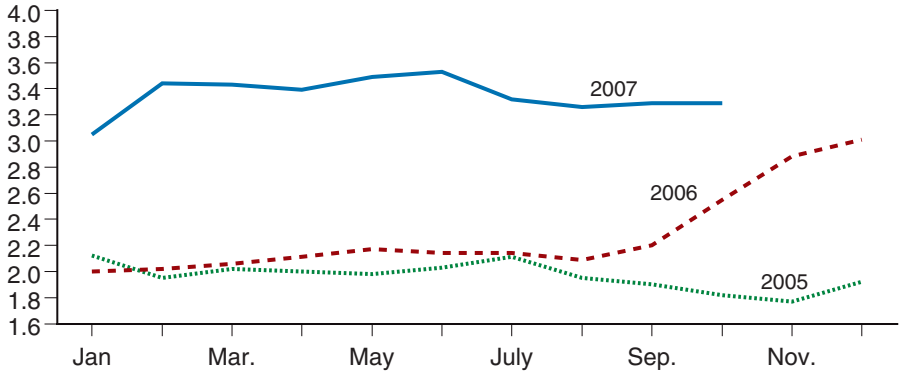


Source: USDA, National Agricultural Statistics Service.

Figure 5

Monthly corn prices, 2005-07

$ per bushel

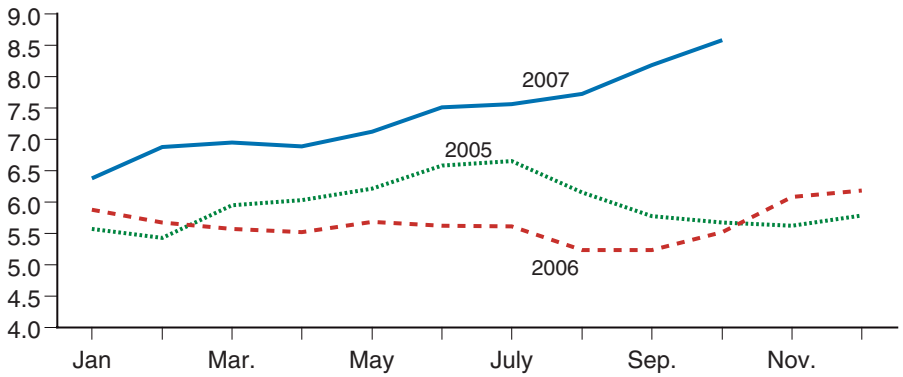


Source: USDA, National Agricultural Statistics Service.

Figure 6

Monthly soybean prices, 2005-07

$ per bushel

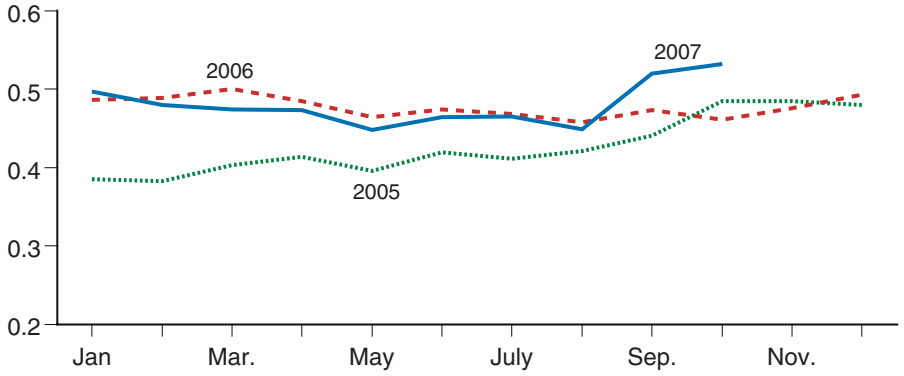


Source: USDA, National Agricultural Statistics Service.

Figure 7

Monthly upland cotton prices, 2005-07

Cents per pound

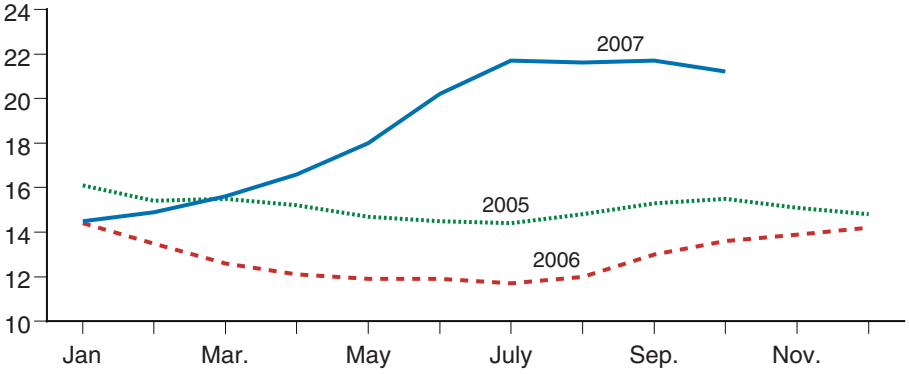


Source: USDA, National Agricultural Statistics Service.

Figure 8

Monthly milk prices, 2005-07

$ per cwt

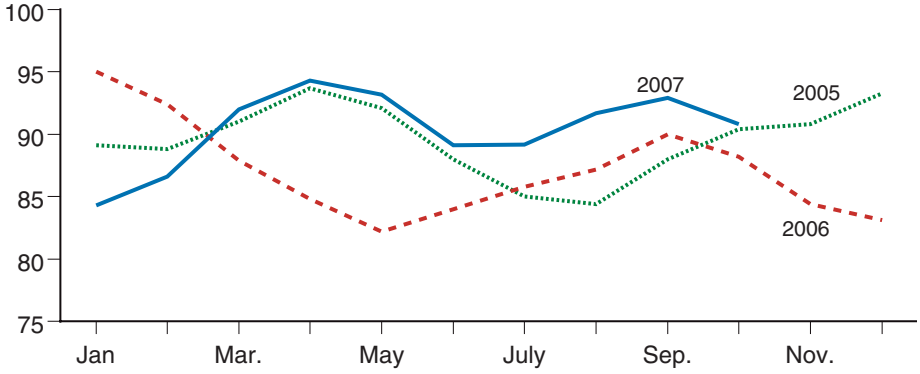


Source: USDA, National Agricultural Statistics Service.

Figure 9

Monthly beef cattle prices, 2005-07

$ per cwt



Source: USDA, National Agricultural Statistics Service.

exceeded production in recent years resulting from growth in world population and incomes.

As a result, the combination of reduced supplies and higher incomes in developing countries with large populations is translating into rising demand for farm commodities, regardless of where they are produced. In addition, the US dollar has depreciated by 25 percent or more against major foreign currencies since 2002, further increasing demand for U.S. exports and boosting farm-level prices.

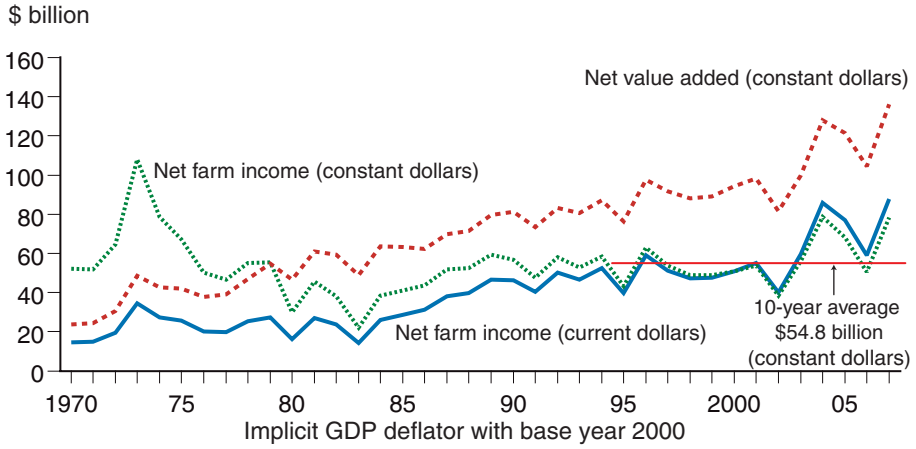
Continuing a Period of Sustained Income and Value Added for U.S. Agriculture

Since 2004, this has been a period of exceptional earnings for U.S. agriculture (fig. 10). The value of crop and livestock production has established new highs, with livestock establishing record levels of annual output in 3 of the 4 years. Net value added to the U.S. economy also established two record annual highs. Net farm income and net cash income have also established multiple record highs during the 2004-07 timeframe. The early 1970s as well as late 1980s were roughly comparable periods when U.S. farming established multiple years of sustained high levels of output and income.

Even on an inflation-adjusted basis, 2007 is expected to be an exceptional if not record-breaking year (see box, "Adjusting for Inflation using Constant Dollars"). With income expressed in constant dollars, farming's net value added in 2007 trails only 2004 as the largest economic contribution since 1974. Net farm income mirrors net value added with 2007 income in constant dollars, trailing only 2004 as the largest amount of net income earned in the last three-plus decades. Both current and constant dollar measures of income underscore that the recent 4 years through 2007 have been a time of large output and earnings.

Figure 10

Farm sector net income in 2007 above 10-year average in constant dollars



Note: 2007 forecast.

Source: USDA, ERS.

Adjusting for Inflation Using Constant Dollars

"Current dollars," "nominal dollars," or simply "dollars" are terms used to describe any time series where the actual number of dollars generated each year is used in the table or figure. In order to determine whether the recipients of those dollars received over time are better or worse off, economists adjust the nominal or current dollar series by holding constant the average price of goods and services purchased with those dollars over time. Dollars where the average price of goods and services purchased is held constant over time are referred to as "constant dollars," "real dollars," or "inflation-adjusted dollars." When inflation-adjusted net value added, net farm income, and payments to stakeholders increase or decrease over time, farm equity holders' and stakeholders' ability to buy goods and services has increased or decreased as well.

In order to convert net value added, net farm income, payments to stakeholders and other economic time series to inflation-adjusted or a constant-dollar series, we use the GDP chain-type price index developed by the Bureau of Economic Analysis of the U.S. Department of Commerce. By using the year 2000 as our base year, we are treating every year in that time series as if the average price for all goods and services in that year (e.g., 1970 or 2007) is the same as the average price for all goods and services in 2000.

Family Farms' Share of Net Value Added Expected To Increase in 2007

Equity holders, who are the farm operation's owners, are composed of family farm operators, their business partners, nonfamily farm operators, and contractors. Contractors are processors, elevators, and retailers who use both production and marketing contracts with farm operations to obtain agricultural products with specific, desired attributes. Farm-sector data in figure 10 shows how net farm income tends to rise and fall with agriculture's net value added, reflecting equity holders' status as residual claimants. Farm-level data is used in table 3 to show how the net value added expected in 2007 is expected to be distributed among agriculture's equity holders and stakeholders (see box, Measuring Agriculture's Value Added: Farm-Level and Sector Approaches).

Stakeholders' share of net value added moves inversely to annual changes in equity holders' share. This is because stakeholder payments are less reliant on changes in the value of farm output. All three stakeholder groups are expected to see their 2007 shares of agriculture's net value added decline from 2006.

Two resource regions, the Fruitful Rim and the Heartland, are expected to account for more than half of U.S. agriculture's net value added in 2007 (fig. 11) despite having only 31.4 percent of the nation's farm operations in 2006 (table 4). While these 2 regions are ranked as the top 2 in value of livestock production, it is in crops where they dominate with almost 64 percent of the U.S. value of production. These 2 regions are expected to account for almost 57 percent of U.S. agriculture's stakeholder payments and 53.1 percent of net farm income in 2007.

Measuring Agriculture's Value Added: Farm-Level and Sector Approaches

The USDA measures U.S. agriculture's value added using two approaches: the farm sector and the farm-level approaches.

The farm-level approach relies almost entirely on data obtained from USDA's survey of individual farm-level operations, the Agricultural Resource Management Survey (ARMS). The advantage of the farm-level approach is that it allows a separation and measurement of the shares of value added by different classes of equity holders, different geographic and resource regions, various farm sales classes, farm sizes, or farm types of production. Value added measures based on farm-level data are indicated by "Source: USDA, Agricultural Resource Management Survey" below the table or figure. ARMS does not include Alaska and Hawaii in its survey.

The farm sector approach uses a mix of both farm-level as well as other data sources. These other data sources do not identify and distinguish among the individual farms that generated that data. Value added measures based on the sector approach are indicated by noting "Source: USDA, ERS" below the table or figure. The sector approach relies on data for all 50 U.S. States.

Table 3
Distribution of net value added among resource owners, 2002-07

	2002	2003	2004	2005	2006	2007
			Percent			
Stakeholders	54.4	41.1	34.3	34.5	44.3	36.0
. Hired labor	26.9	19.8	16.5	17.5	21.9	17.8
. Lenders	15.0	10.9	7.9	8.4	11.3	9.0
. Nonoperator landlords	12.5	10.4	9.9	8.6	11.1	9.2
Equity holders	45.6	58.9	65.7	65.5	55.7	64.0
. Family farm operators	30.6	46.4	45.3	43.8	34.4	39.6
. Nonfamily farm operators	3.6	4.7	7.3	8.0	9.3	10.6
. Contractors	11.4	7.8	13.2	13.6	12.0	13.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

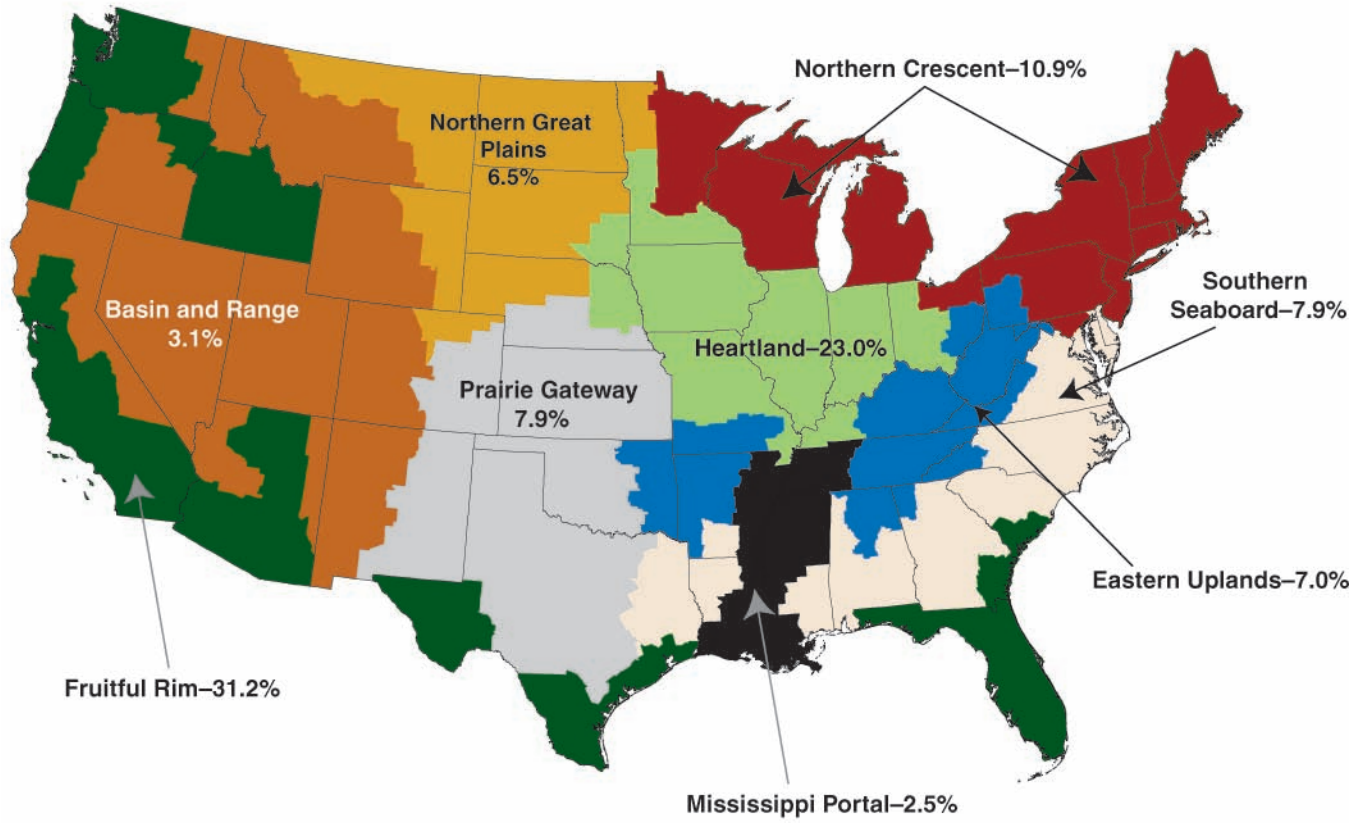
Note: 2007 forecast.

Source: USDA, Agricultural Resource Management Survey.

Farm operations specializing in crops accounted for less than half of all farms in 2006 (table 5). However, farms specializing in crops in 2007 are expected to account for over 60 percent of U.S. agriculture's net value added (fig. 12). This can be explained in part by the large shift to corn production by farmers and the higher corn and other crop prices expected in 2007. However, high-value crop farms are expected to account for the largest share of overall value of crop production. Crop farms account for almost 95 percent of value of U.S. crop production whereas livestock farms account for just over 95 percent of value of U.S. livestock production. Crop farms are expected to account for two-thirds of U.S. payments to stakeholders and 58 percent of U.S. net farm income.

Figure 11

Distribution of U.S. net value added by farm resource region, 2007



Note: 2007 forecast.

Source: USDA, Agricultural Resource Management Survey.

Table 4

Shares of U.S. value of production (VOP), stakeholder payments, and net farm income by ERS Resource Region, 2007

Region	Farms in 2006	Crop VOP	Livestock VOP	Stakeholder payments	Equity holder net income
			Percent		
Heartland	20.3	26.1	19.0	23.0	23.1
Northern Crescent	13.5	9.1	11.5	10.9	10.9
Northern Great Plains	4.8	5.6	7.5	5.9	6.8
Prairie Gateway	14.0	7.7	15.1	10.2	6.7
Eastern Uplands	16.1	2.0	11.0	3.6	8.8
Southern Seaboard	10.5	4.8	14.1	5.9	8.5
Fruitful Rim	11.1	37.8	17.1	33.9	30.0
Basin & Range	4.7	2.5	3.3	3.4	3.0
Mississippi Portal	5.0	4.4	1.4	3.2	2.2
Total	100.0	100.0	100.0	100.0	100.0

Notes: 2007 percentages are USDA forecasts while the percent of farms is based on 2006 data. See figure 11 for description of ERS Resource Regions.

Source: USDA, Agricultural Resource Management Survey.

Table 5

Shares of U.S. value of production (VOP), stakeholder payments, and net farm income by production specialty, 2007

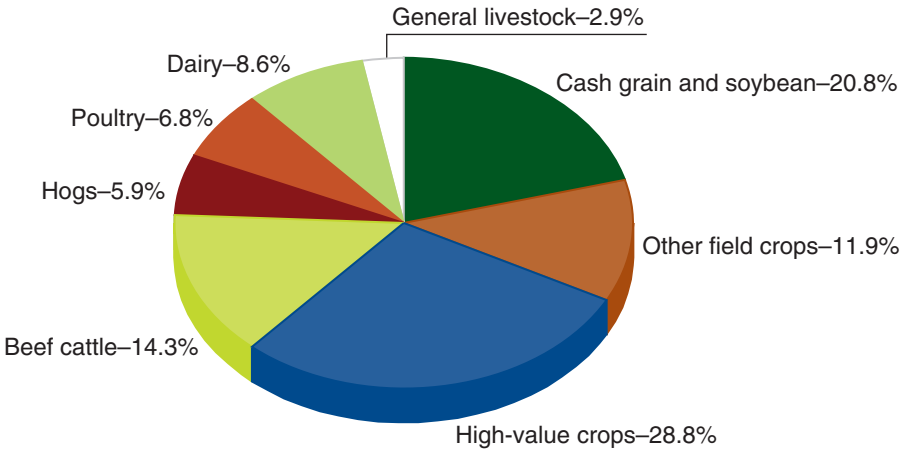
Type of production	Farms in 2006	Crop VOP	Livestock VOP	Stakeholder payments	Equity holder net income
			Percent		
Crops farms	43.6	94.7	4.4	68.0	57.7
Cash grain and soybean	12.9	37.7	2.7	26.6	17.5
Other field crops	24.8	16.3	1.5	11.8	11.9
High-value crops	5.9	40.7	0.2	29.6	28.3
Livestock farms	56.4	5.3	95.6	32.0	42.3
Beef cattle	33.9	2.4	38.8	13.3	14.9
Hogs	0.9	1.1	11.0	2.1	8.1
Poultry	1.7	0.3	18.5	2.2	9.4
Dairy	2.8	0.9	23.0	10.1	7.8
General livestock	17.1	0.6	4.3	4.3	2.1
Total	100.0	100.0	100.0	100.0	100.0

Notes: 2007 percentages are USDA forecasts while the percent of farms is based on 2006 data.

