Chapter 1

Large and Small Farms: Trends and Characteristics

Robert A. Hoppe and Penni Korb

The number of large farms has grown in recent decades, accompanied by increasingly concentrated agricultural production. Nevertheless, agriculture is not very concentrated compared with other industries. Despite the increase in large farms, small farms still account for over 90 percent of all farms and 68 percent of farm assets—but only 28 percent of production. High-sales small farms, large family farms, and very large family farms receive 75 percent of the payments from commodity programs. Retirement and residential/lifestyle farms, in contrast, receive about half of the payments from the Conservation Reserve and Wetlands Reserve Programs.

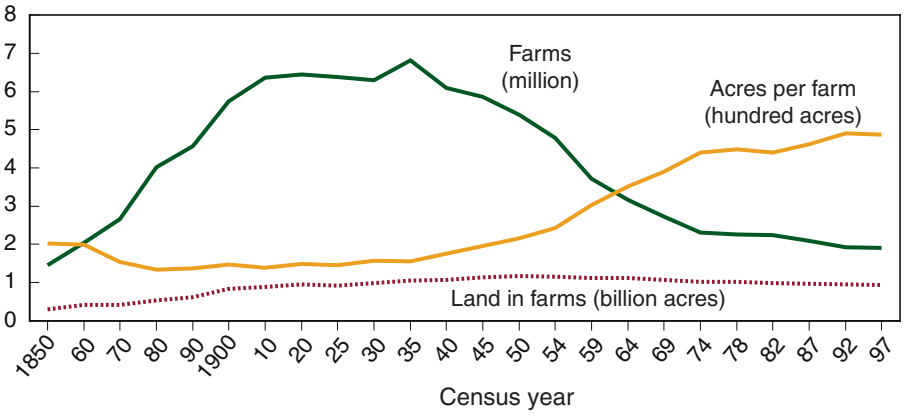
The number of U.S. farms fell dramatically after peaking at 6.8 million in 1935, with most of the decline occurring during the 1940s, 1950s, and 1960s (fig. 1-1). Falling farm numbers during this period reflect growing productivity in agriculture and increased nonfarm employment opportunities (Hoppe, 1994). Growing productivity led to excess capacity in agriculture, farm consolidation, and farm operators leaving farming to work in the nonfarm economy. The availability of nonfarm employment opportunities after the Great Depression also meant that young people growing up on farms had alternatives to farming (Gale, 1992).

The decline in farm numbers continues, but at a slower rate since 1974. By 1997, about 1.9 million farms remained. Because the amount of farmland did not decrease as much as the number of farms, the remaining farms have more acreage, on average. Some of the change in farm numbers reflects the

Figure 1-1

Farms, land in farms, and average acres per farm, 1850-1997

Most of the decline in farms occurred between 1935 and 1974



Source: USDA, Economic Research Service, compiled from census of agriculture data.

nine changes made to the farm definition since 1850. The current farm definition—any place normally selling at least $1,000 of farm products in a given year—has been in use since the 1974 Census of Agriculture (See Appendix IV, "Defining and Counting Farms").

The overall change in farm numbers masks different trends for large and small farms. This chapter traces the change in farm numbers by farm size and examines the characteristics of current U.S. farms. We use two major sources of data: various years of the census of agriculture and the 2001 Agricultural Resource Management Survey (ARMS). The census of agriculture is useful in tracking changes in the number and size of farms over time, but it is conducted at 5-year intervals, and the most recent data available for this report were from the 1997 Census of Agriculture. The ARMS provides more current information, since it is conducted annually. The ARMS also provides the detailed information necessary to understand current farm structure.