Source: USDA, Agricultural Resource Management Survey.

Figure 12

Distribution of U.S. net value added by farm production specialty, 2007



Note: 2007 forecast.

Source: USDA, Agricultural Resource Management Survey.

Family farms, which made up over 97 percent of all farms in 2006 (table 6), are expected to account for over 80 percent of farm net value added in 2007 (fig. 13). (See box, "Farm Types, 2006.) Commercial family farms were expected to contribute over half of all of U.S. agriculture's net value added. While rural residential farms made up more than 6 out of every 10 U.S. farm operations in 2006, they are expected to account for less than 10 percent of U.S. net value added in 2007. Family farms are expected to account for over 80 percent of crop and livestock value of production and about 80 percent of U.S. payments to stakeholders and net farm income.

Farm operations with $1 million or more in gross sales are few in number yet are expected to be the source almost half of U.S. agriculture's net value

Farm Types, 2006

Small family farms (gross sales less than $250,000)[1]

Retirement farms. Small farms whose operators report they are retired.

Residential/lifestyle farms. Small farms whose operators report a major occupation other than farming.

Farming-occupation farms. Small family farms whose operators report farming as their major occupation.

- **Low-sales farms.** Gross sales less than $100,000.
- **High-sales farms.** Gross sales between $100,000 and $249,999.

Commercial family farms (gross sales of $250,000 or more)

Large family farms. Gross sales between $250,000 and $499,999.

Very large family farms. Gross sales of $500,000 or more.

Nonfamily farms

Nonfamily farms. Any farm where the operator and persons related to the operator do not own a majority of the business. Also includes farms organized as estates, trusts, cooperatives, and grazing associations. Nonfamily farms are regarded as commercial farms if gross sales are at least $250,000.

Note: This farm classification focuses on the "family farm," or any farm where the majority of the business is owned by the operator and individuals related to the operator by blood, marriage, or adoption. In 2006, about 97 percent of all farms were family farms. The farm operator is the person who makes the day-to-day management decisions. Farming is regarded as the operator's major occupation if the majority of his or her work time is spent on farm activities.

[1]The National Commission on Small Farms selected $250,000 in gross sales as the cutoff between small and large-scale farms.

Source: USDA, ERS. *Structure and Finances of U.S. Family Farms: Family Farm Report, 2007 edition*, EIB-24.

Table 6

Shares of U.S. value of production (VOP), stakeholder payments, and net farm income by farm typologies, 2007

Farm typology	Farms in 2006	Crop VOP	Livestock VOP	Stakeholder payments	Equity holder net income
			Percent		
Rural residence family	62.0	6.3	7.0	9.2	7.7
Retirement	19.2	1.6	1.5	1.5	1.9
Residential/lifestyle	42.8	4.7	5.5	7.7	5.8
Intermediate family	26.0	16.4	12.9	15.3	13.7
Farming occupation					
Low sales	20.1	5.4	5.5	5.8	5.6
High sales	5.9	11.0	7.4	9.5	8.1
Commercial family	7.5	58.2	61.7	56.9	58.2
Large	4.1	15.5	11.3	14.0	12.0
Very large	3.4	42.7	50.4	42.9	46.2
Family farms	95.5	80.9	81.6	81.4	79.6
Nonfamily	4.5	19.1	18.4	18.6	20.4
Total	100.0	100.0	100.0	100.0	100.0

Notes: 2007 percentages are USDA forecasts while the percent of farms is based on 2006 data.

Source: USDA, Agricultural Resource Management Survey.

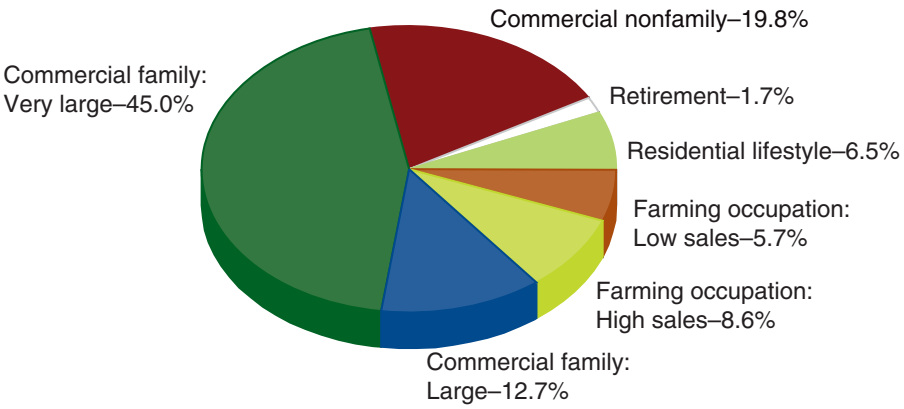
added in 2007 (table 7). While these farm operations represented less than 2 percent of farm operations in 2006, they are expected to account for more than half of U.S. livestock value of production and almost 43 percent of crop value of production in 2007. These large farms are expected to make over 43 percent of U.S. stakeholder payments and earn over half of U.S. net farm income.

Value of U.S. Crop Production Is at an All-Time High

The value of crop production is forecast to be up by more than $30 billion in 2007, the largest increase since 1984. For most field crops, *2007 cash receipts* are forecast to be at record highs. Receipts from corn and soybeans, the top two crops in receipts, are both expected to be up, with corn receipts nearly reaching $33 billion and soybeans reaching $21 billion. Cash receipts for wheat and rice are expected to rise to all-time highs of $10 billion and $2 billion. Cash receipts for vegetables are expected to increase by over

Figure 13

Distribution of U.S. net value added by farm typologies, 2007



Note: 2007 forecast.

Source: USDA, Agricultural Resource Management Survey.

Table 7

Shares of net value added (NVA), value of production (VOP), net farm income, and stakeholder payments by sales class, 2007

Sales class	Farms in 2006	NVA	Crop VOP	Livestock VOP	Stakeholder payments	Equity holder net income
				Percent		
$1 million and above	1.7	47.8	42.8	54.5	43.2	50.4
$500,000 - $999,999	2.2	13.0	15.8	12.6	14.8	12.0
$250,000 - $499,999	4.3	13.6	16.6	12.1	15.1	12.7
$100,000 - $249,999	7.9	11.2	14.0	9.9	12.4	10.5
Below $100,000	83.9	14.4	10.8	10.9	14.5	14.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

Notes: 2007 percentages are USDA forecasts while the percent of farms is based on 2006 data.

Source: USDA, Agricultural Resource Management Survey.

$2 billion. Cash receipts for cotton and for fruits and nuts are expected to decline in 2007, with fruits and nuts down by $800 million.

Cash receipts for corn have benefited from the higher farm gate price in 2007, up over a dollar per bushel from 2006 to around $3.40. Rising corn prices are the result of a combination of continual food and feed demand and expanding ethanol demand. Ethanol refineries in the United States have the capacity to produce more than 7 billion gallons per year and by early 2010, may add an additional 6.5 billion gallons in capacity through new construction and expansion of existing facilities. The forecast for corn exports in crop year 2007 is for a rise of about 11 percent from last year. An estimated 93.6 million acres of corn was planted in 2007, the largest area planted to corn in over 60 years. Favorable weather conditions in the major corn-producing States combined with higher acreage will result in a new record for production of 13.2 billion bushels, up 2.7 billion bushels from 2006.

Cash receipts for soybeans are expected to rise by more than $4 billion in 2007, reflecting strong market sales in the early months of 2007 from the record 2006 harvest (3.2 billion bushels) and high prices in the latter months of 2007. Pressure to expand corn acreage in 2007 lowered planted acreage for soybeans by almost 12 million acres (16 percent) from 2006. The strong demand for soy oil to produce biodiesel has nearly doubled since 2005. Soybean prices are closing in on $9.00 per bushel, an increase over $ 3.00 per bushel compared to the same time last year.

Wheat cash receipts are expected to rise by almost $3 billion in 2007. Wheat prices, which started to rise in late 2006 are expected to average a record of nearly $5.70 per bushel in 2007. A critical factor influencing wheat price is that this year's domestic ending stocks could be the lowest since 1948-49. Even with these high prices, U.S. wheat exports are forecast to rise by nearly 27 percent in 2007 with a number of importers removing import restrictions and/or subsidizing consumption, and also benefiting from a corresponding fall in the dollar exchange rate. Global wheat production in 2007 is projected to lag behind world demand due to freezes and untimely rains in the U.S. Plains, planting delays and a hot summer in Canada, drought in Australia, rains in the West EU, and drought in the East EU, Russia and the Ukraine. As a result, global ending stocks in 2007 are expected to fall to their lowest level since 1975-76.

Blossoming issues in 2006 and frost in the spring of 2007 have resulted in reduced sales of U.S. apples. Similarly, blossoming issues in 2006 reduced sales of U.S. oranges and lemons. These reduced sales combined with steady aggregate prices for fruits and nuts caused expected 2007 cash receipts for fruits and nuts to drop to a little over $16 billion, down 14 percent from 2006.

In mid-January 2007, temperatures plummeted to below freezing in some parts of California, damaging newly planted strawberries, broccoli, carrots, and lettuce. Reduced supply raised prices particularly in the first half of 2007 and is projected to elevate cash receipts for vegetables to almost $20 billion in 2007, a record high.

Value of Livestock Production Exceeds $140 Billion for the First Time

The value of livestock production in 2007 is forecast to be a record $140 billion. Cash receipts from all livestock species are forecast to exceed the $100-billion mark for the fifth consecutive year and the previous record high by $15 billion.

Dairy producers' cash receipts are forecast to be the highest on record, approaching $35 billion and will record the largest annual increase (nearly $12 billion) of any commodity for 2007. Milk prices strengthened during the year and are forecast to be up almost 50 percent (around $6.00 per cwt). Tight world supplies of dairy products caused by drought in Australia and slow growth in milk production in the EU, together with a weak dollar and rising real incomes in Asia, especially China, are boosting U.S. dairy exports. These effects combined with robust demand for dairy products and low inventory levels in the major milk producing countries are pushing milk prices upward. In the face of rising demand, milk production is up 2 percent due to modest growth in production per cow and herd size.

Cash receipts for beef producers are expected to continue upward in 2007 by more than $1.2 billion and top $50 billion, a new high. Beef supplies in 2007 have been influenced by the continued above-normal cow slaughter due to poor forage conditions (particularly in the Southeast and Southwest) and high prices. Export demand strengthened in 2007 but less than anticipated because of Korea's import restrictions and Japan's age limits on imported beef. Domestic demand in 2007 is expected to slightly weaken from a slowing economy and high energy and wholesale prices.

Cash receipts for pork producers, which fell in 2006, are forecast to rebound to $14.5 billion, with prices remaining steady and production increasing for the seventh consecutive year. Domestic demand is expected to increase modestly, while pork exports are expected to remain steady in 2007, representing nearly 14 percent of production. A decline in exports to Mexico resulting from its weakening economy is offset by increases in exports to Japan and Canada due to the low-valued U.S. dollar, to Russia due to higher economic growth, and to Hong Kong and China due to reduced Chinese hog supplies resulting from an outbreak of swine disease.

Cash receipts for U.S. broilers are expected to rise by $4.3 billion to a record $23.1 billion in 2007. Broiler prices are forecast to rise more than 22 percent as a result of falling stock levels and increasing exports, mainly to Russia. U.S. egg producers could see a $2.4 billion gain in cash receipts with egg prices expected to rise nearly 53 percent in 2007. Egg price increases are the result of fewer eggs and a strong export market. Mexico and Hong Kong have increased their imports of U.S. eggs, and the EU is forecast to more than double its egg imports, due to the appreciation of the Euro relative to the U.S. dollar.

2007 Total Direct Payments Forecast at $12.1 Billion

Total direct payments by the U.S. government to U.S. farmers are expected to total $12.1 billion in 2007, down from the $15.8 billion paid out in 2006 (table 8). This would be nearly 26 percent below the previous 5-year average. Direct payments under the Direct and Countercyclical Program (DCP) in 2007 are forecast at $5.3 billion, less than a 5-percent increase from 2006. DCP rates are fixed in legislation and are not affected by the level of program crop prices or production. Since 2004, there has been little change in direct payments by crop year. The small fluctuations realized across calendar years are the result of changes in the number of farmers taking advantage of the optional advanced payment in December, affecting the share of the payment rolled into the following calendar year.

Countercyclical payments are forecast to decrease from $4.0 billion in 2006 to $1.2 billion in 2007. Only upland cotton and peanuts were expected to receive countercyclical payments in 2007. This is quite a change from previous years, when more than half the payments for 2004 and 2005 were to corn producers and a quarter of the payments were to cotton. Producers may elect to receive countercyclical payments in three installments. Countercyclical payments in calendar year 2007 include the second partial and final payments for 2006 crops and the first partial payment for 2007 crops.

Marketing loan benefits—including loan deficiency payments, marketing loan gains, and certificate exchange gains—are projected at $1 billion in 2007, down from $1.8 billion in 2006. In 2006, upland cotton producers and corn producers received 62 percent and 24 percent, respectively, of total marketing loan benefits. In 2007, upland cotton producers are likely to realize almost 99 percent of the total marketing loan benefits in 2007, of which 95 percent are certificate exchange gains. At current price levels, marketing loan benefits are either are not, or at most minimally, available to the other program crops.

Forecast at $950 million in 2007, Tobacco Transition Payment Program (TTPP) payments are expected to be 21 percent lower than in 2006. As in 2006, the number of quota holders and producers taking advantage of the lump-sum payment option is expected to decline in 2007. The Commodity Credit Corporation (CCC) is not authorized to make lump-sum payments, but a third party may. Payments reported here include the portion of the CCC payment that went to quota holders and producers, plus the lump-sum payments received by quota holders and producers that entered into agreement with third parties. However, the portion of the CCC payment that went to third parties is not included.

Conservation programs include all conservation programs operated by the Farm Service Agency (FSA) and theNatural Resources Conservation Service (NRCS) that provide direct payments to producers. Estimated conservation payments of $3.1 billion in 2007 reflect programs being brought up toward funding levels authorized by current legislation.

Ad hoc and emergency program payments are forecast at $500 million. Ad hoc and emergency program payments include all programs providing

Table 8
Direct government payments, 2002-07

Item	2002	2003	2004	2005	2006	2007	Change 2006-07	2007/ 2002-06 avg.[1]
				$ million			*Percent change*	
Total direct payments[1]	12,414.9	16,523.5	12,969.9	24,395.9	15,789.1	12,098.7	-23.4	-26.3
Production flexibility contract payments[2]	3,499.8	-280.0	-4.2	-0.9	-0.3	0.0	-100.0	-100.0
Direct payments[3]	367.1	6,703.6	5,242.4	5,198.8	5,052.0	5,262.4	4.2	16.6
Counter-cyclical payments[4]	203.4	2,300.7	1,122.0	4,073.8	4,035.9	1,184.8	-70.6	-49.5
Loan deficiency payments	1,196.7	576.4	2,865.1	5,080.3	730.6	67.5	-90.8	-96.8
Marketing loan gains[5]	459.7	198.2	131.2	368.7	188.3	6.4	-96.6	-97.6
Certificate exchange gains	1,178.6	556.4	475.7	1,614.0	873.3	932.6	6.8	-0.7
Peanut quota buyout payments	983.0	237.6	24.7	22.3	21.2	0.0	-100.0	-100.0
Milk income loss program payments	859.6	913.3	205.7	9.6	431.2	90.0	-79.1	-81.4
Tobacco Transition Payment Program[6]	0.0	0.0	0.0	2,083.1	1,206.3	950.0	-21.2	44.4
Conservation program payments[7]	1,965.8	2,167.3	2,319.6	2,767.5	2,974.3	3,100.0	4.2	27.1
Ad hoc and emergency program payments[8]	1,655.0	3,143.2	582.4	3,168.8	274.5	500.0	82.1	-71.7
Miscellaneous program payments[9]	46.1	6.8	5.4	9.9	1.7	5.0	194.1	-64.2

Note: 2007 forecast. Numbers may not add due to rounding.

[1]Includes only those funds paid directly to farmers within the calendar year.

[2]Enactment of the 2002 Farm Act terminated the authority for production flexibility contract payments.

[3]For 2007, this is the estimated direct payments to be received for 2007 crops less what the CCC reported as advanced payments for 2007 crops received in 2006. With no direct payments authorized for 2008 crops, 2007 forecast does not include advanced payments for 2008.

[4]The 2006 payment includes the 1st partial payment for 2006 crops. The rest of the 2006 crop counter-cyclical payments are to be received in 2007. The 2007 estimate also assumes that 60 percent of program participants receive 35 percent of the estimated 2007 crop counter-cyclical as first partial payments.

[5]In publications prior to May of 2001, marketing loan gains were included in cash receipts rather than in government payments in the farm sector income accounts.

[6]The estimates here include TTPP payments and lump-sum payments to quota holders and producers. The TTPP payments to private parties are not included.

[7]This category includes all conservation programs except for those considered as emergency assistance such as the Emergency Conservation Program.

[8]This category includes all programs providing disaster and emergency assistance payments to growers. The regulations for payment of 2007 disaster assistance have not been approved by OMB. So most of the payments will not be realized until calendar 2008.

[9]Miscellaneous programs and provisions vary from year to year. Included here are CCP—Fruit and Vegetable Violation, CCP—Late Fees, and CCP—Payment Limitation Over payments which could not be directly linked to either Direct or Counter-cyclical Program payments.

disaster and emergency assistance to farmers. The carryover of payments from 2006 was lower than expected. Furthermore, almost all of the payments authorized by the Agricultural Assistance Act of 2007 are expected to be paid in 2008. Figure 14 shows the fluctuation in payment levels over time.

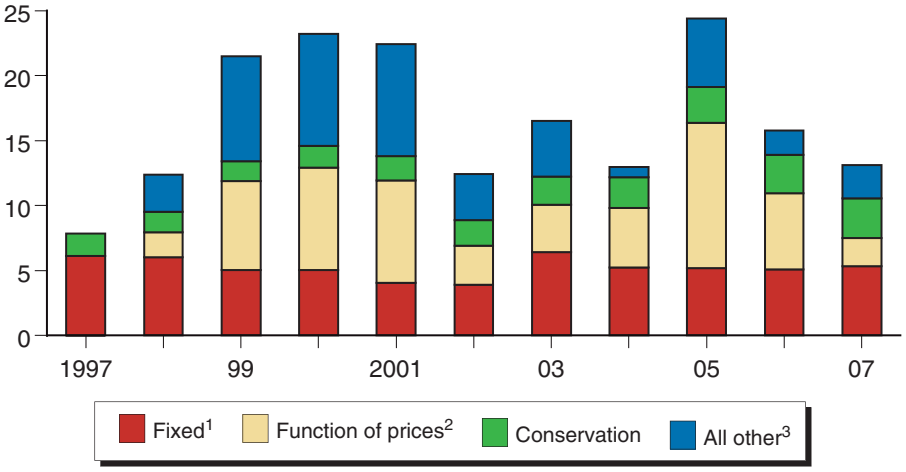
Distribution of Government Payments by Sales Class

In 2006, 43 percent of all U.S. farms received government payments. However, the amount of government payments and their importance with respect to gross cash income varies by the sales class of the farm operation. Larger farm operations received a larger than proportionate share of

Figure 14

Government payments, 1997-2007

$ billion



Note: 2007 forecast.

[1]Production flexibility contract payments and direct payments, where payment rates are fixed by legislation.

[2]Counter-cyclical payments, loan deficiency payments, marketing loan gains, and certificate exchange gains; where payment rates vary with market prices.

[3]All other refers to ad hoc and disaster relief programs, milk payments, Tobacco Transition Programs, and other miscellaneous programs.

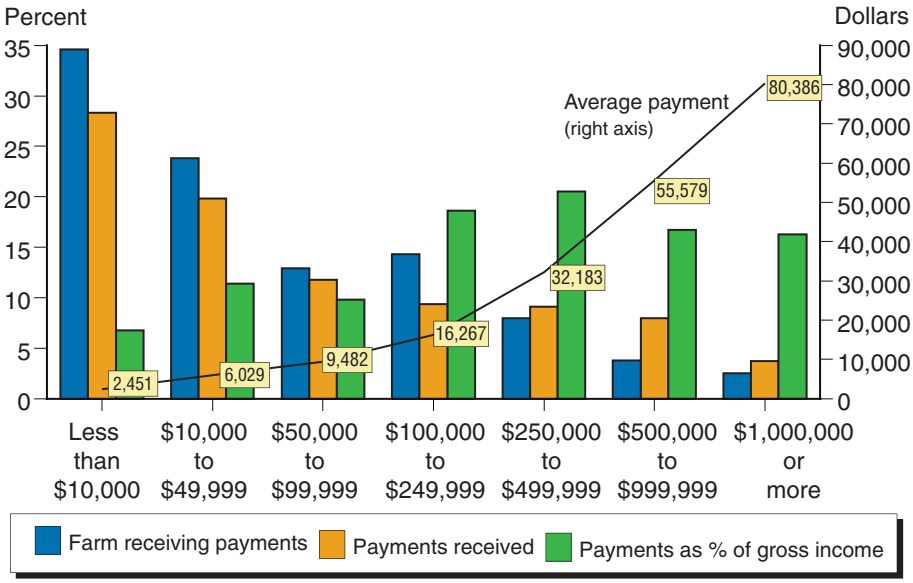
Sources: USDA, Natural Resource Conservation Service (NRCS), Commodity Credit Corporation (CCC), Farm Service Agency (FSA).

government payments (fig. 15). At one end, about 7 percent of all government payments went to farm operations with less than $10,000 in sales—a group accounting for 35 percent of all farms receiving government payments. These payments averaged $2,451 per farm and contributed 28 percent of gross cash income. At the other end, farms generating over $1 million in sales represent less than 3 percent of all farms receiving government payments but receive 16 percent of all government payments. The average payment of $80,386 per farm contributed less than 4 percent of gross cash income of farms with $1 million or more in sales. As a measure of government payments' significance to the stability of the farm operation, the average payment per farm increases with an increase in sales class, but this larger government payment contributes a much smaller share of the gross cash income, particularly at the extremes.

Over time, the composition and distribution of payments going to the various size classes of farms has been changing. Farms in the two lowest sales classes receive about 54 percent of all conservation payments but only 7 percent of all commodity program payments (fig. 15). The shares of commodity and conservation payments to these two classes of small farms have remained relatively unchanged since 1999. In contrast, farms in the three largest sales classes increased their share of conservation payments from 13 percent to 22 percent and their share of total commodity payments from 51 percent to 64 percent from 1999-2006. The increasing shares of payments going to the largest farms is due to the increasing size of this class of farms as the value of farm receipts has increased over time and to the increasing concentration of production

Figure 15

Characteristics of farms receiving government payments, by sales class, 2006



Sources: USDA, Natural Resource Conservation Service (NRCS), Commodity Credit Corporation (CCC), Farm Service Agency (FSA).

among the large farms. Rising cash receipts shifts more farms into the higher sales categories while increasing concentration of production increases the share of commodity payments going to large farms.

Farm-Related Income Anticipated To Reach 5.4 Percent of 2007 Production Value

Many farm operators use their farm assets to generate income from business activities other than crop and livestock production. These farm-related income activities include machine hire and customwork, sales of forest products, insurance indemnities, farm recreation (agritourism), and livestock grazing (fig. 16). Farm-related activities generated $17.5 billion in farm-related income in 2006, and are forecast to generate $17.8 billion in 2007, comprising 5.4 percent of projected value of U.S. agricultural production (see table 1).

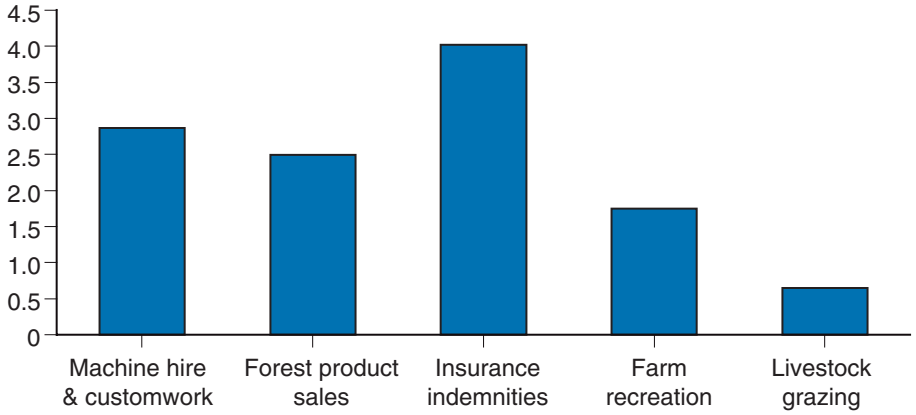
Nationally, machine hire and customwork is forecast to generate $2.9 billion in 2007. In 2006, farms specializing in crops accounted for three-fourths of total machine hire and customwork income. Based on farm size, commercial farms accounted for two-thirds of this total (fig. 17). Significant income generators were general crop farms located mostly in the West, followed by corn farms mainly in the Midwest, and fruit and nut farms located in the West.

Another major component of farm-related income is the sale of forest products, which is forecast to generate $2.5 billion income in 2007. In 2006, about two thirds of this income was earned by rural residence farms. Beef cattle farms and general crop farms, the dominant types of rural residence farms, accounted for nearly half. On a regional basis, Appalachia accounted for more than 40 percent of all receipts of forest product sales.

Figure 16

Farm-related income by source, 2007

$ billion



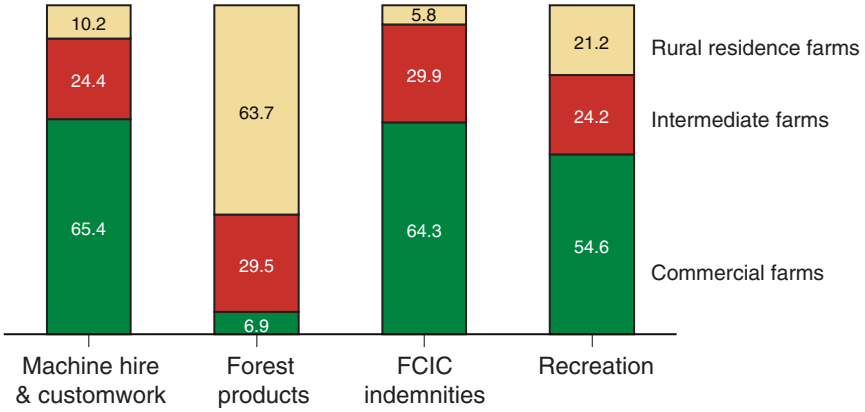
Note: 2007 forecast.

Source: USDA, Agricultural Resource Management Survey.

Figure 17

Farm-related income components by farm typology, 2006

Percent



Source: USDA, Agricultural Resource Management Survey.

Total insurance indemnities are forecast as $4 billion in 2007. Federal Crop Insurance Corporation (FCIC) receipts accounted for $3.5 billion of this total, with crop farms receiving nearly $6 out of every $7. Overall, commercial farms received about two-thirds of FCIC payments, with crop farms receiving the majority. About 60 percent of FCIC receipts were earned in either the Northern Great Plains or Prairie Gateway regions, while the Fruitful Rim received nearly 20 percent of receipts, almost entirely accounted for by greenhouse and nursery farm operations. In terms of farm types, more than one-third of FCIC indemnities were earned by cash grain, corn, or cotton farms; beef cattle operations received about one-fifth of FCIC receipts. Other insurance indemnities were fairly evenly split between crop and livestock operations.

On-farm recreation is another source generator of farm-related income. Sometimes called agritourism, farm recreation refers to a wide variety of activities, including hunting, fishing, horseback riding, ranch stays, winery tours, on-farm rodeos, and petting zoos. Farm recreation is forecast to generate $1.75 billion in income in 2007. In 2006, about 2.3 percent of farms nationwide were involved in some form of recreation. Outdoor recreation (hunting, fishing, and horseback riding) was the largest component of farm recreation, generating $758 million nationwide, followed by hospitality services (bed and breakfast and/or ranch stays), which accounted for $575 million. More than half of all farms generating income from recreation are located in the South, which, as a region, accounted for nearly 60 percent of all farm recreation income reported nationwide.

Receipts from other sources of farm-related income are generally smaller, with livestock grazing forecasted to generate about $650 million in income nationally in 2007. In 2006, three-quarters of grazing revenues were generated by livestock operations. All other farm-related income was forecast to generate $6 billion in 2007, about the same level as in 2006.

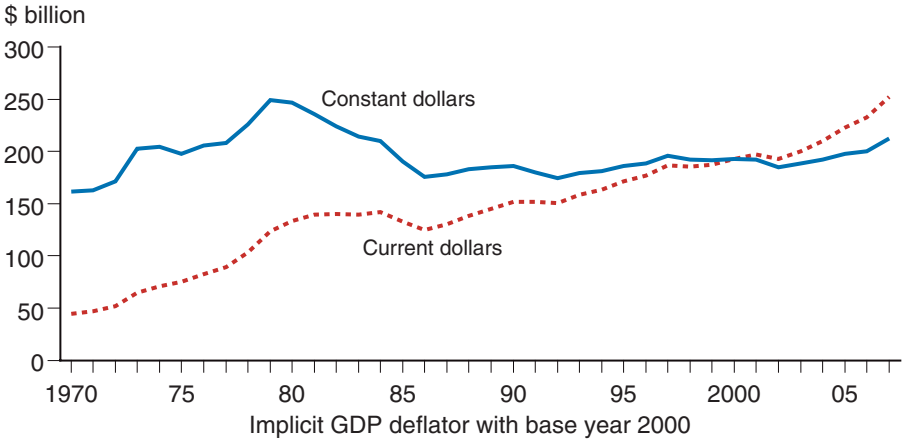
Production Expenses Are Expected To Achieve a Record High in 2007

U.S. farm production expenses are forecast to rise $21.8 billion (9.4 percent) to a nominal record-high $254.3 billion in 2007. This anticipated increase in 2007 expenses would be the largest on record if realized. Since a decrease in 2002, total expenses in nominal dollars will have risen $61.5 billion (32 percent). Expressed in constant dollars, total production expenses will have risen 15 percent since 2002 (fig. 18). Despite the large increase in forecast 2007 total expenses, the ratio of total expenses to final agricultural sector output, at 77.1 percent, is expected to be lower than it was in 2006.

The largest forecast increase in an individual expense is a $6.9 billion (22.5 percent) jump in feed expenses (fig. 19). Fertilizer expense is expected to increase almost 20 percent in 2007. Miscellaneous expenses (a very broad

Figure 18

Total production expenses, 1970-2007



Note: 2007 forecast.

Source: USDA, ERS.

category that include custom feeding fees, insurance, general management expenditures such as the Internet, etc.) are predicted to rise more than $2.5 billion or 9.5 percent (See box, “Internet Access and Use Has Become Extensive on U.S. Farms”). Total labor should be up $1.6 billion (6.5 percent) and seed expenses are forecast up $1.5 billion (14 percent).

Crop farms accounted for 52.1 percent of total expenses and livestock farms 47.9 percent in 2006 (fig. 20). Fuel and oil expenses are heavier on crop farms because of their use in farm machinery. The greater percentage of labor expenses is located on crop farms because fruit and nut, vegetable, and greenhouse and nursery farms are the heaviest users of labor. Crop farms have more tax expenses due to their more extensive use of land. However, a large number of rural residence livestock farms are located closer to urban areas and thus have higher taxes per acre.

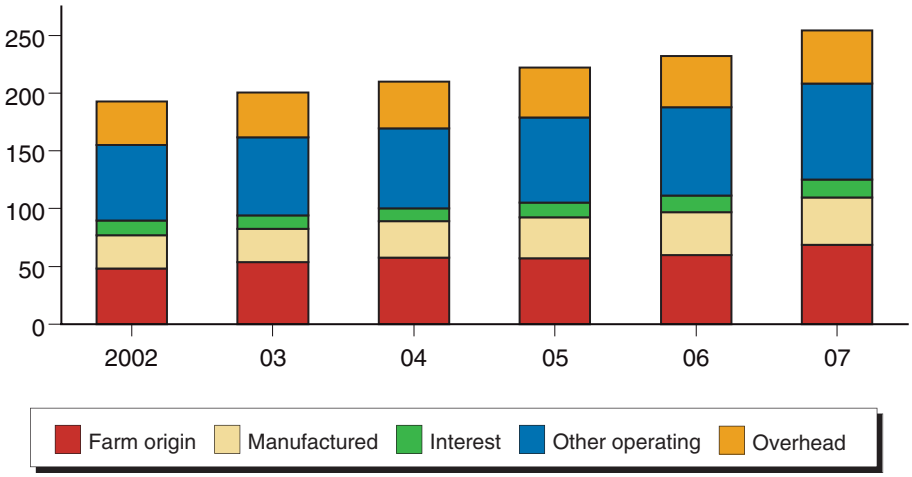
The projected 22.5-percent increase in feed expenses is almost totally the product of a 21-percent rise in feed prices. This price increase is due primarily to higher corn prices. The number of grain-consuming animal units is predicted to be 1.6 percent higher in 2007 and production in each of the 3 animal product types–meat animals, milk, and poultry and eggs—will be up. The biggest factor in the amount of feed used, though, is the number of cattle on feed, which was down 1.6 percent on July 1, 2007 from the previous year.

Total U.S. animal purchases should be up, primarily because of conditions in the cattle sector, which represents more than 75 percent of this expense. Opposing factors are at work in the cattle-on-feed situation. Drought is still pressuring cattle and calves into feedlots and exports are rising more slowly than expected, both of which exert downward pressure on prices. However, where favorable pasture and range conditions exist, cattle are being fed to heavier weights before being shipped to feedlots to reduce grain feeding; the supply of feeder cattle outside feedlots is tightening; and beef production is

Figure 19

Production expenses by group, 2002-07

$ billion



Note: 2007 forecast.

Source: USDA, ERS.

Internet Access and Use Has Become Extensive on U.S. Farms

Internet access on U.S. farms rose from 43 percent in 2001 to 62 percent in 2006

Internet use has become commonplace on the farm, but farms having high-speed Internet access are less common (table 9). Sixty-two percent of U.S. farms had Internet access in 2006, up from 43 percent in 2001. Internet access was roughly evenly split between dial-up and broadband technologies. Farms with higher value of production were much more likely to have broadband connections than smaller farm operations. Farms with Internet access also had greater production than farms with no Internet connection. Greater affordability and need may be causal reasons for these relationships.

Socio-economic characteristics of farm operators can explain some of the variation in Internet use. Farm operators' characteristics also appear to vary with broadband Internet access. Average age, number of children in the farm household, off-farm wages and total household income all differ between the no Internet, dial-up Internet access, and broadband Internet access groups.

Older farmers are less likely to have Internet access than younger farmers. Farmers with broadband Internet access are, on average, younger than farmers with dial-up access. The greater the education of the farm operator and spouse, the more likely the farm operation will have Internet access. Broadband Internet access is more likely when the combined educational attainment of farm households is high.

The presence of children increases the likelihood of Internet access. The higher the average off-farm wage and average total household income the greater the chance of Internet access. Among farms with Internet access, those with higher off-farm wages and total household income were more likely to have access to broadband.

A number of reasons were stated by farm operators for not having Internet access (table 10). A majority stated that they had no computer to access the Internet. Only 5 percent stated that they were unable to obtain adequate service. This implies that nearly all farm operators have Internet service of some sort available for their location.

Table 10
Reasons for no Internet access, 2006

	Percent
No computer	58
Inadequate service	5
Security concerns	2
Other	35
Total	100

Source: USDA, Agricultural Resource Management Survey.

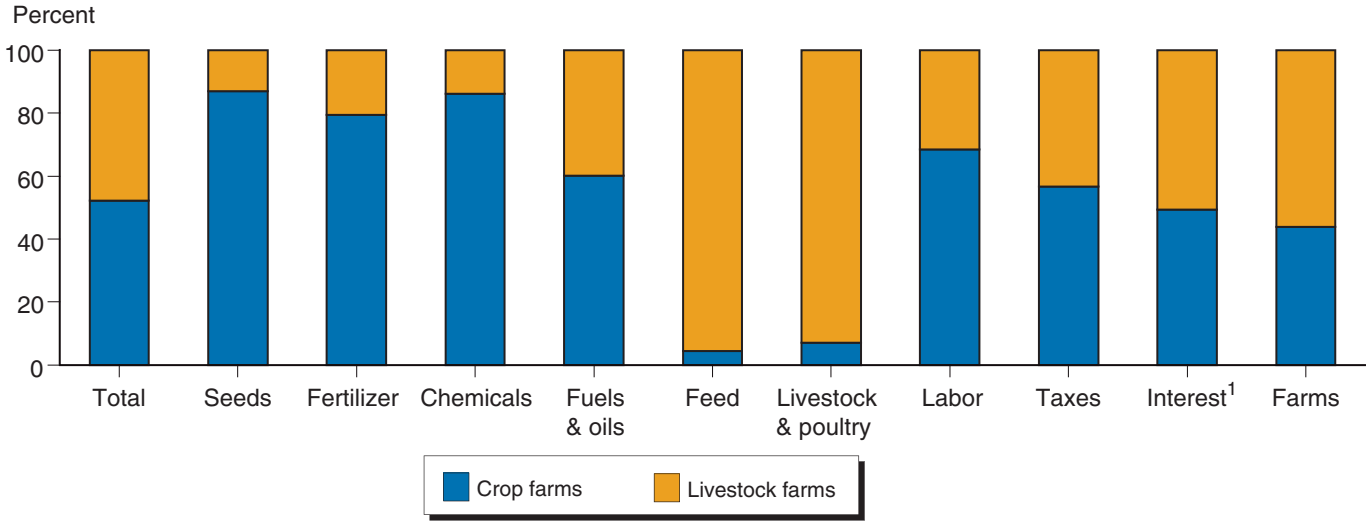
Table 9
Farm Internet access with selected farm operator characteristics, 2006

	Type of Internet access		
Item	No internet	Dial-up	Broadband
Number of farms	788,313	647,142	648,188
Percent of farms	37.8	31.1	31.1
Percent of value of production	20.7	28	51.3
Percent of farms by education:			
Education below college	88.6	69.8	63.2
College graduate	11.4	30.2	36.8
Operator age	61	55	53
Number of children	0	1	1
Combined off-farm wages	19,565	39,189	53,781
Total household income	58,178	80,719	104,678

Source: USDA, Agricultural Resource Management Survey.

Figure 20

Percent of production expenses by farm type, 2006



[1]Farm operators only; excludes landlords.

Source: USDA, Agricultural Resource Management Survey.

predicted to be up slightly. These factors tend to push feeder cattle prices up. The net effect is that the annual average price for Oklahoma City feeder cattle and Nebraska choice steers are both expected to rise. Additionally, milk cows are commanding higher prices because of rising milk prices. Prices paid for milk cow replacements have jumped 22 percent since January. As for hogs, commercial pork production is slated to increase nearly 3 percent, which should produce a 3-percent rise in the farm price for hogs.

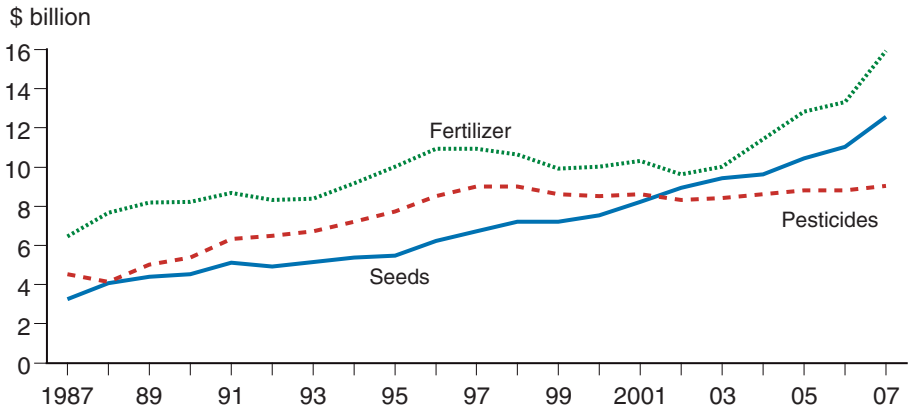
The principal crop-related expenses (seed, fertilizers, and pesticides) are forecast to be $37.5 billion, up $4.3 billion from 2006 and the fifth straight annual increase of $1 billion or more. One factor affecting this expense, planted acreage, is up around 0.5 percent in 2007. All three expenses are expected to rise to their highest levels ever (fig. 21).

The principal reason for the forecast $1.5 billion (14 percent) increase in seed expenses is the forecasted 12 percent increase in prices paid for seed. The demand for corn seed caused by the increase in corn acreage is the major reason that the prices paid index for seeds rose so much in 2007. The price for all corn seed was 12.7 percent higher in April 2007 than in April 2006. Seed expenses and prices have been rising rapidly since 1999, with the 2007 increase being the largest ever. The rise in seed prices is tied to the greater use of genetically modified seeds, which are more expensive and are in greater demand.

Fertilizer expenses in 2007 are forecast to increase $2.6 billion (19.5 percent) to a record-high $15.9 billion. Another double-digit increase, 14 percent, is forecast for prices paid for fertilizer in 2007. The primary factor driving up the fertilizer prices in 2007 is the demand for fertilizer caused by expanding corn production. Fertilizer use should be up 8 percent, with use on corn up 19 percent in 2007.

Figure 21

Crop-related expenses, 1987-2007



Note: 2007 forecast.

Source: USDA, ERS.

The expected 3.4-percent increase in pesticide expenses in 2007 will take this expense item to a point slightly higher than its previous peak in 1997-98. The prices paid index for pesticides rose 9.2 percent between February 2005 and November 2006, most likely in response to relatively high oil prices, since petrochemicals are used in many pesticides. Nonetheless, the annual average prices paid index for pesticides is predicted to be up only 1.2 percent in 2007. Use of pesticides on field crops should be around 1 percent higher. Use of herbicides will rise in response to higher corn acreage and the use of insecticides should fall due mostly to fewer cotton acres being planted.