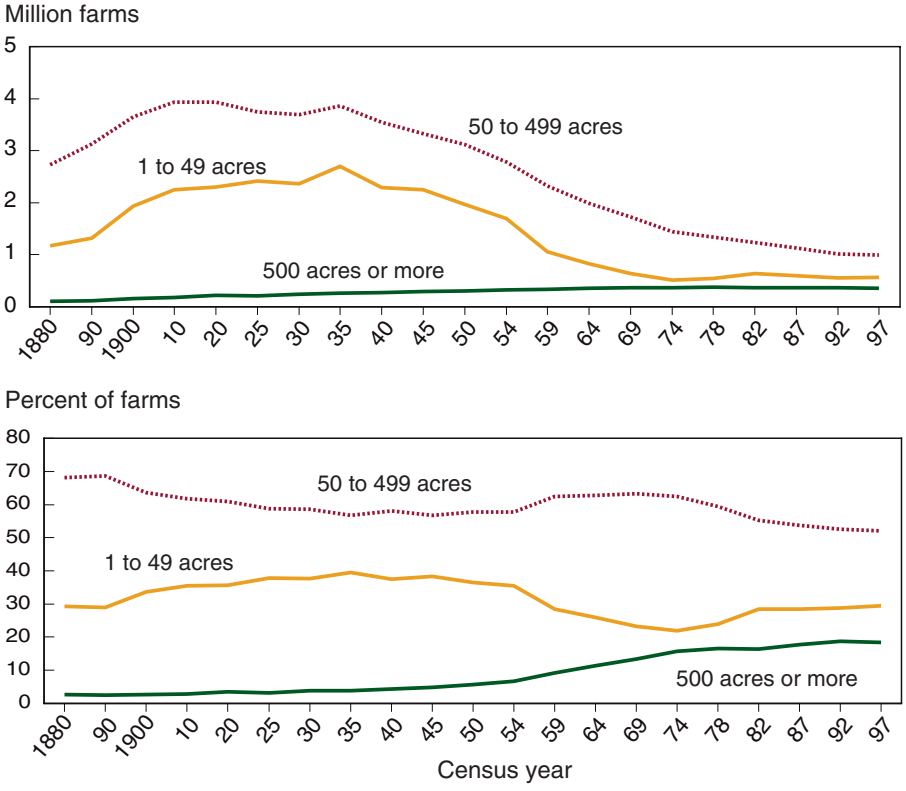
Trends Differ by Farm Size

The trend in the number of farms differs by acreage. The number of farms with at least 500 acres increased steadily from 1880 through the 1960s, before stabilizing at 350,000 to 370,000 farms (fig. 1-2). Farms with 1 to 49 acres declined from their peak of 2.7 million in 1935 to about half a million in 1974. After 1974, these farms have numbered between 540,000 and

Figure 1-2

Distribution of farms by acreage class, 1880-1997

The share of farms with 500 acres or more increased from 4 percent in 1935 to 18 percent in 1997



Source: USDA, Economic Research Service, compiled from census of agriculture data.

640,000. In contrast, the number of farms with 50-499 acres declined continuously from 3.9 million in 1935 to about 1 million farms in 1997. As a result of these changes, farms with fewer than 50 acres and farms with more than 500 acres have both increased their share of total farms since 1974, while the share of midsize farms has declined.

Acres or Sales?

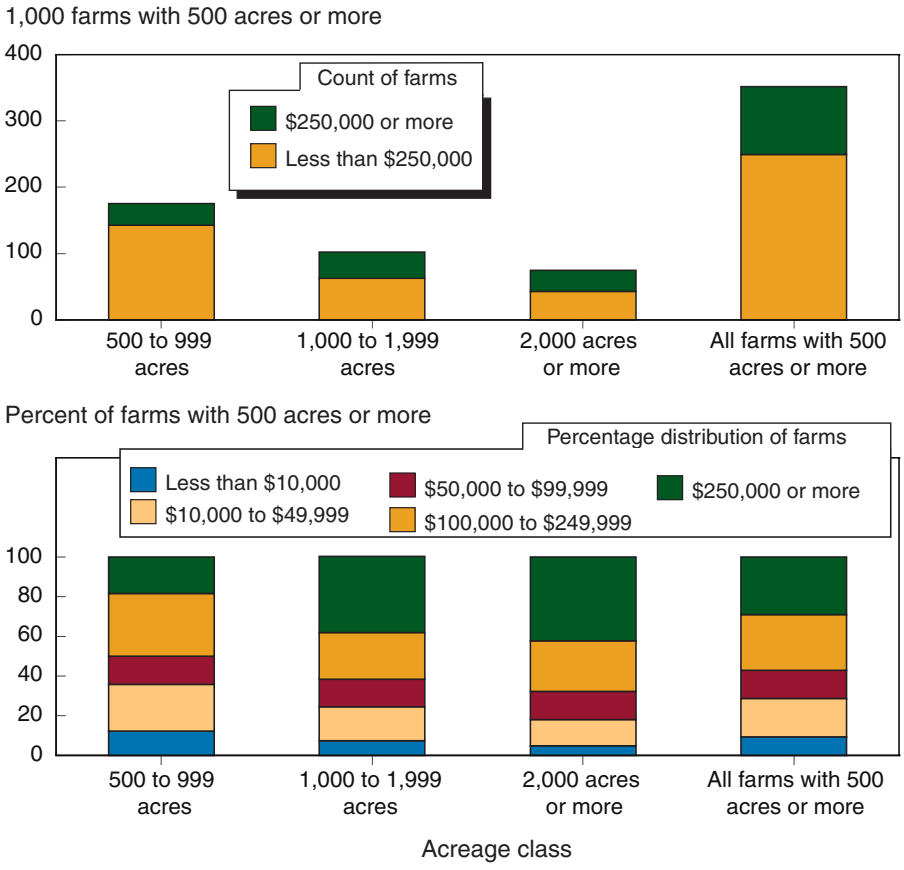
Over long periods of time, acres are generally used to indicate farm size. Estimates of the number of farms and land in farms are available back to the 1850 Census of Agriculture, and the distribution of farms by acreage class is available back to 1880.