Payments to Stakeholders Expected To Rise to Record High in 2007

Payments to stakeholders (hired labor, lenders, nonoperator landlords) are expected to rise 7.2 percent to a record-high $48.6 billion in 2007. This increase would be the fourth straight since 2003, during which payments will have risen 20 percent. The increase in payments in 2007 will be less than the rise in net farm income and net value added, however, so payments to stakeholders will constitute a smaller portion of both figures. As a percentage of total expenses, payments to stakeholders have been dropping since they reached a peak at 26.5 percent in 1984. In 2007, this ratio is forecast to decline slightly to 19 percent.

Hired labor compensation, both cash and noncash, is forecast to rise 7.5 percent. Wage rates are predicted to rise 4 percent. Labor usage is expected to rise 2.5 percent. Hired labor expenses are heavily concentrated on commercial farms. In 2006, 85 percent of hired labor expenses were incurred on commercial farms, in contrast to around 71 percent of gross rent and 55 percent of interest expenses.

A 9.7-percent increase in net rent to nonoperator landlords is the result of a combination of offsetting factors. Cash rent is forecast up 4 percent as a result of the continuing increases in land values and the 26-percent rise in the value of crop production should push share rent up around the same

percentage. Countering these increases is a 22-percent projected fall in direct government payments to landlords.

Total interest expenses are expected to increase as a result of a $555-million rise in real estate interest and a $350-million rise in nonreal estate interest expenses. The increases are almost entirely due to increases in end-of-year and average outstanding debt with only a small increase in interest rates expected in 2007. End-of-year debt is forecasted to rise 3.8 percent with real estate debt was projected to be up 4.6 percent and nonreal estate debt up by 2.8 percent.

The ratio of fixed expenses to gross farm income has been generally declining since it peaked in 1983, indicative of the U.S. farm sector's improved liquidity position (fig. 22). During 1980-85, this ratio exceeded 30 percent, as large amounts of debt and relatively high machinery prices raised interest payments to its highest level and capital consumption to a level not reached again until 2005. Since 2002, the ratio of total expenses to gross farm income has reached low levels not seen since the early 1970s.

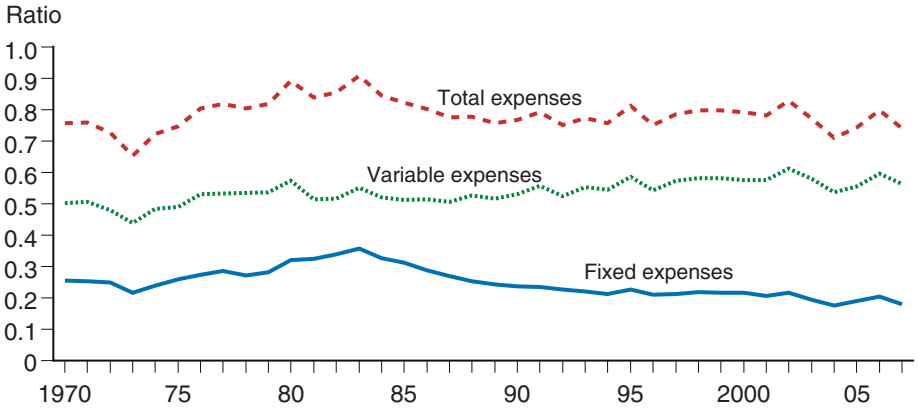
Rising Energy Costs Have Marginal Impact on the Farm Sector's Bottom Line

Over the past 5 years, the price of fuels has increased sharply and, by historical standards, remains relatively high (fig. 23). Through September 2007, the inflation-adjusted annual average of prices paid for diesel, gasoline/gasohol, and LP (liquefied petroleum) gas rose 94 percent since 2002. The forecast fuels and oils expense for 2007, at $11.6 billion, is the highest recorded nominal expenditure for this input.

Following 4 years of double-digit percentage increases, the price index for fuels has increased only 5 percent through October 2007. However, the effect of this price increase on farm expenses is limited because fuels and oils comprise about 5 percent of total production expenses in 2007, about the same share as fertilizers. Also, there is significant variation in fertilizer and

Figure 22

Ratio: Expenses/gross farm income,1970-2007



Note: 2007 forecast.

Source: USDA, ERS.

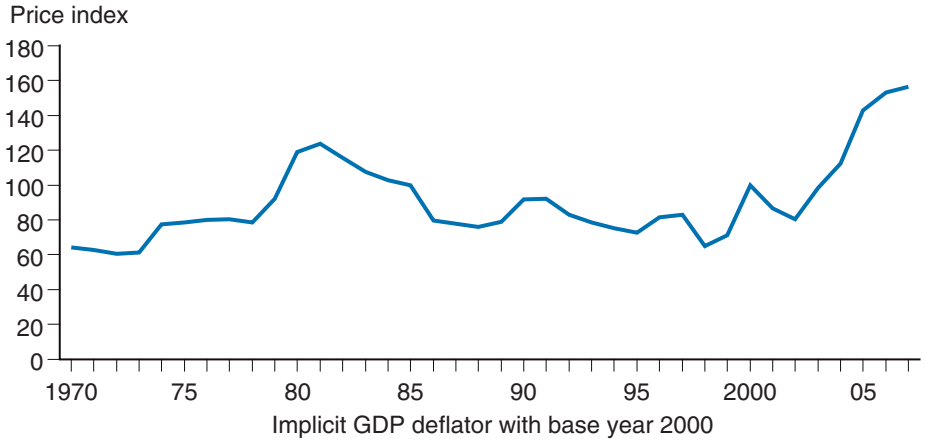
fuel usage among different farm types, with wheat, corn, soybean, and cotton producers among the heaviest users of fuels and oils (fig. 24).

The rapid rise in fertilizer prices during 2007 is mainly due to the greater demand by farm operations for fertilizer. This increased demand results from the sudden, large-scale switch to corn production by farm operations. Corn production requires more fertilizer than the crops it replaced. It is also the result of land previously set aside for conservation being put into corn production.

Higher energy prices have encouraged farm operators to employ energy-saving farming practices. About one quarter of all U.S. farmers took actions to reduce their fuel or fertilizer expenses in 2006. To reduce fuel expenses, the most common practices were to regularly service engines (employed

Figure 23

Prices paid index for fuels, 1970-2007

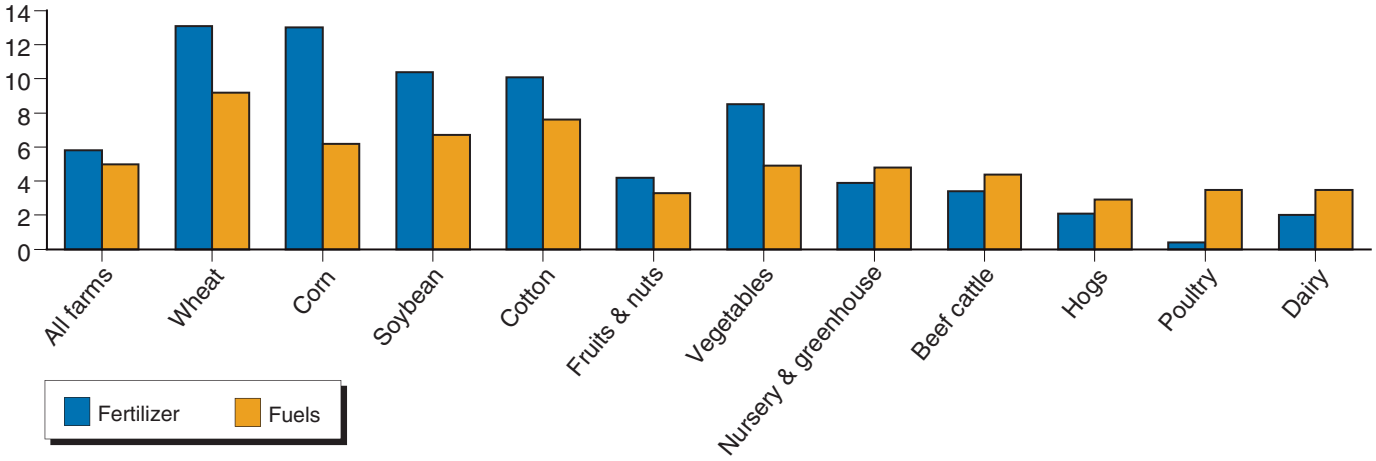


Note: 2007 forecast. Index reflects annual average of prices in constant dollars paid for diesel, gasoline/gasohol, and LP gas.

Source: USDA, National Agricultural Statistics Service.

Figure 24

Fertilizers and fuels: share of total expenses by farm type, 2006



Source: USDA, Agricultural Resource Management Survey.

on 18 percent of all operations) and reduce the number of trips over a field (employed on 14 percent of all operations). Commercial farms were most likely to engage in strategies aimed at reducing fuel usage, with 47 percent responding that they had utilized one or more cost-saving activity. On average, intermediate farms negotiated 7 percent price discounts from fuel suppliers in contrast to 6 percent for commercial farms and 5.4 percent for rural residence farms.

Strategies employed to reduce fertilizer expenses in 2006 were also most common among commercial operations. Conducting a soil test was the most common practice employed, with about a quarter of all commercial operations using this technique. Other actions taken by commercial farms to reduce fertilizer expenses include reducing the quantity of fertilizer used (employed by 23 percent of commercial farms), using precision technology for fertilizer, pesticide, or seeding applications (employed by 15 percent of commercial farms), and adjusting the plant population (employed by 11 percent of commercial farms). Commercial farms also negotiated price discounts with fertilizer suppliers, obtaining discounts of 8 percent, on average, compared to 7-percent discounts for intermediate operations and 6-percent discounts for rural residence farms.

In recent years, growing demand for ethanol, combined with government policies encouraging its production, have enticed many farmers to participate in the alternative energy market. In 2006, nearly 4,000 farm operators produced biomass crops solely for energy purposes. About half were commercial farms. The average acreage for biomass crop operations was more than double the average U.S. farm size. About 60 percent of biomass crop farms were located in the Midwest.

Almost 14,000 farm operators in 2006 earned dividends from their investments in firms that produced ethanol. Farmers earning dividends from ethanol tend to be older and wealthier. About half were at least 65 years of age and 85 percent lived in households with high income/high wealth (relative to the national median). In comparison, only about a quarter of all farmers nationwide were 65 or older, while just over half were in the high income/high wealth category.

Crops grown for ethanol use are generally produced in counties that are more distant from areas of population concentration. Approximately 50 percent of farmers earning ethanol-related dividends in 2006 operated farms in counties that are totally rural. About one-quarter lived in population-loss counties.

Farm Financial Performance and Risk Exposure

Rising real estate values and cautious borrowing use are projected to keep the farm sector balance sheet at sound levels in 2007

Farm asset, debt, and equity values are expected to continue rising through the end of 2007 (fig. 25). The value of U.S. farm assets is forecast to increase by about 12.3 percent in 2007 (table 11). The value of farm real estate assets, which comprise about 85 percent of farm sector assets, is expected to rise by 13.7 percent. Farm sector equity is expected to continue rising in 2007 as the increase in farm asset values exceeds the rise in farm debt. Sector net worth, the total value of farm assets less total farm debt, is expected to be about $2 trillion in 2007, up from $1.8 trillion in 2006. Overall, farm sector equity growth has exceeded 12 percent each of the past 4 years and has risen 54.6 percent since 2003. This growing stock of equity capital can help finance investments in farm and nonfarm capital, and also help pay off outstanding debt.

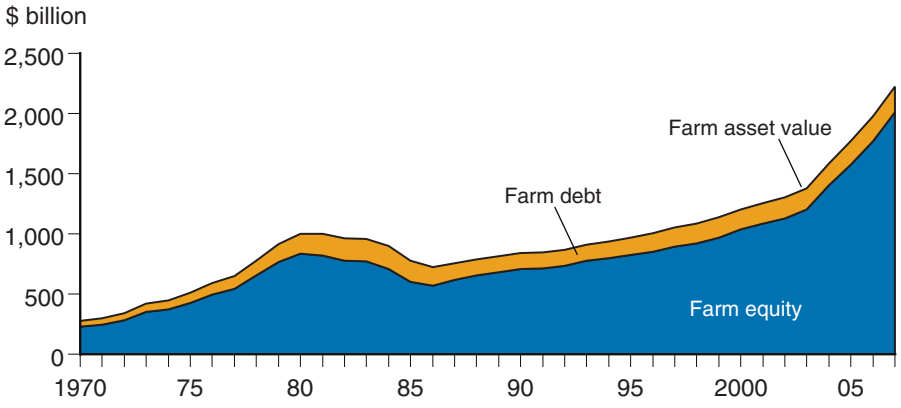
The value of year-end 2007 crop inventories is expected to grow by nearly 21 percent from 2006 while the value of livestock and poultry inventories is expected to fall slightly. The value of machinery and motor vehicles is expected to rise by about $3.4 billion in 2007, based on higher expected capital expenditures. Purchased inputs are expected to increase by about 8.6 percent in 2007 and financial assets are expected to rise about 7 percent.

Farmland and Building Values Rose 13.3 Percent in 2006

Farmland and building values (dollars per acre) rose by about 13.3 percent in 2006 and are expected to rise another 13.7 percent in 2007. The demand for farmland for recreation and nonfarm development will continue to exert upward pressure on U.S. farmland values, especially in urban and urbanizing

Figure 25

Farm sector asset values = farm equity value + farm debt



Note: 2007 forecast.

Source: USDA, ERS.

Table 11
Balance sheet of the U.S. farming sector, 2002-07

	2002	2003	2004	2005	2006	2007
			$ million			
Farm assets	1,304,049	1,378,757	1,584,842	1,769,339	1,979,087	2,222,619
Real estate	1,045,655	1,111,777	1,307,597	1,484,989	1,682,381	1,912,194
Livestock and poultry	75,621	78,540	79,420	81,097	80,747	80,649
Machinery and motor vehicles[1]	93,582	95,944	102,190	105,006	113,144	116,538
Crops stored[2]	23,114	24,429	24,435	24,291	22,699	27,407
Purchased inputs	5,632	5,627	5,700	6,491	6,460	7,019
Financial assets	60,445	62,440	65,500	67,465	73,656	78,812
Total farm debt[3]	177,224	175,145	182,965	193,230	207,325	215,155
Real estate debt	95,423	94,138	96,872	101,518	109,038	114,083
Farm Credit System	37,815	37,662	37,723	40,125	43,851	
Farm Service Agency	3,181	2,485	2,222	2,050	2,260	
Commercial banks	33,060	32,937	35,233	36,939	40,521	
Life insurance companies	11,421	11,371	10,912	11,019	11,019	
Individuals and others	9,946	9,684	10,782	11,384	11,388	
Nonreal estate debt	81,801	81,006	86,093	91,712	98,287	101,071
Farm Credit System	20,491	20,165	21,896	24,218	27,905	
Farm Service Agency	3,973	3,646	3,242	3,015	2,758	
Commercial banks	44,344	43,571	45,830	48,523	51,671	
Individuals and others	12,993	13,625	15,125	15,956	15,953	
Farm equity	1,126,825	1,203,612	1,401,877	1,576,109	1,771,762	2,007,465
Selected ratios:						
Debt-to-equity	15.7	14.6	13.1	12.3	11.7	10.7
Debt-to-asset	13.6	12.7	11.5	10.9	10.5	9.7

Note: 2007 forecast. Numbers may not add due to rounding. Balance sheet is as of December 31.

[1]Includes only farm share of value for trucks and automobiles.

[2]Non-CCC crops held on farms plus value above loan rates for crops held under CCC.

[3]Includes CCC storage and drying facilities loans but excludes debt on operator dwellings and for nonfarm purposes.

Source: USDA, ERS.

areas. The sluggish growth in the U.S. housing sector and decreasing demand for new housing have not slowed the demand for farmland investment.

Upward Trend in Farm Debt Expected To Continue in 2007

Farm sector debt is anticipated to stand at about $215.2 billion by the end of 2007, up to a new record level for the fourth consecutive year (table 11). Real estate debt is expected to rise to $114.1 billion, up 4.6 percent, while nonreal estate debt is expected to be $101.1 billion, a 2.8 percent increase. Expected debt increases in 2007 built on 3 consecutive years of rising farm debt. From the beginning of 2003 through the end of 2006, farm debt rose almost $32 billion, or 18 percent.

The recent rise in loan balances can be at least partially attributed to farmers' positive view of the sector's future. Strong farmland markets of the last several years attest to farmers' long-term confidence. While many farmers

have financed expansions with cash purchases of adjacent properties, farm mortgage debt levels rose over 7 percent in 2006 and are expected to rise almost 5 percent in 2007.

Most borrowers in 2007 should have little difficulty cash-flowing their production loans, given relatively high commodity prices. Funding gaps, if any, may be filled by the increasing number of machinery, seed, and chemicals suppliers who are expanding their traditional use of financing as a means to boost product sales, and are offering financing to meet the farmer's full production credit needs.

Farm real estate debt accounted for 53 percent of total farm debt in 2006, up from about 50 percent in 1997 (fig. 26). Nonreal estate debt is increasing and is shifting toward Farm Credit System and commercial bank lending sources which accounted for 81 percent of nonreal estate farm debt in 2006, up from 71 percent in 1997.

Only 11 Percent of Farm Assets Financed With Debt by End of 2006

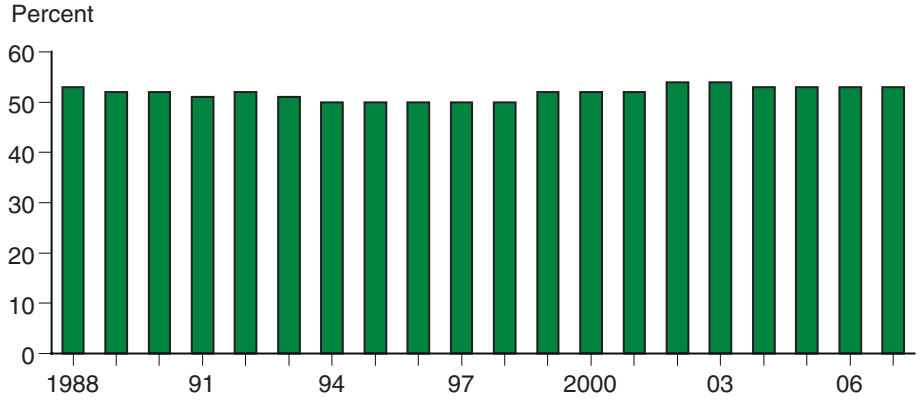
While farms combine debt, equity capital, retained earnings, and leasing to acquire farm inputs, in fact the farm sector makes minimal use of debt. Over 60 percent of all U.S. farms reported owing no debt to lending institutions, individuals, or other creditors at year-end 2006. Overall, farm liabilities were only 11 percent of farm assets.

The percentage of farms reporting no debt in the ARMS survey has continued to rise since 2000 and increased nearly 2 percent from 2005-06 (table 12). Conversely, the percentage of farms with debt continues to decrease by an equivalent amount. While farm asset values rose 9.2 percent from 2005-06, liabilities rose 18 percent mainly due to increased real estate debt. However, in dollar terms, asset values continue to rise more rapidly than debt.

Data on differing types of U.S. farms provide some interesting details on which operations hold farm debt in 2006 (table 12). Commercial farms,

Figure 26

Real estate as a percent of farm debt, 1988-07



Note: 2007 forecast.

Source: USDA, ERS.

Table 12
Farm-operation balance sheet summary, by debt classification, 2000-06

Classification/item	2000	2001	2002	2003	2004	2005	2006
				Percent			
Farms with no debt:							
Percent of farms	57.4	57.8	57.0	59.0	60.4	62.8	64.6
				Dollars per farm			
Farm assets	425,615	436,387	460,045	514,874	532,640	616,415	683,083
Farm liabilities*	899	957	1,028	1,015	988	1,109	1,222
Farm equity	424,716	435,430	459,017	513,859	531,652	615,305	681,862
				Percent			
Debt/asset ratio	0.21	0.22	0.22	0.20	0.19	0.18	0.18
Farms with debt:							
Percent of farms	42.6	42.2	43.0	41.0	39.6	37.2	35.4
				Dollars per farm			
Farm assets	622,662	659,917	626,760	741,128	885,011	949,607	1,027,611
Farm liabilities*	124,801	131,750	140,268	142,862	150,102	155,250	184,429
Farm equity	497,861	528,168	486,492	598,265	734,910	794,357	843,182
				Percent			
Debt/asset ratio	20.0	20.0	22.4	19.3	17.0	16.3	17.9

* Contingent liabilities only.

Source: USDA, Agricultural Resource Management Survey.

despite a higher debt-to-asset ratio, had larger returns on assets (5.1), higher returns to equity (4.6), and higher operating profit margin (16.4) than other farm types (table 13).

Debt-to-asset ratios vary geographically (table 13). Farms in the Corn Belt and Northern Plains had the highest debt-to-asset ratios in 2006, while the Southeast had the lowest. However, farms in the Corn Belt had the highest (2.4 percent) return on assets and nearly the highest returns on equity. Regional variability is principally due to differing economic circumstances and types of farms across the regions. Corn-belt farms are expected to benefit from strong net returns to corn and soybean production in 2007.

Another way of looking at farm debt is to examine farm operator's use of borrowed capital (fig. 27). Loans made to agricultural producers are classified as real estate and nonreal estate loans. Real estate loans generally have terms of 10 to 40 years, and are ordinarily used to purchase farmland or to make major capital improvements to farm property. Nonreal estate loans are typically made with loan maturities of less than 10 years, depending on the purpose of the loan. In 2006, over 35 percent of farm operations with debt had only real estate loans. Nearly 20 percent of farms with debt had a combination of real estate, nonreal estate, and short term loans.

Farm Debt Repayment Capacity Utilization Expected To Fall in 2007

From 1993 to 2003, farm debt rose almost $37 billion, or $4.1 billion per year (fig. 28). From 2003 to the end of 2007, it is expected to increase by another

Table 13

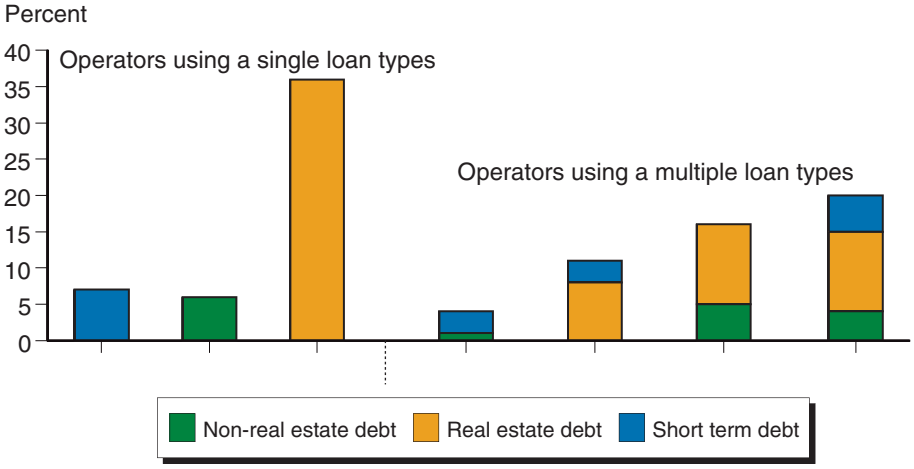
Financial ratios for farm operations with debt payable to lenders by selected characteristics, 2006

Characteristic/Item	Debt/asset ratio	Return on assets	Return on equity	Operating profit margin
		Percent		
Farm typology:				
All	18.4	1.14	-0.11	5.92
Rural residence farms	19.0	-2.46	-4.39	-34.16
Intermediate farms	14.2	-1.95	-3.44	-17.57
Commercial farms	20.7	5.06	4.57	16.37
Region:				
All	18.4	1.14	-0.11	2.76
Northeast	15.1	-0.59	-2.04	-11.18
Lake States	17.9	1.35	0.22	3.99
Corn Belt	21.5	2.43	1.40	9.44
Northern Plains	21.0	0.10	-1.71	2.11
Appalachia	15.6	2.23	1.49	4.93
Southeast	13.8	0.77	-0.28	4.68
Delta	19.9	-0.63	-2.71	-11.79
Southern Plains	17.9	-1.79	-3.66	-23.19
Mountain	15.3	1.12	0.10	5.84
Pacific	19.4	2.21	1.14	9.44

Source: USDA, Agricultural Resource Management Survey.

Figure 27

Loan types used by farm operators with debt, 2006



Source: USDA, Agricultural Resource Management Survey.

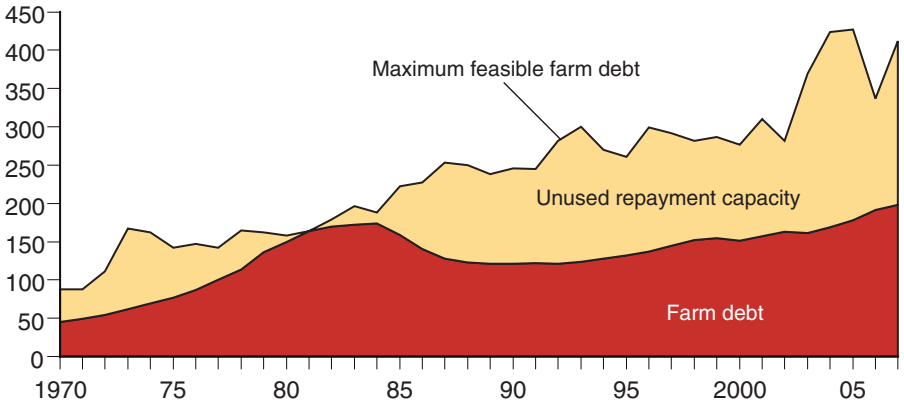
$37 billion, over $9 billion per year, while interest rates on new farm loans have increased by almost 300 basis points (a basis point is 1/100 of 1 percent).

While this recent rise in farm debt and its cost may cause additional financial difficulty for some farm operators, it has been offset by a 20-percent rise in farm earnings before interest and income taxes. Thus, operators' maximum feasible farm debt and their unused repayment capacity are both expected to rise to their third-highest levels since 1970. Farm debt repayment capacity is the farm operators' maximum feasible farm debt given current farm interest rates, net cash farm income before interest and taxes, and a 7-year repayment

Figure 28

Farm operators' farm debt repayment capacity and farm debt, 1970-2007

$ billion



Note: 2007 forecast.

Source: USDA, ERS.

period. Unused farm debt repayment capacity, which is farm operators' credit capacity less current actual farm debt, has grown considerably if unsteadily since the early 1980s.

A measure of risk exposure for farm operators is debt repayment capacity utilization (DRCU). DRCU can be estimated using only farm operators' farm income and debt (i.e.; farm DCRU). It can also be estimated using operators' total farm income and debt; i.e.; farm and nonfarm income and debt (i.e.; total DRCU).

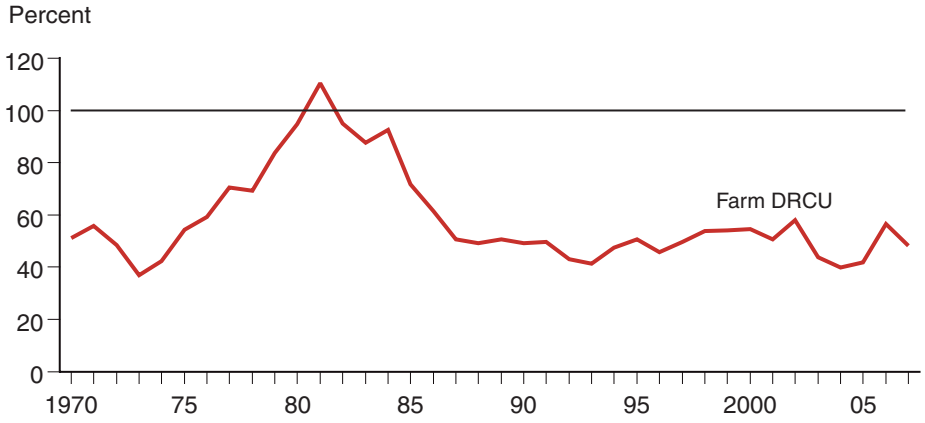
DRCU for farm debt and income only is the ratio of farm operator farm debt relative to their maximum feasible farm debt. Liquidating farm assets and other possible means of paying off farm debt are not included in the estimation of farm DRCU.

Since the idea underlying borrowing is to pay the debt over time through the successful production and sale of farm products and services, DRCU makes sense as a measure of financial risk. A higher DRCU indicates higher risk exposure. Declining government payments and farm cash receipts or rising interest rates and debt loads increase DRCU. A farm DRCU exceeding 100 percent indicates that debt payments must be made by some source other than net cash farm and nonfarm earnings. A DRCU of 120 percent is used to indicate the high-risk DRCU threshold.

The farm DRCU for farm operators ranged from about 84 percent to about 110 percent from 1979-84 (fig. 29). A farm DRCU of 110 percent indicates that current farm operator debt exceeds the ability of current farm financing by 10 percent, thus requiring some other means to service farm debt. The 1981 peak in farm DRCU was the result of double-digit interest rates combined with large farm debt loads. Declining interest rates and farm debt loads since helped bring the farm DRCU down to a fairly stable level since the latter 1980s. Given an expected small increase in farm business debt and its cost along with a large expected rise in net cash farm earnings before

Figure 29

Trends farm operators' ability to service current farm debt solely out of net cash farm income over 7-year period (DRCU), 1970-2007



Note: 2007 forecast.
Farm DRCU = Debt Repayment Capacity Utilization for farm debt.
Source: USDA, ERS.

interest and taxes, farm DRCU is expected to decline from 57 percent in 2006 to about 48 percent by the end of 2007.

Farm-level Data Allow Classifying Farm Operators' Total DRCU

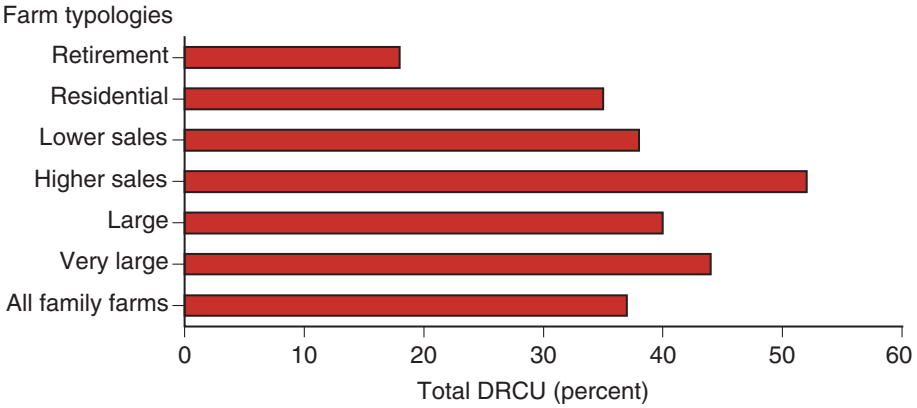
Farm DRCU relied on farm sector data and was restricted to farm debt and farm earnings. Farm-level data can be used to show the total DRCU for different farm typologies, types of production, and ERS resource regions for total farm debt and income (farm plus nonfarm). For the farm-level analysis for total DRCU, nonfarm income, family withdrawals for living expenses, and payment of estimated income taxes are now included in the calculation of net cash income available for total debt coverage.

By the end of 2006, family farm operators were carrying about 37 percent of the farm and nonfarm debt they could service with after-tax, net cash income from their total or farm plus nonfarm earnings (fig. 30). Farms with higher sales and where farming is the operators' major occupation made the greatest use of their debt repayment capacity, retirement farm operators the least. About one out of every five family farm operators were classified in the high risk category; i.e.; DRCU > 120 percent (fig. 31). Among the different farm typologies, farm operators in the higher-sales category had the greatest risk exposure in terms of their ability to cash flow their total debt.

Dairy farm operators made the greatest use of their debt repayment capacity while those specializing in other field crops the least in 2006 (fig. 32). However, farm operators specializing in hog and those specializing in poultry production had the greatest share of farms exceeding the high-risk threshold (fig. 33). Family farm operators in the Northern Great Plains made the greatest use of their debt repayment ability out of their net cash flows (fig. 34) and also had the highest share of their farm operators in the high-risk DRCU category (fig. 35).

Figure 30

Total Debt Repayment Capacity Utilization (DRCU) percentages by family farm typology, 2006

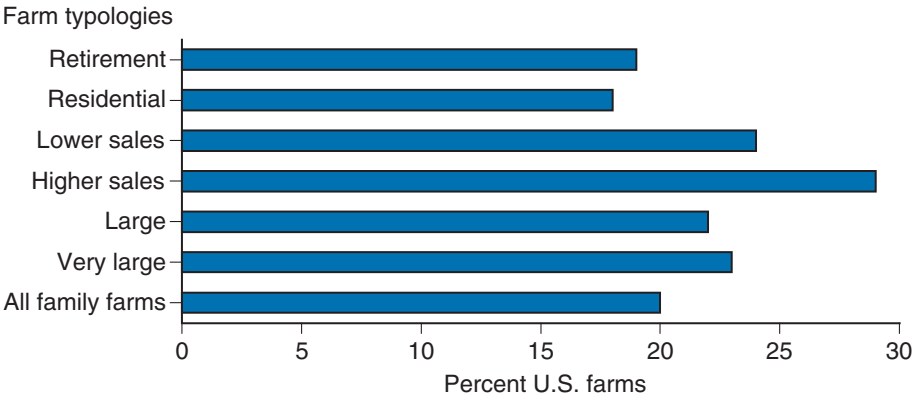


Note: Total DRCU includes farm and nonfarm debt and income.

Source: USDA, Agricultural Resource Management Survey.

Figure 31

Percent of farms with total Debt Repayment Capacity Utilization (DRCU) > 120% by family farm typologies, 2006

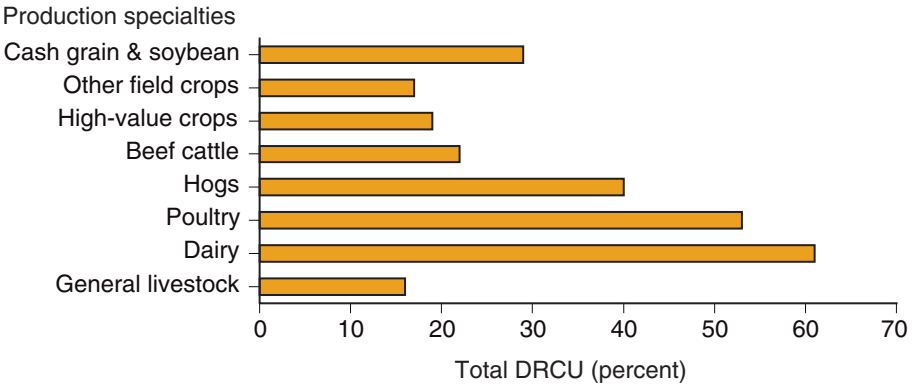


Note: Total DRCU includes farm and nonfarm debt and income.

Source: USDA, Agricultural Resource Management Survey.

Figure 32

Total Debt Repayment Capacity Utilization (DRCU) percentages for farm production specialties, 2006

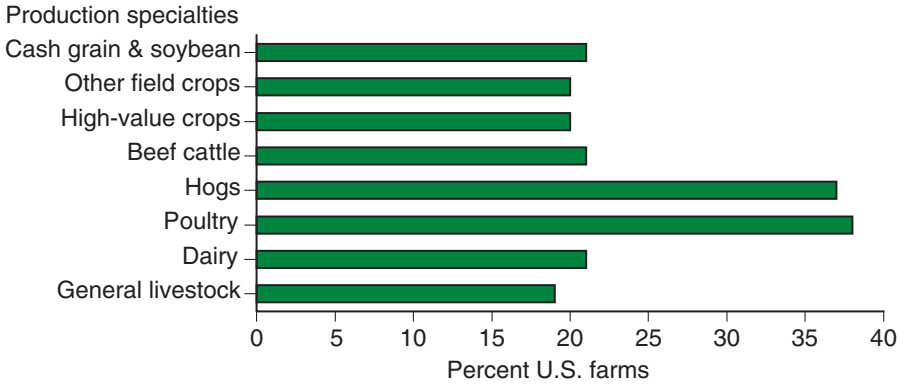


Note: Total DRCU includes farm and nonfarm debt and income.

Source: USDA, Agricultural Resource Management Survey.

Figure 33

Percent of farms for different farm production specialties with total Debt Repayment Capacity Utilization (DRCU) percentages > 120%, 2006

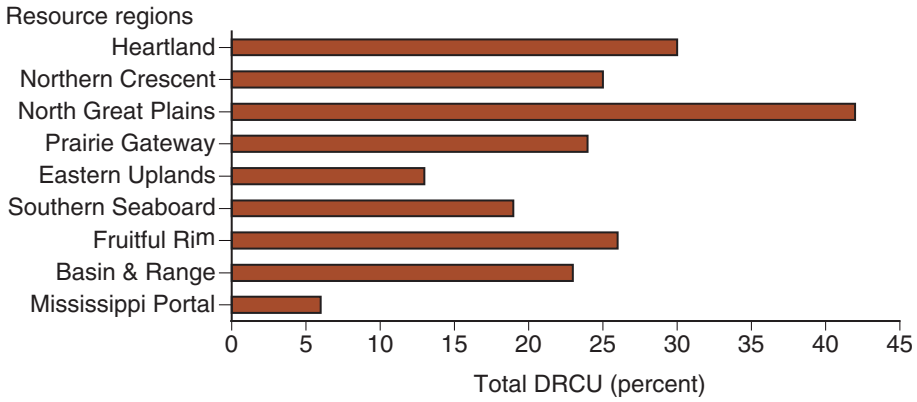


Note: Total DRCU includes farm and nonfarm debt and income.

Source: USDA, Agricultural Resource Management Survey.

Figure 34

Total Debt Repayment Capacity Utilization (DRCU) percentages for ERS resource regions, 2006

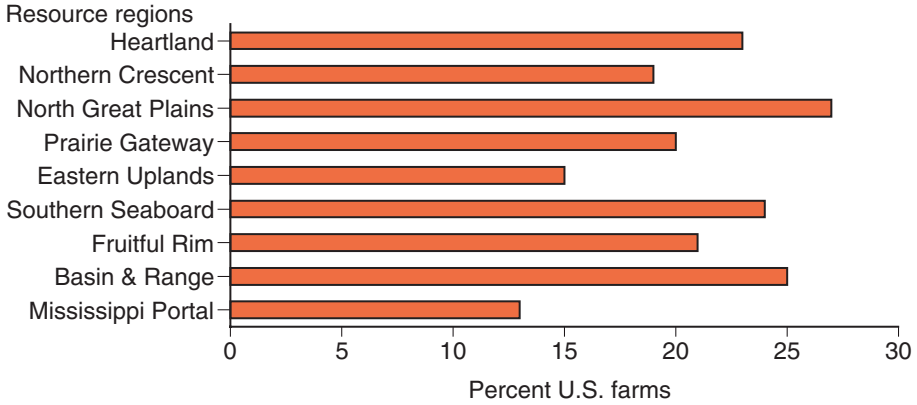


Note: Total DRCU includes farm and nonfarm debt and income.

Source: USDA, Agricultural Resource Management Survey.

Figure 35

Percent of farms in ERS resource regions with total Debt Repayment Capacity Utilization > 120%, 2006



Note: Total DRCU includes farm and nonfarm debt and income.

Source: USDA, Agricultural Resource Management Survey.

Income, Debt Use, and Financial Performance of Farm Businesses

Net cash income for farm businesses in 2007 is projected to be 21 percent higher than 2006

U.S. agriculture is a diverse sector represented by a complex mix of business enterprises. This section focuses on farm businesses (See box, "Defining Farm Businesses" for definition), which generate the majority of economic activity in the sector. Since 1986, the annual ARMS survey and its predecessor surveys have been used to establish estimates of farm financial position, considering both net income and the degree of indebtedness. Results reported here highlight the diversity of financial problems faced by farm businesses.

Farm Business Income Prospects

Average net cash income for farm businesses (intermediate and commercial operations, including non-family farms) is projected to be $66,100 in 2007. This represents a 21-percent increase from 2006 and is 23 percent higher than the previous 5-year average. The projected change in income prospects for farm businesses will not affect all farm operations in the same manner or to the same degree. There is considerable variation in business structure, including the extent to which assets are owned, the mix of crop and livestock produced, the contribution of government payments to gross income, and the relative importance of energy inputs and borrowed capital to production costs. Several classifications of farms—including commodities produced and geographic location—reflect this diversity.

Farm businesses that specialize in the production of mixed cash grains, wheat, and corn in 2007 are projected to have their highest average net cash incomes of this decade, with expected increases ranging from 48 to 60 percent (table 14). Average net cash income for farm businesses that specialize in either soybean or peanut production is projected to increase by 60 percent over 2006 and would be the second highest of the decade behind 2004. In contrast, net cash incomes are forecast to decline by 30 percent for farm businesses that specialize in either cotton or rice production and by much lesser magnitudes for specialty crop (minus 8 percent) and other field crop farm businesses (minus 5 percent). Among crop farm businesses with lower income in 2007, only specialty crop farm businesses are expected to have higher net cash incomes than the previous 5-year average.

Among farm businesses specializing in livestock production, dairy is expected to have the largest year-to-year increase in net cash income. Overall demand for dairy products was surprisingly strong during most of 2007. As a result, prices for fluid milk, butter, cheese, and other dairy products have been much higher than in recent years. The price gains are projected to more than offset the 23-percent increase in feed costs resulting in substantially higher average net cash incomes for 2007. Average net cash incomes are also projected to increase for farm businesses that produce hogs and poultry. In comparison with other livestock, cattle receipts for 2007 are not expected to achieve similar gains. They are forecast to rise by 5 percent compared with a projected 9-percent increase in expenses. As a result, the

Defining Farm Businesses

The official USDA farm definition (an operation with $1,000 of gross agricultural sales or the potential to generate such sales) encompasses a widely diverse 2.1 million operations.In order to concentrate analysis of farm business performance on those farms with significant labor allocation to farming and household dependence on business income, several of the farm typology classifications are excluded. These include retirement farms and residential/lifestyle farms (see box, "Farm Types, 2006"). A majority of these farms have negative business income and depend on off-farm sources of income to support their households. Farm businesses, for purposes of performance analysis in this section, include the nearly 800,000 remaining family and nonfamily farms.