Nevertheless, the level of farm sales is arguably a better indicator of farm size. It measures farm production for the market in dollars, in comparison to the level of one input (land). The number of acres necessary to produce a given dollar amount of farm product varies with the characteristics of the land and the products produced. Cattle operations, for example, may have low sales, but many acres of pasture or range. Thus, not all farms that are large in acreage have high sales. In fact, most farms with more than 500 acres in 1997 were not classified as large farms (fig. 1-3), defined by the National Commission on

Figure 1-3

Farms with 500 acres or more by sales class, 1997

Farms with large acreages do not necessarily have large sales



Source: USDA, Economic Research Service, compiled from census of agriculture data.

Small Farms as farms with sales of $250,000 or more (U.S. Department of Agriculture, National Commission on Small Farms, 1998).

When using sales to measure trends in farm size over time, it is important to adjust for changes in agricultural prices, which change revenue without any changes in the physical volume of production. Accordingly, this chapter adjusts sales of agricultural products for price changes using the Producer Price Index (PPI) for farm products, which is also the USDA/National Agricultural Statistics Service (NASS) index of prices received by farmers. Sales classes from the various censuses of agriculture presented in this chapter are expressed in 1997 constant dollars. Constant-dollar sales classes cannot be prepared before 1982, due to incomplete census records for individual farms prior to that year.

Change by Sales Class, 1982 to 1997

The distribution of farms by constant-dollar sales class, from 1982 onward, is consistent with the distribution by acreage class. Large farms (sales of at least $250,000) grew consistently over the 16-year period (table 1-1), from 104,000 in 1982 to 157,000 by 1997. Large farms' share of all farms also grew, from less than 5 percent to over 8 percent (fig. 1-4). Most farms in the large farm group had sales between $250,000 and $499,999, but the number of farms with sales of at least $500,000 grew more rapidly (table 1-1).

The number of farms in the other sales classes declined in each intercensus period, except for farms with sales less than $10,000. The number of farms with sales less than $10,000 declined from 1982 to 1987 and from 1987 to 1992, but increased by 9 percent from 1992 to 1997. Most of the increase from 1992 to 1997 occurred among point farms (table 1-1).[1] Because of this growth, farms with sales less than $10,000 now account for half of all U.S. farms.

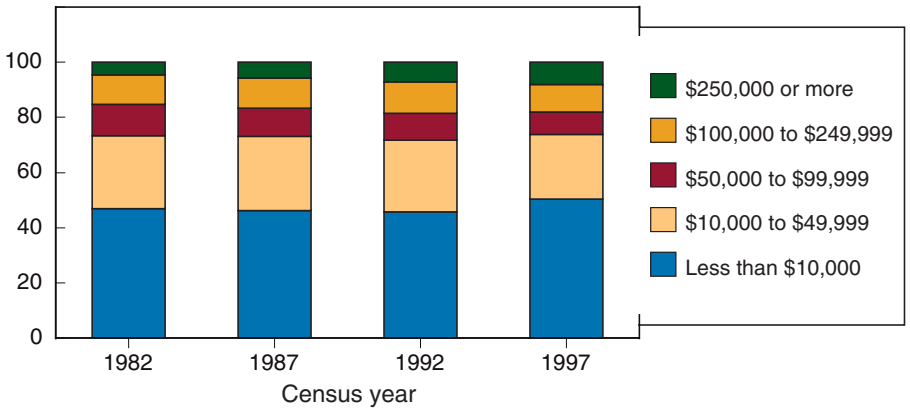
Most of the increase in point farms, however, is due to a change in the classification of farms that enroll all their cropland in the Conservation Reserve

[1] If a place does not have $1,000 in sales, a point system assigns values for acres of various crops and head of livestock to estimate a normal level of sales. Point farms are farms with less than $1,000 in sales that have points worth at least $1,000. For more information, see Appendix IV, "Defining and Counting Farms."

Figure 1-4

Distribution of farms by constant dollar sales class, 1982-1997

Farms with sales less than $10,000 or sales of $250,000 or more increased their share of farms



Source: USDA, Economic Research Service, compiled from census of agriculture data.

Table 1-1—Number of farms by constant-dollar sales class (1997 dollars), 1982, 1987, 1992, and 1997

Constant dollar sales class (1997 dollars)	Census year				Change		
	1982	1987	1992	1997	1982 to 1987	1987 to 1992	1992 to 1997
	Number of farms				*Percent*		
Total farms	2,240,976	2,087,759	1,925,300	1,911,859	-6.8	-7.8	-0.7
Sales less than $10,000	1,051,510	966,743	879,842	962,966	-8.1	-9.0	9.4
Point farms[1]	253,147	235,562	212,580	277,248	-6.9	-9.8	30.4
Other farms	798,363	731,181	667,262	685,718	-8.4	-8.7	2.8
Sales between $10,000 and $49,999	592,328	557,006	502,229	444,745	-6.0	-9.8	-11.4
$10,000 to $19,999	262,616	256,448	234,770	212,120	-2.3	-8.5	-9.6
$20,000 to $24,999	82,080	78,078	68,709	61,920	-4.9	-12.0	-9.9
$25,000 to $39,999	167,003	151,212	137,341	117,196	-9.5	-9.2	-14.7
$40,000-49,999	80,629	71,268	61,409	53,509	-11.6	-13.8	-12.9
Sales between $50,000 and $99,999	253,069	217,479	186,937	158,160	-14.1	-14.0	-15.4
Sales between $100,000 and $249,999	239,923	228,514	216,334	189,417	-4.8	-5.3	-12.4
Sales of $250,000 or more (large farms)	104,146	118,014	139,958	156,571	13.3	18.6	11.9
$250,000-$499,999	70,173	76,764	86,968	87,777	9.4	13.3	0.9
$500,000-$999,999	22,914	27,151	34,911	42,860	18.5	28.6	22.8
$1,000,000-$2,499,999	8,090	10,250	13,139	19,069	26.7	28.2	45.1
$2,500,000-$4,999,999	1,724	2,213	2,919	4,066	28.4	31.9	39.3
$5,000,000 or more	1,245	1,636	2,021	2,799	31.4	23.5	38.5

[1]Point farms have sales of less than $1,000 (current dollars), but are still considered farms because they would be expected to normally sell at least $1,000 of agricultural products. Point farms are defined in current dollars, rather than constant dollars, because they are identified in each census on the basis of current dollars.

Source: USDA, Economic Research Service, compiled from census of agriculture data.

or Wetlands Reserve Programs (CRP or WRP). The agricultural census did not count such operations as farms in 1992 if they did not sell at least $1,000 worth of farm products (U.S. Dept. of Commerce, Bureau of the Census, 1994). They were counted as point farms in the 1997 Census, however, on the grounds that they normally could have sold $1,000 worth of products (U.S. Department of Agriculture, National Agricultural Statistics Service, 1999a).

There were 66,700 of these CRP/WRP establishments in 1992. When these farms are added to the 1992 count of point farms to be consistent with the 1997 Census, the change in the number of point farms between 1992 and 1997 shifts from a gain of 30 percent (as shown in table 1-1) to a loss of 1 percent. In addition, the 9-percent increase in the number of farms with sales less than $10,000 drops to a 2-percent increase. This means that most of the apparent large increase in farms with sales less than $10,000 actually did not occur.