Table 14

Change in net cash income by type of farm business operation, 2007

Commodity specialization	Percent change in net cash income	Key determinants of change
Program crops		
Mixed grain	48	Crop receipts up 29 percent, government payments down by 18 percent. Cash expenses 12 percent higher. Fertilizer was largest expense item, forecast to increase by 20 percent.
Wheat	60	Crop receipts up 33 percent. Cash expenses forecast 12 percent higher, Fertilizer was largest expense item, forecast to increase by 20 percent.
Corn	48	Crop receipts up 28 percent, government payments down by 23 percent. Cash expenses 12 percent higher, with fertilizer and seed largest expense component increases.
Soybeans and peanuts	60	Crop receipts up 30 percent, government payments down by 20 percent. Cash expenses 12 percent higher. Fertilizer and seed forecast to have the largest increases.
Cotton and rice	-30	Crop receipts up 9 percent, government payments down by 29 percent. Cash expenses 13 percent higher, with fertilizer, seed, fuel, and labor increasing the most.
Nonprogram crops		
Other field crops	-5	Crop receipts forecast to increase by 12 percent. Government payments down by 16 percent. Cash expenses forecast to increase by 11 percent.
Specialty crops	-8	Crop receipts 5 percent higher. Cash expenses 9 percent higher, with fertilizer (20 percent) and fuels (10 percent) increasing more than other expnse components.
Livestock		
Beef cattle	-9	Livestock receipts up by 5 percent. Cash expenses 9 percent higher. Feed was the largest expense item increase at 23 percent.
Hogs	4	Livestock receipts up by 8 percent. Crop receipts up by 30 percent. Cash expenses 13 percent higher. Feed was the largest expense item increase at 23 percent.
Poultry	10	Livestock receipts up by 23 percent. Cash expenses 11 percent higher. Feed was the largest expense item increase at 23 percent.
Dairy	116	Livestock receipts up by 37 percent. Cash expenses 14 percent higher. Feed was the largest expense item increase at 23 percent.
Other livestock	-40	Livestock receipts up by 3 percent. Cash expenses 10 percent higher. Feed was the largest expense item increase at 23 percent.

Notes: Farm businesses exclude residential/retirement farms whose operators rely primarily on nonfarm income.

Source: USDA, Agricultural Resource Management Survey.

current projection is for net cash income of cattle farm businesses to be 9 percent below 2006 levels.

Geographic concentration of commodity production explains much of the regional variation in the income outlook for farm businesses (table 15). In 2007, local drought impacts, particularly in the Southeast and portions of the West, could further exacerbate regional differences in income. Regions with a relatively high concentration of grain, soybean, and dairy production such as the *Heartland and the Northern Crescent* are forecast to have the largest increases in average net cash incomes. The only region forecast to have a decline in average net cash income for farm businesses from 2006 is the Southern Seaboard (down nearly 5 percent). Poultry and hogs account for a large share of commodity production in this region and most of this production takes place under contract arrangements where the farm operator receives a fee for raising the animals. Despite a projected higher net cash income for farm businesses than 2006, the Prairie Gateway could join the Southern Seaboard as the only two regions where farm businesses' 2007 average net cash income remains below the previous 5-year average.

Debt Use and Farm Business Financial Ratios

Farm solvency, typically measured using the debt-to-asset ratio, provides an indicator of a farm's ability to weather fluctuations in market conditions. Debt levels and solvency are often cited as strong predictors of long-term success. Farm asset values also influence solvency measurement. Land values comprise the majority of farm assets and have risen dramatically in recent years. Over 90 percent of reporting farm businesses in 2006 had healthy debt-to-asset ratios of less than 30 percent (table 16). Interestingly, within the range of debt-to-asset ratios below 40 percent, there are differences in profitability and efficiency that may seem counterintuitive. For example, the implied capital turnover timeframe for operators with debt-to-asset ratios between 11 percent and 40 percent is 3.9 years, calculated by dividing the asset turnover ratio into 100 percent. Farm business operators with the lowest debt-to-asset ratios turn over capital in approximately 7.1 years. The operating

Table 15
Change in net cash income of farm businesses by ERS resource region, 2007

ERS resource region	Percent change in net cash income	Key commodities
Heartland	40	Corn (30%), soybeans (23%), and hogs (18%)
Northern Crescent	59	Dairy (35%), cattle (14%), and nursery or greenhouse (9%)
Northern Great Plains	20	Cattle (49%), wheat (14%), and soybeans (12%)
Prairie Gateway	11	Cattle (55%), corn (12%), and wheat (8%)
Eastern Uplands	8	Poultry (39%), cattle (37%), and dairy (8%)
Southern Seaboard	-5	Poultry (49%), cattle (15%) and hogs (8%)
Fruitful Rim	6	Fruit (29%), nursery or greenhouse (14%), and dairy (14%)
Basin and Range	13	Cattle (43%), other crops (15%), and dairy (14%)
Mississippi Portal	1	Cotton (27%), soybeans (19%), and poultry (17%)

Notes: Farm businesses exclude residential/retirement farms whose operators rely primarily on nonfarm income.

Source: USDA, Agricultural Resource Management Survey.

Table 16
Farm business financial ratios by debt/asset ratio category, 2006

Item	Debt/asset ratio category				
	No long-term debt	Below 0.10	0.11 to 0.40	0.41 or higher	All farm businesses
			Dollars per farm		
Farm assets	1,328,008	2,041,985	1,517,781	1,126,847	1,464,043
Current assets	101,201	191,583	207,438	203,051	147,376
Non-current assets	1,226,807	1,850,402	1,310,343	923,795	1,316,667
Farm liabilities	6,058	87,766	314,060	687,644	141,138
Current liabilities	6,058	25,483	100,482	236,515	48,184
Noncurrent liabilities	0	62,283	213,578	451,128	92,954
Farm equity	1,321,950	1,954,218	1,203,721	439,203	1,322,905
Select financial ratios					
			Ratio value		
Liquidity:					
Current ratio	16.71	7.52	2.06	0.86	3.06
Solvency:					
Debt/asset ratio (percent)	0.46	4.30	20.69	61.02	9.64
Profitability:					
Return on assets (percent)	0.85	1.92	2.98	5.77	1.87
Return on equity (percent)	0.72	1.54	1.88	5.36	1.26
Operating profit margin (percent)	7.40	13.71	11.39	10.59	10.38
Repayment capacity:					
Term debt coverage ratio	na	6.90	2.92	1.73	4.47
Financial efficiency:					
Asset turnover ratio	0.12	0.14	0.26	0.55	0.18
Operating expense ratio (percent)	73.52	73.32	80.14	83.92	77.69
Economic cost—output ratio (percent)	105.54	102.36	101.36	98.06	102.15
Number of farms	418,883	113,543	187,071	55,432	774,929
Percent of farms	54.1	14.7	24.1	7.2	100.0
Percent of value of production	29.7	15.2	36.1	19.0	100.0
Sample size	6,382	2,454	4,737	1,871	15,444

na = Not available.

Note: Farm businesses exclude residential/retirement farms whose operators rely primarily on non-farm income.

Source: USDA, Agricultural Resource Management Survey.

expense ratios all exceed 70 percent and generally increase across the range of debt-to-asset ratios. Already tight cash margins are further squeezed by interest payments on debt, which can add as much as 10 percent to the operating expense ratio.

Comparing solvency to profitability measures also provides some interesting results as the return on assets and the return on equity both increase with larger debt-to-asset ratios despite the fact that farm businesses in each category hold significant equity. Farm businesses with low equity positions can have large returns on equity. Finally, the operating profit margin is slightly healthier at 13.7 percent and 11.4 percent for those reporting farms businesses with debt-to-asset ratios less than 40 percent than for farm businesses carrying zero debt in 2006. In summary, the results suggest that a higher debt-to-asset ratio does not necessarily imply poor performance, efficiency, or profitability of the farm business operation.

More than half of all farm businesses (54 percent) had no year-end notes payable at the end of the year, though many did have lines of credit or production loans that were repaid during the year. Access to credit and its use in the operation of the farm business depends on both the willingness and abilities of borrowers and lenders. Access to credit has direct implications for household welfare and business performance, since credit can be used to increase the equity in the business over time. A farm operator may also benefit from mere access to credit. Access to credit helps avoid risk-reducing, but inefficient, income diversification strategies or engaging in precautionary savings that reduces overall returns.

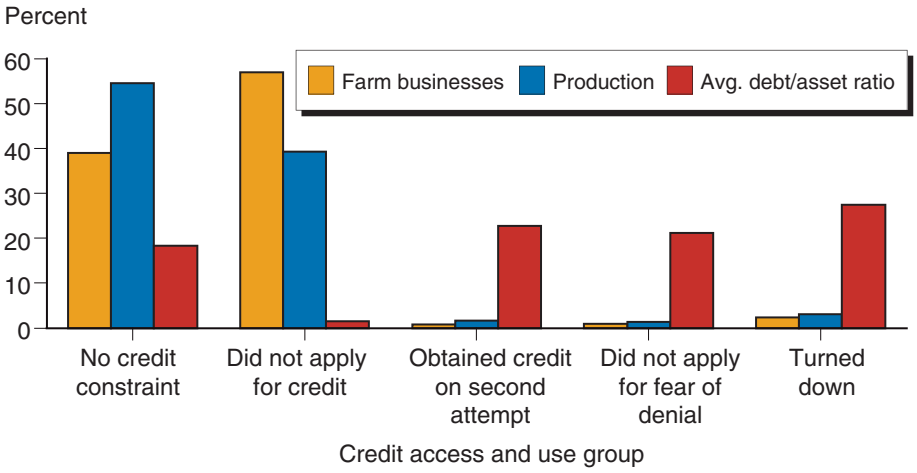
In 2006, very few farm businesses (3.2 percent) were denied credit or did not apply for additional credit because of fear of denial (fig. 36). Those that were turned down, on average, had higher debt-to-asset ratios, lower farm equity, and lower farm earnings when compared with farm businesses that had no problems borrowing or did not have debt. Credit-constrained farm businesses account for about 4.5 percent of total production by farm businesses and were more heavily concentrated in poultry production and capital intensive crops such as cotton and wheat. Almost half of credit constrained farm businesses did not have a line of credit and 46 percent reported using off-farm income to support the farm business.

Overall Financial Performance of Farm Businesses

The distribution of farm businesses by overall financial performance mirrors the sector-wide trends during 2002-06 (fig. 37). The highest share of farm businesses categorized as financially vulnerable (5.4 percent) and the lowest proportion considered financially favorable (58.3 percent) occurred in 2002 (See box, "Classifying Overall Financial Performance"). This was the only year during this period when the share of farm businesses with a favorable financial performance fell below 60 percent. The highest percentage of favorable farm businesses (70 percent) occurred in 2005, while the lowest share of

Figure 36

Number of farm businesses, production, and average debt/asset ratio by credit access and use, 2006



Source: USDA, Agricultural Resource Management Survey.

Classifying Overall Financial Performace

The overall financial performance of farm business operations can be evaluated by considering their combined net income and solvency positions. Both the debt/asset ratio (a measure of business solvency) and net farm business income (a measure of business profitability) have limitations when considered independently. A high debt/asset ratio may be acceptable if a farm business generates enough income to service debt and meet other financial obligations. Periods of low or negative income, similarly, may not pose major financial difficulties if the farm business operation is carrying a low debt load and can either borrow against assets or use other sources of income outside the farm business. To reflect this range of financial situations, we use a framework based on the combined income and debt/asset ratio position of each farm business.

Favorable = Positive income and a debt/asset ratio less than 0.40. These profitable, low-leverage farm business operations are able to retain earnings, putting them in a position to take advantage of investment and expansion opportunities.

Marginal income = Negative incomes and a debt/asset ratio of 0.40 or less. These farm businesses generally face an earnings problem that could be overcome with increased borrowing or sales of assets, both of which convert equity to cash.

Marginal solvency = Positive income and debt/asset ratios above 0.40. Farm businesses in this category generate positive returns, despite higher debt service requirements. While not experiencing earnings difficulties at the present time, they are susceptible to economic changes that may erode incomes and prevent them from meeting future cash commitments. At current asset values, equity on these farm businesses may be insufficient to serve as security for additional borrowing to meet short-run cash needs.

Vulnerable = Negative income and debt/asset ratios above 0.40. Many of these farms are highly leveraged and have income deficiencies that diminish the viability of their business operations. They do not generate sufficient income either to meet current expenses or to reduce existing indebtedness.

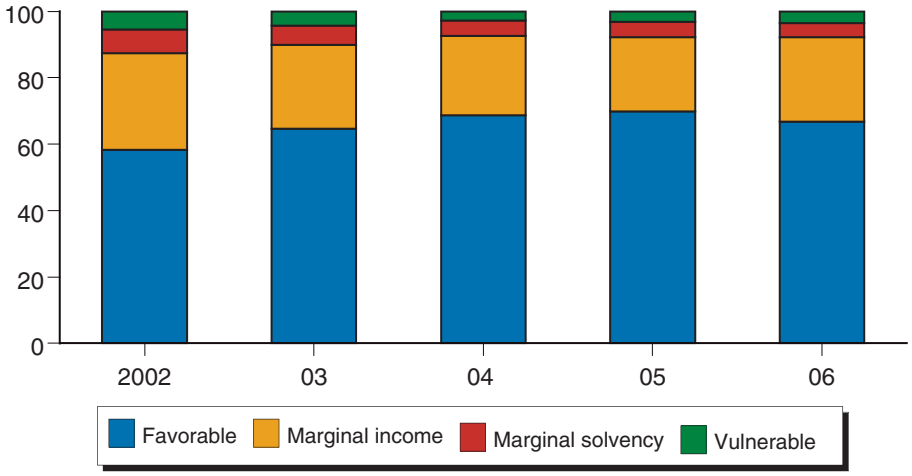
vulnerable farm businesses was for 2004 (2.8 percent) confirming the favorable financial conditions in agriculture during those 2 years. The first decline since 2002 in the share of favorable farm businesses occurred in 2006. The decline occurred when farm businesses that were classified as in a favorable financial position in 2005 shifted into the marginal income category having relatively low debt, but negative net farm income.

Not all regions followed this pattern of performance during 2002-06. In most regions the highest proportion of vulnerable farm businesses occurred in 2002. Two exceptions were the Eastern Uplands region and the Basin and Range region where the highest share of vulnerable farm businesses occurred in 2003 (fig. 38). The Basin and Range region had the highest share of vulnerable farm businesses in 2005 at 5.2 percent and the Mississippi Portal

Figure 37

Percent of distribution of farm businesses by overall financial performance, 2002-06

Percent

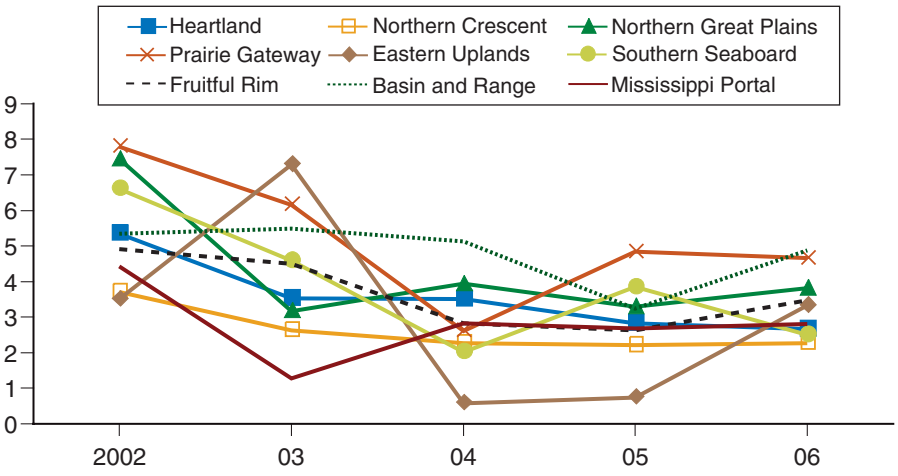


Source: USDA, Agricultural Resource Management Survey.

Figure 38

Percent of farm businesses classified as financially vulnerable by farm resource region, 2002-06

Percent



Source: USDA, Agricultural Resource Management Survey.

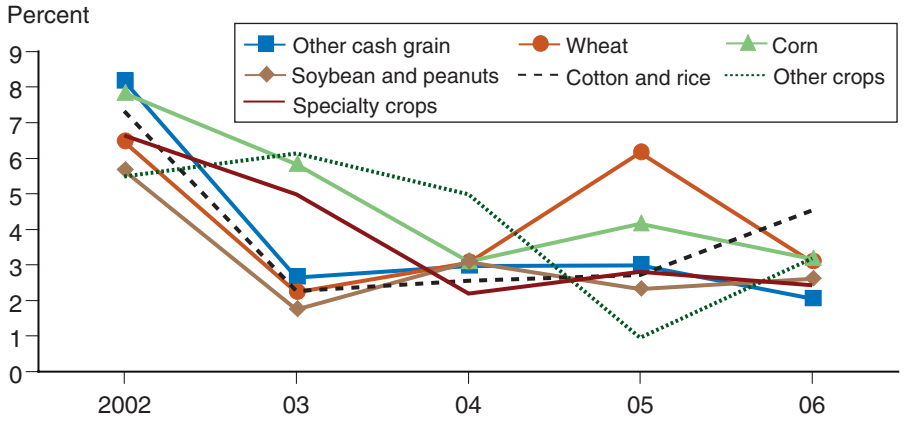
the lowest at 2.3 percent. Except for 2005, the share of farm businesses in the Basin and Range region classified as financially vulnerable has exceeded 5 percent during each year from 2002-06. Many parts of this region have endured prolonged drought during the period.

As was the case across production regions, most crop production specialties had the highest proportion of farm businesses classified as financially vulnerable in 2002 (fig. 39). The lone exception was other crop farm businesses where the highest share of vulnerable farms was in 2003. In 2006, the highest share of vulnerable farm businesses was for cotton and rice farms

at 4.6 percent. A year earlier, wheat farm businesses had the highest share among crop farm business producers at nearly 6.1 percent. During 2002-06, most farm businesses that specialized in livestock production had the highest proportion of vulnerable farms in 2002 (fig. 40). The only exception was for those that specialized in other livestock. They had the highest share of farm businesses classified as vulnerable in 2006, and along with poultry had the highest percentages in that category.

Figure 39

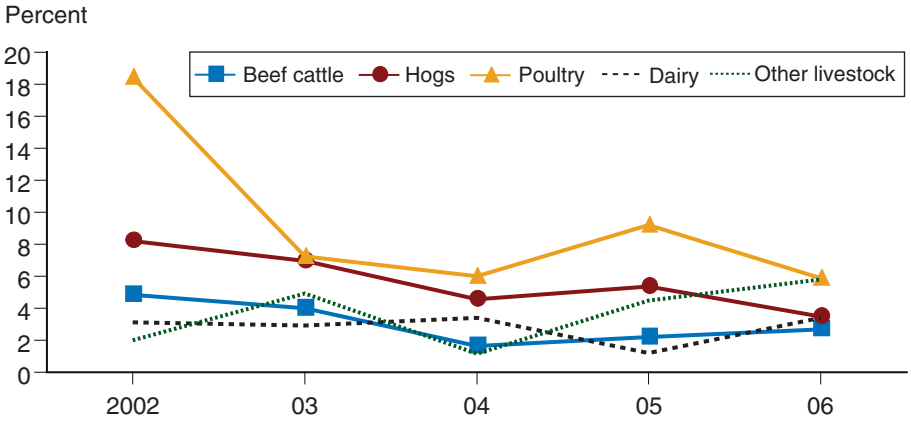
Percent of farm businesses that specialize in crop production classified as financially vulnerable, 2002-06



Source: USDA, Agricultural Resource Management Survey.

Figure 40

Percent of farm businesses that specialize in livestock production classified as financially vulnerable, 2002-06



Source: USDA, Agricultural Resource Management Survey.

Farm Household Income Rebounds in 2007

Household income from farm sources forecast to increase by 30 percent in 2007

Average farm household income of principal farm operators—from farm and off-farm sources—is forecast to be $83,622 in 2007, up 7.7 percent from 2006 and 11.4 percent higher than the 2002-2006 average (table 17). (See Boxes, "How Does USDA Define Farm Operator Households?" and "How is Household Income Defined?") The size of the 2006-07 increase reflects the fact that average farm household income in 2006 was down compared to the previous year. In 2006, average farm household income of $77,654 was down 4.8 percent relative to 2005.