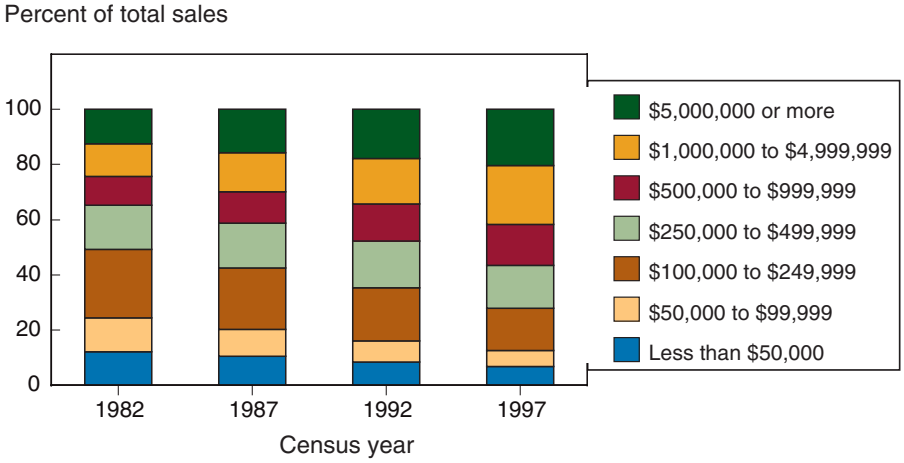
Distribution of Sales

From 1982 to 1997, changes in the distribution of sales were actually larger than changes in the distribution of the farms themselves. The share of sales attributed to large farms increased steadily from 51 percent in 1982 to 72 percent in 1997 (fig. 1-5). The largest share increases occurred in the classes of farms with sales of $1,000,000 to $4,999,999 (1.2 percent of farms in

Figure 1-5

Distribution of sales by constant-dollar sales class, 1982-1997

Large farms' share of sales increased from 51 percent in 1982 to 72 percent in 1997



Source: USDA, Economic Research Service, compiled from census of agriculture data.

1997) and $5 million or more (0.1 percent of farms). Each of these sales classes now accounts for about one-fifth of U.S. agricultural sales.

In discussions of farm structure, the growing share of production on fewer farms and fewer acres is referred to as concentration. Concentration has been underway for at least a century. It took 17 percent of U.S. farms to produce 50 percent of farm sales in 1900 (Peterson and Brooks, 1993). By 1997, just 2 percent of farms accounted for half of U.S. agricultural sales (U.S. Department of Agriculture, National Agricultural Statistics Service, 1999a). This 2 percent includes all the farms with sales above $1 million in table 1-1, plus 47 percent of the farms with sales between $500,000 and $999,999 (see box, "Measuring Concentration").

This discussion of concentration is based on data from various censuses of agriculture through 1997. Trends in concentration after 1997 rely on data from the annual Agricultural Resource Management Survey (ARMS). ARMS shows a continuing trend toward concentration: farms with sales of $1 million or more increased their share of sales from 34 percent in 1997 to 44 percent in 2001.[2]

Diversity Among U.S. Farms

Despite the rapid growth in the number of farms with sales of at least $250,000, more than 90 percent of farms in recent years have had sales below that level—according to ARMS—and thus were classified as small. The farm typology—outlined in the introduction—is used here to examine the diversity among U.S. farms, both large and small. The typology groups differ in their contribution to agricultural production, their product specialization, farm program participation, and other characteristics. (Remember that in the typology, family farms with sales greater than $250,000 are classified into two groups—large family farms and very large family farms—rather than a single "large" category.)

[2] The ARMS estimate of the share of 1997 total sales from farms with sales greater than $1 million is lower than the corresponding estimate from the 1997 Census of Agriculture (34 percent versus 42 percent) because ARMS undersamples farms with sales of $1 million or more. For more information, see Appendix IV, "Defining and Counting Farms."

Measuring Concentration

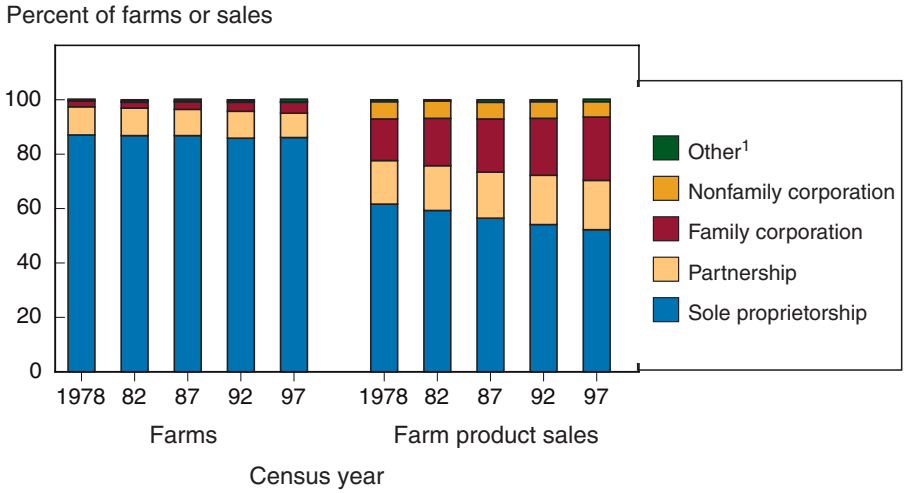
The census of agriculture provides a measure of concentration, the share of farms (starting with the largest and working down) needed to produce a certain level of output. For example, in 1997 the largest 2 percent of farms accounted for 50 percent of gross farm sales. The census measure, however, is sensitive to the number and production of small farms as well as the level of sales of the largest farms. For example, consider a massive farm consolidation that results in only 20 farms. The census measure would actually show less concentration than currently exists, if production were evenly distributed among the 20 remaining farms. Another measure (often used in studies of manufacturing) measures the share of industry output accounted for by the largest firms, often the largest 4, 8, 20, or 50 firms.