Median farm household income in 2006 was $54,835; in contrast to the average household income, median household income actually increased in 2006, but by only 2.1 percent. (Median household incomes are not available for 2007.) The median is the income level at which half of all households have lower incomes and half have higher incomes. As a result, median incomes are less influenced by very high and very low income households than are averages; median income generally is lower than average income, and is less variable.

Average household income from farm sources is forecast to increase by more than 30 percent between 2006 and 2007, from $8,406 to $11,159; in contrast, household income from off-farm income sources is forecast to increase by less than 5 percent to $72,463. As a result, the average share of farm household income from farm sources is expected to increase from 11 percent in 2006 to 13 percent in 2007. Nonetheless, the long-term trend has farm operator households increasing their reliance on off-farm income. Approximately, 70 percent of farm operator households have either an operator or spouse of an operator working at an off-farm job. Only for the households that operate the largest 8 percent of farms (with sales of $250,000 or more) is average farm income greater than off-farm income in a typical year.

As described earlier in this report, a variety of factors determines changes in farm income. The 2006-07 increase is chiefly the result of high commodity prices. High commodity prices resulted from strong demand, rather than reduced supplies due to lower production. Consequently, the value of both crop and livestock production are forecast to be at record highs in 2007. While expenses have also increased and government payments were down in 2007, the relatively large increase in the value of sales of commodities has resulted in a significant increase in farm earnings for U.S. farm operator households.

Household Income Prospects Vary by Commodity Specialization

While generally positive in 2007, market conditions differed across commodities and translated into differing rates of change in household income by the type of commodity in which a farm operator household specializes (fig. 41). Nowhere was this more evident than for households that operated dairies. About 3 percent of all farm households specialize in dairy production, which

Table 17

Average income to farm operator households, 2002-07

	2002	2003	2004	2005	2006	2007	2006/ 2005	2007/ 2006	2007/ 2002-06 avg.
	Dollars per farm household						*Percent change*		
Net cash farm business income	11,336	14,979	20,624	20,566	16,242	19,880	-21.0	22.4	18.7
Less depreciation	8,189	7,334	7,909	7,588	7,561	na	na	na	na
Less wages paid to operator[1]	758	695	747	426	79	na	na	na	na
Less farmland rental income[2]	621	864	806	955	1,040	na	na	na	na
Less adjusted farm business income due to other household(s)	1,248	1,344	2,955	1,954	1,544	na	-21.0	na	na
Less corporate retained income and dividends paid to others	na	na	na	na	920	na	na	na	na
Equals adjusted farm business income	520	4,742	8,206	9,643	5,098	na	-47.1	na	na
Plus wages paid to operator[1]	758	695	747	804	439	na	na	na	na
Equals farm self-employment income	1,278	5,437	8,953	10,447	5,537	na	na	na	na
Plus other farm-related earnings[3]	2,199	2,447	5,363	4,414	2,869	na	na	na	na
Equals earnings of the operator household from farming activities	3,477	7,884	14,317	14,860	8,406	11,159	-43.4	32.8	14.0
Plus earnings of the operator household from off-farm sources[4]	62,284	60,713	67,279	66,738	69,248	72,463	3.8	4.6	11.1
Equals average money income to farm operator households	65,761	68,597	81,596	81,599	77,654	83,622	-4.8	7.7	11.4
Median money income to farm operator households	46,491	47,692	53,651	53,684	54,835	na	2.1	na	na
	Dollars per U.S. household						*Percent change*		
U.S. average household income	57,852	59,067	60,466	63,344	66,570	na	5.1	na	na
U.S. median household income	42,409	43,318	44,334	46,326	48,201	na	4.0	na	na
	Percent						*Percent change*		
Average farm operator household income as percent of U.S. average household income	113.7	116.1	134.9	128.8	116.7	na	na	na	na
Median farm operator household income as percent of U.S. median household income	109.6	110.1	121.0	115.9	113.8	na	na	na	na
Average operator household earnings from farming activities as percent of average operator household income	5.3	11.5	17.5	18.2	10.8	13.3	-40.6	23.3	5.3

Note: 2007 is a forecast. na = not available.

[1]Net cash farm business income is net of wages paid to operators if the farms are organized as corporations. For other types of organizations, wages paid to operators, or a draw, are not expensed, therefore, an adjustment is made to net cash farm business income equal to these wages, or draw. For all organizations, the wages, or draw are included as farm income to the household.

[2]Gross rental income is subtracted and net rental income from the farm is added below to income received by the household.

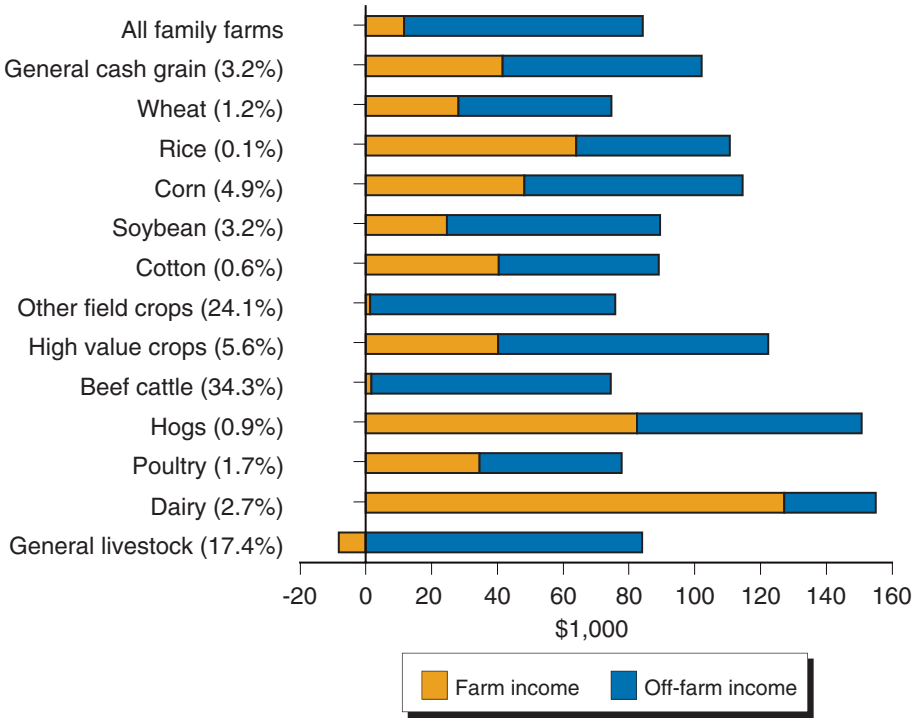
[3]Wages paid to other operator household members by the farm business and net income from a farm business other than the one being surveyed. In 2002 only, also includes the value of commodities provided to household members for farm work. Starting in 2003, this category includes net income from farmland rental.

[4]Only in 2002, also includes net cash income from farm land rental.

Sources: USDA, Agricultural Resource Management Survey and U.S. Census Bureau, Current Population Survey.

Figure 41

Average farm household income varies by farm type by specialization in 2007



Note: 2007 is forecast. The share of U.S. family farms in each type is in parentheses.

Source: USDA, Agricultural Resource Management Survey.

is less than half the share two decades earlier. For the first time in recent history, these households were forecast to have the highest average income of all farm specialties—$148,159. Dairy households have the least reliance on off-farm sources of income because of the extensive time commitment involved in operating a dairy farm. In addition, dairy receipts in 2007 are forecast to be the highest on record and represent the largest increase of any commodity. Consequently, household income for those specializing in dairy production is forecast to more than double in 2007.

Households that specialize in hogs are also forecast to have relatively high household income of $147,226 in 2007. These households have experienced steady growth in both farm and off-farm income over the last 5 years. Hog production has consolidated on fewer farms over time and currently only 1 percent of farm households specialize in hog production.

Households that specialize in high-value crops (defined as greenhouse, nursery, fruits, nuts and vegetables, and also referred to as specialty crops), are also forecast to have relatively high household incomes in 2007, of $120,976. About 6 percent of farm operator households specialize in high-value crops, and like many livestock producers, receive little in the way of farm program payments. Though they incur nearly half of all hired labor expenses in agriculture, households that specialize in high-value crop production have had consistently higher household incomes during the 2002-06 period, so the 2007 forecast does not represent a major change from the recent past.

How Does USDA Define Farm Operator Households?

The farm operator household population includes all persons who share the dwelling unit with a principal operator of a family farm. (It also includes students away at school supported by the principal operator households who, if not otherwise away at school, would be sharing a dwelling unit with the principal operator.) To understand this definition, requires an understanding of the definition of a family farm and a principal farm operator. A farm is defined as any place from which $1,000 or more of agricultural products were produced and sold, or *normally would have* been sold, during the year. Since the definition allows farms to be included even if they did not have at least $1,000 in sales, but *normally would have*, a system has been developed by USDA's National Agricultural Statistics Service for determining how much a farm *normally would have* sold in a given year. If a place does not have $1,000 in sales, a "point system" assigns dollar values for acres of various crops and head of various livestock species to estimate a normal level of sales. Point farms are farms with fewer than $1,000 in sales but have points worth at least $1,000. More than one-quarter of farms have no sales in a typical year, and at least another 30 percent have positive sales of less than $10,000.

The current definition of a family farm for the 2005 and 2006 estimates based on the Agricultural Resource Management Survey is one in which the majority of the business is owned by individuals related by blood, marriage, or adoption. In 2005, 94 percent of farms were classified as family farms, as were 96 percent in 2006.

The farm operator is the person who runs the family farm, making the day-to-day management decisions. In the case of multiple operators, the respondent for the farm identifies who the principal farm operator is during the data collection process. USDA provides financial information for principal farm operators of family farms and their households, referred to as farm operator households in this publication. For farms where there is more than one operator and the multiple operators do not share a housing unit, detailed household data and off-farm income are not collected for the additional operators on either the Census of Agriculture or the ARMS—household data is only collected for a single principal operator. In addition, USDA does not provide information on the financial position of farm operator households who operate nonfamily farms.

Households specializing in cash grains are expected to see double-digit rates of increase in average household income in 2007. Again, it is largely a story of strong commodity prices for cash grains in 2007, due to strong domestic and international demand. The 5 percent of households specializing in corn production are forecast to have the highest household income in 2007 of all the cash grain producers. Their forecasted 2007 household income was $116,314.

In sharp contrast, households specializing in cotton production are forecast to experience a 29.6 percent drop in average household income in 2007 because of a decline in cotton cash receipts. In part, the decline in 2007 farm returns

How is Household Income Defined?

USDA's definition of farm household income parallels that of the U.S. Census Bureau's definition of household income for all U.S. households in the Current Population Survey (CPS). The CPS definition includes all cash income of the household, except in the case of self-employment income (like farming) the definition departs from a strictly cash concept by deducting depreciation, a noncash business expense, from the income of self-employed people.

There are several factors that affect how much of the farm business income is earned by the household of the principal operator, including:

- Some farms have multiple operators who do not share a single household. In such cases, household income is calculated only for the principal farm operator's household and includes only that household's share of farm business income.
- Also, if a farm is organized as a C-corporation, the profit that the firm generates is retained by the business until the business pays out those earnings in the form of dividends. In 2006, for C-corporations, farm business dividends paid to the principal operator household are included in household farm income. (The remaining profit of C-corporations is retained by the farm business or paid to other shareholders and not reflected in the principal farm operator household income.)
- Operators of C- and S-corporations may also pay themselves a wage for operating the farm and those payments are included both as an expense to the business and an income to the farm household when they are paid.

In addition, other farm-related earnings, such as rental income from another farming operation, are included as income in the calculation of earnings of the operator household from farming activities. Earnings of the operator household from farming activities as defined in the USDA measure are not a complete measure of the returns provided by the farm. It leaves out some resources the farm business makes available to the household. For example, depreciation is an expense deducted from income that may not actually be spent during the current year. Increases in inventories are excluded from the earnings measure, but they could be sold to raise cash. Nonmoney income, such as the imputed rental value of a farm-owned dwelling, represents a business contribution to household income because it frees up household cash that would otherwise be spent on housing. Finally, farm losses, or negative farm earnings, of the operator household can reduce the income taxes paid on off-farm sources of income.

In order to calculate total operator household income, the earnings of the operator household from farming activities is added to the income from off-farm sources. Off-farm income may come from a variety of sources, including wages and salaries, off-farm self-employment, interest, dividends, private pensions, Social Security, veteran benefits, and other public programs.

for households that specialize in cotton is the result of the drop in the yields and harvested acres in the 2006-07 crop year from the previous August-July marketing year. In addition, U.S. cotton producers are greatly affected by the world market since the United States is the leading exporter of raw cotton. The 2007 forecast represents the first time in recent history that households that specialize in cotton had average household incomes below those of cash grain producers.

Most farm operator households either specialize in beef cattle (34.3 percent) or do not have a production specialty, and are classified as other field crops (24.1 percent) or general livestock (17.4 percent). Combined, they account for three-quarters of all farm operator households and generally operate smaller farms that often lose money from their farming operation. For 2007, households with these production mixes are forecast to experience a slight decline in returns from their farming operations. However, they are forecast to have high income from off-farm sources in excess of $70,000 for 2007. The only other farm operator households with average off-farm sources of income in that range are those specializing in high value crops.

Farm Household Net Worth

Equity, or net worth, is the difference between assets and debts, as of the last day of the year. Many farm operator households generate low earnings, or even lose money, from their farms in any particular year. Therefore, net worth is a useful indicator of well-being. Net worth provides a longer term perspective, since a net worth position at a point in time reflects the accumulation of wealth over time. In short, the typical farm operator household is in a historically strong financial position (table 18). In 2006, the average net worth of farm operator households was $895,756, and the median net worth was $548,193. (USDA does not forecast farm operator household net worth for 2007. The 2006 estimate is based on farm survey data, collected in 2007, for the end of the calendar year 2006.) The debt-to-asset ratio of farm operator households in 2006 was 10 percent, with average assets of $982,672 and average debt of $98,625.

Farm assets represent about three-quarters of the assets, and net worth, of farm operator households. Most of this is in the form of farm land, which has experienced continual increases in value for the most recent 5-year period and before. The remaining quarter of the net worth of farm operator households in 2006 was a very mixed portfolio. Retirement accounts represented 22 percent and real estate other than the farms they operated represented 21 percent of the average nonfarm assets of farm operator households. The largest growth in the nonfarm assets portfolio has been in businesses other than the farms they operate. Those businesses accounted 18 percent of their nonfarm assets in 2006, on average.

Size of Farm Operated Is a Key Determinant of Financial Well-Being

For those with knowledge of the financial well-being of farm operator households it is commonplace, and even clichéd, to describe the farm operator household population as diverse. Nonetheless, it is true. This occurs because

Table 18

Financial balance sheet for operator households of family farms, 2002-06

Item	2002	2003	2004	2005	2006	2006/2005
	Dollars per farm household					Percent change
Assets						
Total household assets--mean	630,840	779,644	818,190	904,672	982,672	8.6
Total household assets--median	401,875	484,463	508,325	564,322	602,750	6.8
Household farm assets--mean	482,871	557,794	601,273	677,118	738,228	9.0
Share of total assets	76.5	71.5	73.5	74.8	75.1	0.4
Household non-farm assets--mean	147,969	221,850	216,917	227,554	244,444	7.4
Share of total assets	23.5	28.5	26.5	25.2	24.9	-1.1
Composition of non-farm assets--percent						
Financial assets held in non-retirement accounts	na	31.3	14.3	15.4	13.6	-11.7
IRA, Keogh, 401k, and other retirement accounts	na	17.2	25.0	24.3	22.2	-8.6
Operator dwelling, not owned by operation, and other personal homes	na	17.1	13.5	13.8	14.7	6.7
Real estate--other farms, residential rental, and other	na	18.9	25.0	23.0	20.7	-10.1
Business not part of this farm	na	8.4	13.0	14.1	17.8	26.2
All vehicles--household share	na	0.0	0.0	0.0	8.4	0.0
Other assets not reported elsewhere	na	7.1	9.2	9.4	2.5	-73.1
Debt						
Total household debt	90,911	97,803	90,903	95,582	98,625	3.2
Total household debt--median	26,268	35,261	27,038	22,130	23,400	5.7
Household share of farm debt	56,686	55,539	56,674	54,855	59,165	7.9
Share of total debt	62.4	56.8	62.3	57.4	60.0	4.5
Operator household non-farm debt	34,226	42,264	34,229	40,728	39,460	-3.1
Share of total debt	37.6	43.2	37.7	42.6	40.0	-6.1
Composition of non-farm debt						
Mortgages on operators dwelling--if not owned by operation	na	45.5	29.2	30.0	26.7	34.2
Mortgages on other real estate	na	27.9	33.6	29.8	34.7	31.1
Loans on businesses not a part of this operation	na	14.8	19.0	23.5	22.3	19.3
Personal loans--credit cards, auto loans, any other debts not reported elsewhere	na	11.9	18.2	16.7	16.3	15.4
Net worth						
Operator household net worth	539,928	681,841	737,763	819,329	895,756	9.33
Operator household net worth--median	335,915	415,825	456,914	500,502	548,193	9.53
Operator household share of farm net worth	426,185	502,256	544,599	622,264	679,063	9.13
Share of total net worth	78.9	73.7	73.8	75.9	75.8	-0.18
Operator household non-farm net worth	113,743	179,585	193,165	197,065	216,692	9.96
Share of total net worth	21.1	26.3	26.2	24.1	24.2	0.58
Operator household debt to asset ratio	0.14	0.13	0.11	0.11	0.10	-5.01

na = information not collected in 2002 ARMS.

Source: USDA Agricultural Resource Management Survey.

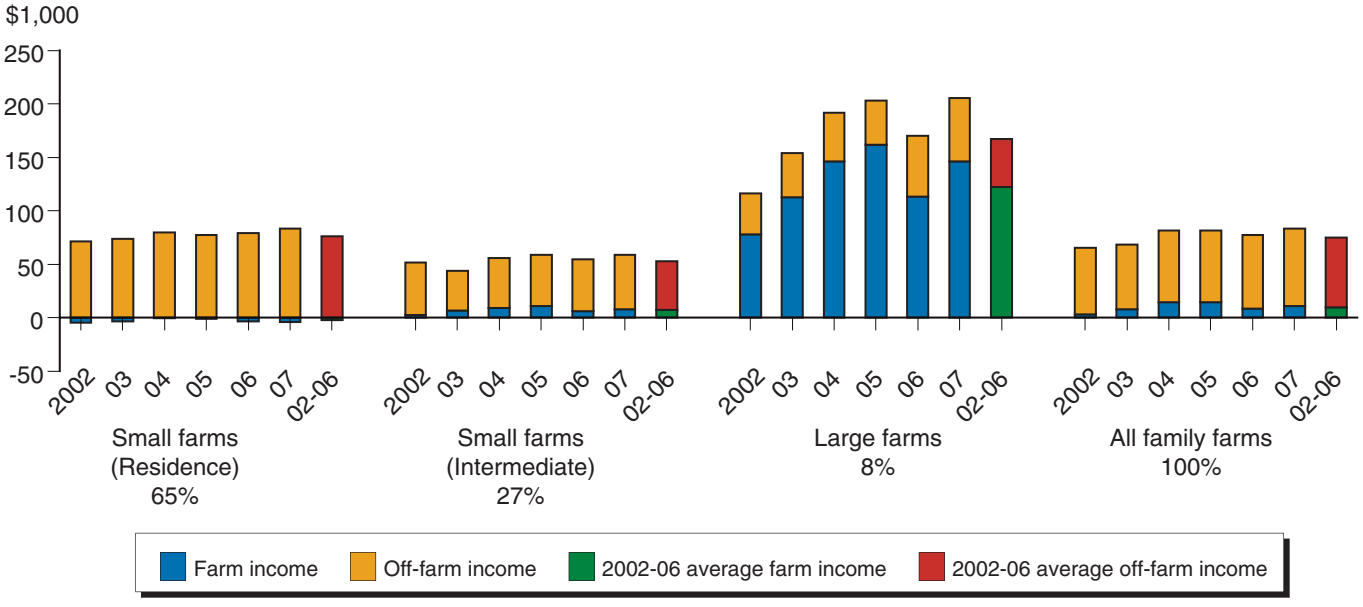
of USDA's very liberal definition of a farm, which includes many small farms that produce little, if any, agricultural commodities in a given year along with farms that produce more than $10 million in product. (See, box, "How Does USDA Define Farm Operator Households?") Hence, the greatest diversity in the farm operator household population is evident when farms are disaggregated by farm size. Small farms are commonly defined to be those with sales of less than $250,000 and large farms, also referred to as commercial farms, have sales of $250,000 or more. In the ERS typology, small farms include residence farms and intermediate farms. Intermediate farms have a principal operator who indicated that farming was his or her major occupation; the major occupation of residence farm operators was not farming or the operator indicated that he or she was retired from farming.

Large-farm, or commercial-farm, households (8 percent of family farms) are forecast to have an average 2007 household income of $205,654. They rely more on farm income than other farm households; farm income is expected to constitute 71 percent of their total 2007 household income. The positive farm sector returns for 2007 largely explains the 21-percent increase in household income for commercial farm households in 2007 (fig. 42).

Operator households of intermediate family farms (27 percent of family farms) receive a much smaller share of their household income from farm sources than do commercial farm households. With farm income contributing 13 percent of total income in 2007, total household income for these households is forecast at $58,700, up 7.7 percent from 2006. Most family farms (65 percent) are classified as residence farms. The total household income of residence farm operators is forecast to reach $79,465 in 2007, an increase of 4.1 percent from 2006.

Figure 42

Average farm and off-farm income of farm operator households by farm size, 2002-07



Note: 2007 is forecast. Small farms have gross sales below $250,000.

Source: USDA, Agricultural Resource Management Survey.

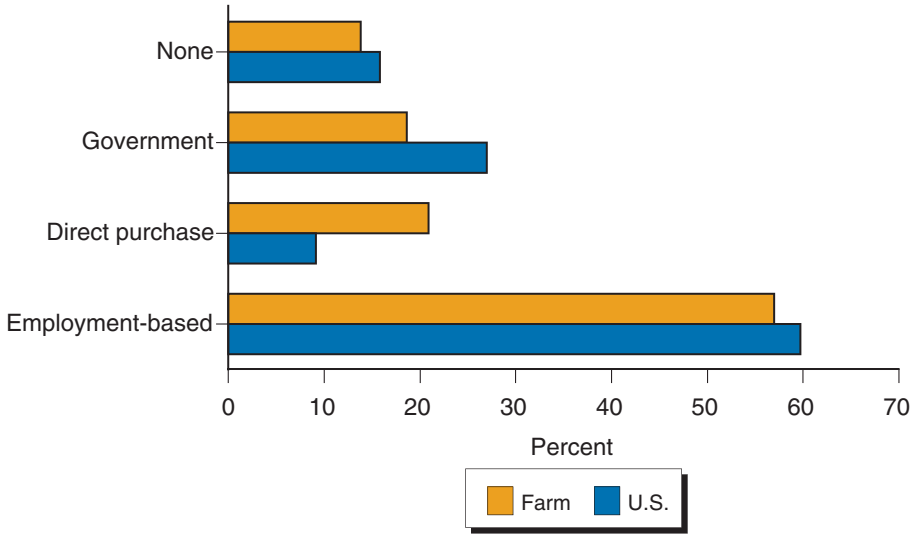
The size of a farm is closely linked to the off-farm income of a farm operator household. Since small farms require less farm labor, unless operators are retired, they are likely to work off the farm. Off-farm work can be important because of its link to more affordable health insurance coverage. Many Americans receive health insurance through their employers. As with the general population, the most common source of health insurance for members of farm households is employment-based. In fact, farmers are almost as likely as the general U.S. population to receive their health insurance through an outside employer (fig. 43). Only about 6 percent of farmers received their health insurance through the farm businesses they operated in 2006. Farmers were more likely than the general population to directly purchase their health insurance from an insurance company, and less likely to receive health insurance from a Government-sponsored program, such as Medicare, Medicaid, or the Veterans Administration.

The Importance of Government Payments to the Income of Farm Operator Households

The majority of U.S. farm operator households do not receive government payments under commodity or conservation programs. In 2006, 42 percent of farm operator households received some type of farm payment. Since many farm households that receive government payments operate large farms, they are similar to all large farms in terms of receiving a relatively high share of their household income from farming sources, and a relatively lower share from working off the farm. Government farm program payments cannot easily be described as a share of the farm operator household income because payments and business farm income are sometimes shared by multiple households—and are more likely to be for larger farms—and because receipt of payments often requires that farms incur costs. For example, receipt of conservation payments often requires farms to incur costs to adopt

Figure 43

Type of health insurance coverage for farm households and all U.S. households, 2006



Sources: USDA, Agricultural Resource Management Survey and the U.S. Census Bureau, Current Population Survey.

conserving practices. However, it is interesting to consider farm operator household income sources by the farm program payment levels of the farms they operate.

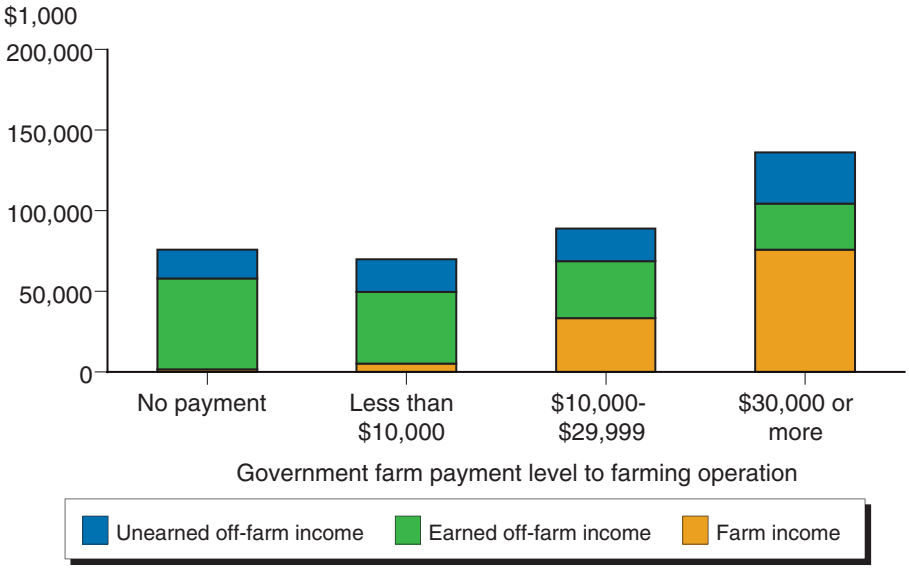
In 2006, most of the U.S. family farms that received farm program payments received less than $10,000 in payments (fig. 44). Households operating farms that received no payments actually had higher average household incomes than farms that received less than $10,000 in farm payments. However, the farm operator households operating farms that received $10,000 or more in farm payments had above-average household incomes as a result of their greater farm incomes. Most farm payments are commodity-related payments, not conservation payments. Generally, farms with the highest payments receive a higher share of payments under commodity programs, not conservation programs.

Commodity payments are designed to support production of cash grains, rice and cotton and other crops, while conservation payments generally target acres and/or production practices that will generate environmental benefits. Hence, these programs have explicit or implicit national policy goals and do not target benefits based on individual characteristics of farmers or farm households. More recently, USDA has targeted farmer groups based on personal characteristics of farmers, termed "limited resource farmers" and "beginning farmers," to receive special consideration for participation in government farm payment and loan programs. USDA also has educational programs focused on "socially disadvantaged farmers." (See box, "How Are the Targeted Farmer Populations Defined?")

During the current policy debates regarding the redesign of farm programs, there has been an increased emphasis on targeting government payments and loans to these populations. Consequently, it is relevant to consider the size of

Figure 44

Sources of income for farm operator households by farm payments, 2006



Source: USDA, Agricultural Resource Management Survey.

How Are The Targeted Farmer Populations Defined?

Beginning Farmer or Rancher—A farmer or rancher who has not operated a farm or ranch for more than 10 years. This 10-year requirement applies to all operators, defined as members of an entity who will materially and substantially participate in the operation of the farm or ranch. Different USDA programs, with differing goals, have additional criteria placed on the definition of a beginning farmer or farm. In using the 2006 Agricultural and Resource Management Survey to identify beginning farmers, the consecutive work experiences of up to three operators farming their current or other farms was considered.

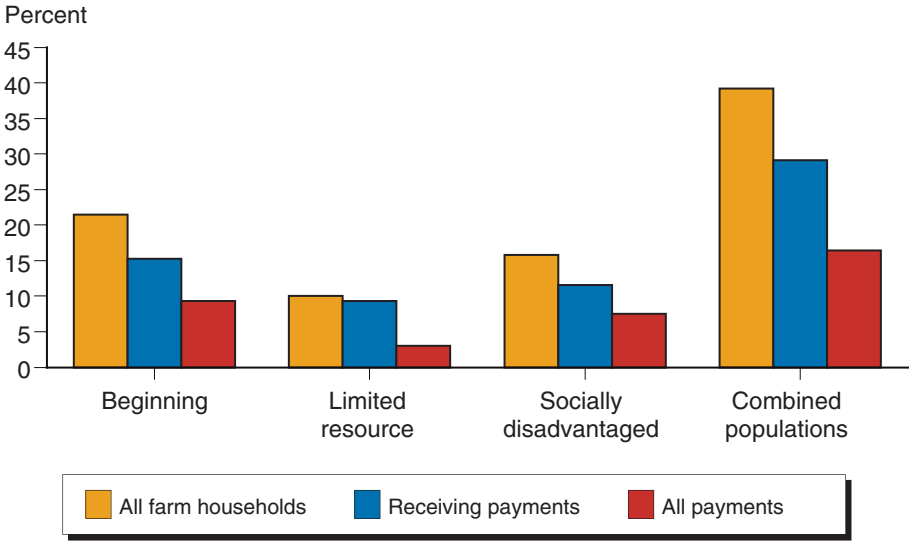
Limited Resource Farmer or Rancher—A farmer or rancher who: (a) operates a farm with direct or indirect gross farm sales of not more than $100,000 in each of the previous two years (to be increased beginning in fiscal year 2004 to adjust for inflation using Prices Paid by Farmer Index as compiled by NASS) and (b) has a total household income at or below the national poverty level for a family of four, or less than 50 percent of county median household income, in each of the previous two years (to be determined annually using Commerce Department data). USDA's Farm Service Agency (FSA) uses a different definition in the implementation of its loan programs. FSA's definition focuses on the ability of a farmer to cash flow the requested loan.

Socially Disadvantaged Farmer or Rancher—A farmer or rancher who is a member of a group whose members may have been subjected to racial or ethnic prejudices because of their identity as members of a group without regard to their individual qualities. Socially disadvantaged groups include, women, African Americans, Native Americans, Alaskan Natives, Hispanics, Asians, and Pacific Islanders. Farmers in this category have not necessarily experienced prejudices, although they have one or more of these personal characteristics. In using the 2006 Agricultural and Resource Management Survey, the personal characteristics of the principal operators were used to identify socially disadvantaged farmers.

these farmer populations. In 2006, 22 percent of family farms were considered as being operated by beginning farmers, 10 percent of family farms were defined as limited resource, and 16 percent were defined as socially disadvantaged (fig. 45). Of course, there is overlap among these groups; combined, 39 percent of all family farms were classified as one or more of these targeted groups in 2006. Those groups are less likely to participate in government farm payment programs than other farm households and they receive a relatively small share of the total payments. The three targeted groups combined made up 39 percent of all U.S. farms in 2006, but 29 percent of farms that participated in farm payment programs. The combined group received 16 percent of all payments in 2006.

Figure 45

Farm populations targeted by USDA farm programs, 2006



Source: USDA, Agricultural Resource Management Survey.

Well-Being of Farm Households Compared to the U.S. Population

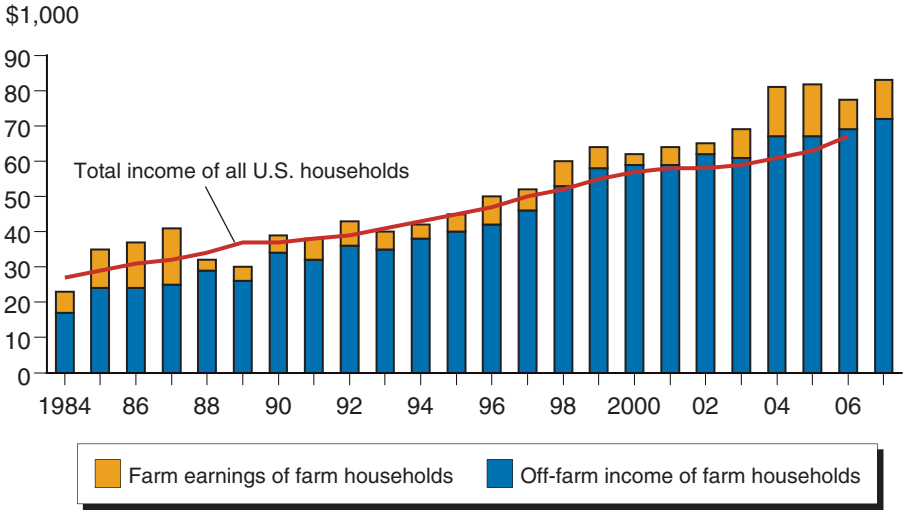
In 2006, the income of farm households exceeded that of all U.S. households–median farm household income was 14 percent higher and average farm household income was 17 percent higher.

Since the 1980s, ERS has reported a money income measure for farm operator households that is comparable to the measure of the U.S. Census Bureau reports for all U.S. households. Farm household income is highly variable through the years, primarily due to the year-to-year volatility of farm income. Nonetheless, for every year since 1996, average income of farm households has exceeded average U.S. household income (fig. 46). In fact, just the off-farm income component of average farm operator household income has exceeded the average U.S. household income from all sources since 1998. The average income of farm operator households in 2006 was $77,654 compared to the average income of all U.S. households of $66,570. The respective median incomes are $54,835 and $48,201.

Starting in 2003, the sample size of USDA's Agricultural Resource Management Survey (ARMS) has been large enough to allow for statistically reliable estimates of farm and operator household income in 15 major agricultural States. Family farms in California realized the highest average farm household income of the 15 major agricultural States in 2006. They also realized the highest average farm income. High-value crop farms comprised more than half of California's family farms, and crop production contributed about two-thirds of the State's total value of production. Farm operator households in California had average incomes above the average for all households in the State. But, California is not unusual in that regard. Average income of farm operator households exceeds the average income of all households in each of the 15 States for which State-level estimates are avail-

Figure 46

Average farm operator household income by source compared to all U.S. household income, 1984-07



Note: 2007 forecast.

Source: USDA, Agricultural Resource Management Survey.

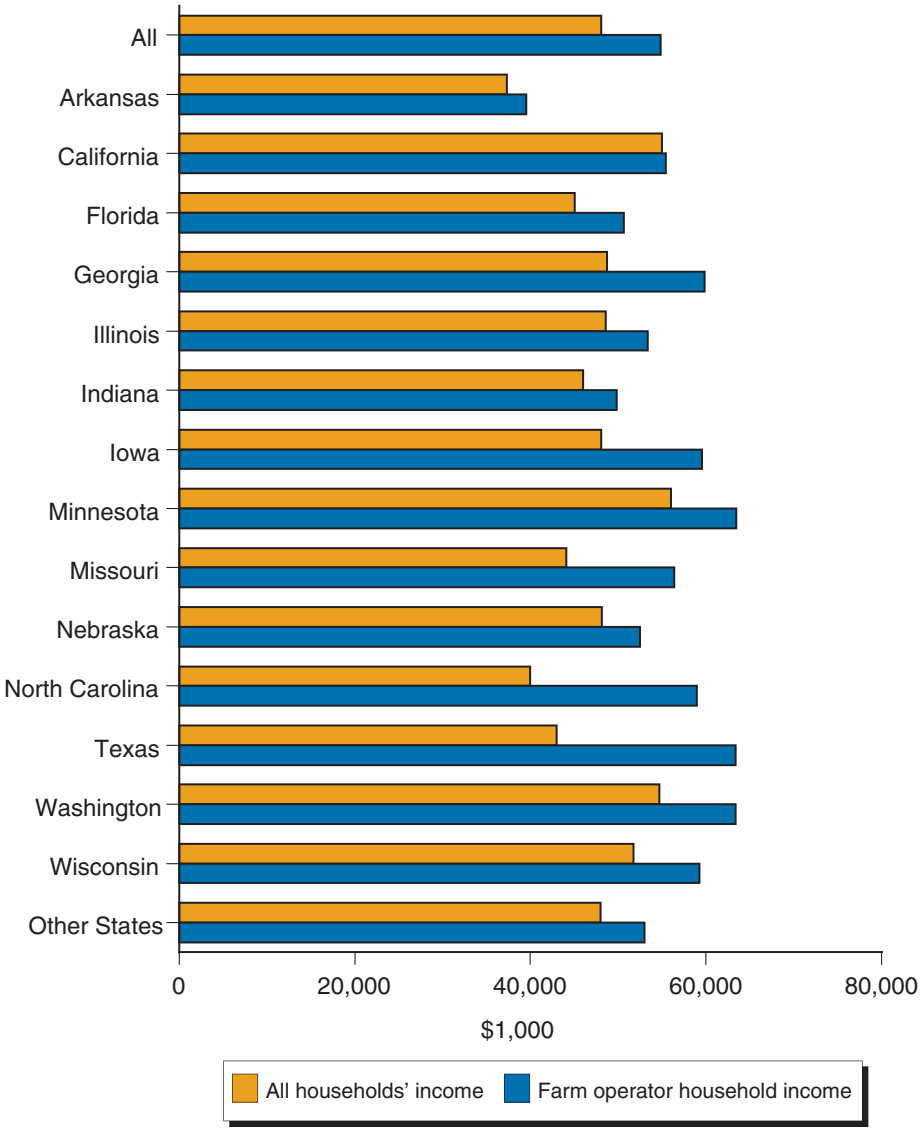
able. Because high incomes can have a strong impact on averages of a population, we also consider the median incomes of farm operator households compared to all households in the state. Median incomes of farm operator households in 2006 exceeded those of all households in the respective States, except for California (fig. 47). In California, the median income of farm operator households was very similar to the median income of all California households in 2006.

For most U.S. households, the major share of net worth is in houses and other real estate. In contrast, farm households have the major share of their net worth in farm business wealth (including farmland). Consequently, as the average net worth of farms has increased over time, so has the net worth of farm operator households. The latest information available on net worth of all U.S. families is for 2004 (Survey of Consumer Finances, Federal Reserve System). The median value of net worth for all U.S. households was $93,100 in 2004, compared with $456,914 for farm households. Thus, the median net worth of farm operator households was about five times the median net worth of U.S. families. It is not surprising to find that farm operator households have more net worth than the average U.S. household does because capital assets, such as farmland and equipment, are generally necessary to operate a successful farm business. In general, all households with self-employed heads have greater net worth than the average U.S. household. Even so, farm operator households also have greater net worth than all U.S. households with a self-employed head do.

Although farm operator households have higher incomes and net worth, on average, than the general U.S. population, there is also a large share of farm households that have low incomes in any given year. Consequently, a single-year indicator for assessing the well-being of farm operator households, and for comparison to U.S. households, is a more informative indicator since

Figure 47

Median income of farm operator households and all households, 2006



Sources: USDA, Agricultural Resource Management Survey and the U.S. Census Bureau, Current Population Survey.

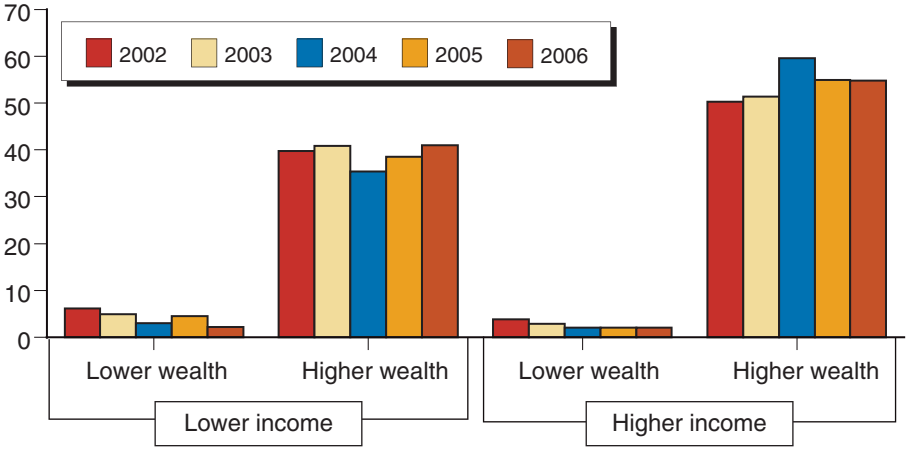
it considers both income and net worth positions. To jointly consider both income and net worth, farm households are divided into four groups, separated into low and high levels of income, and low and high levels of net worth, with the median levels of U.S. household income or net worth as the dividing lines between low and high. Median income (or net worth) is the level at which 50 percent of households have greater income (net worth) and 50 percent have less.

In 2006, less than 5 percent of all farm households—in contrast to 50 percent of all U.S. households—had net worth less than U.S. median household level (fig. 48). The 96 percent of farm households with high net worth are split into two groups, with 55 percent having income higher than the U.S. median and 41 percent having income lower than the U.S. median. The major difference

Figure 48

Distribution of farm operator households by joint income-wealth indicator, 2002-06

Percent



Source: USDA, Agricultural Resource Management Survey.

appears to be that, on average, the low-income/high-net worth group tended to have incurred farm losses during the year, and some portion or their off-farm income had to be used to offset these losses.

So who is in the small group of low net worth households? On average, the low net worth group was younger (virtually none was retired), operated substantially fewer acres, and generated lower farm sales than the farm operator population as a whole. They reported substantial losses in the off-farm component of household income. Among low net worth households, a major factor differentiating the high-income subgroup from their low-income counterparts is occupation: their primary occupation is disproportionately "other than farming/ranching," whereas the low-income group was more evenly split between operators declaring farming/ranching or "other" as their primary occupation.

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