Family farms may be organized as proprietorships, partnerships, or family corporations. Nonfamily farms include those organized as nonfamily corporations or cooperatives, as well as any proprietorships, partnerships, or family corporations with hired managers. Most farms in 2001 (97 percent) were family farms. Even the largest farms tend to be family farms. For example, 86 percent of the farms with sales of $1 million or more in 2001 were family farms, and 63 percent of the farms with sales of $5 million or more were family farms. Large family farms are often organized as family corporations, and these account for a growing share of farm sales (fig. 1-6). The share of farms and sales accounted for by nonfamily corporations is small and has been relatively stable since 1978.

Figure 1-6

Distribution of farms and farm product sales, by business organization, 1978-97

Nonfamily corporations' share of farms and sales is stable



[1]Includes cooperatives, estates or trusts, and institutional farms.

Source: USDA, Economic Research Service, compiled from Reimund and Gale (1992) and census of agriculture data.

Share of Farms, Production, and Assets

Although 91 percent of U.S. farms are small family farms, they account for just 28 percent of production (fig. 1-7). Large and very large family farms make up only 7 percent of U.S. farms, but they produce more than half (58 percent) of agricultural production. Nonfamily farms make up the remainder of farms, and they account for about 14 percent of agricultural production.

Nevertheless, small farms make significant contributions to the production of specific commodities. For example, small farms account for 74 percent of the value of production for oats, 67 percent for tobacco, 60 percent for hay, 47 percent for wheat, 45 percent for soybeans, 39 percent for corn, and 38 percent for beef cattle. At the other extreme, small farms account for only 11 percent of the value of production for hogs, 12 percent for high-value crops (vegetables, fruits and tree nuts, and nursery/greenhouse products), and 16 percent for poultry.

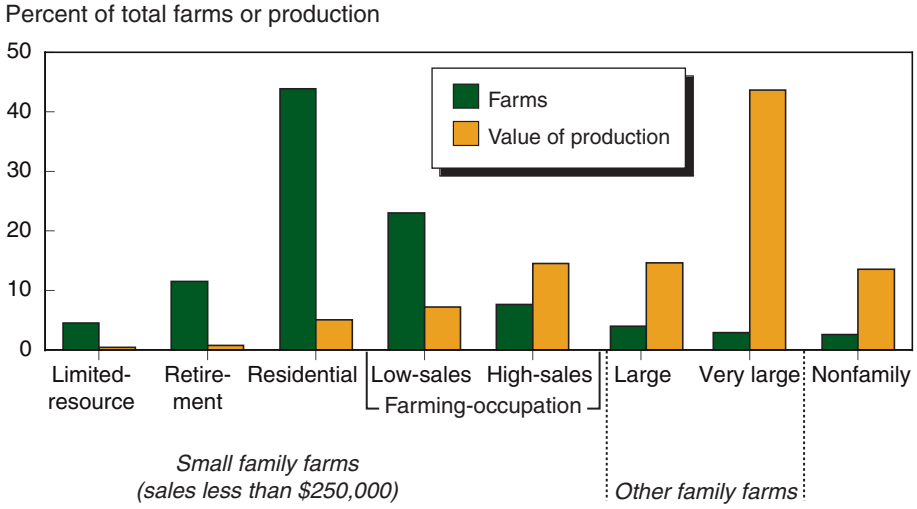
Most small farm production is concentrated among low- and high-sales farms, which together account for more than one-fifth of all U.S. production. High-sales farms actually produce about as much as large family farms. In contrast, limited-resource, retirement, and residential/lifestyle farms account for 6 percent of production, although they make up 60 percent of U.S. farms.

The share of assets and land held by small farms is substantially more than their 28-percent share of production. Small farms hold about 68 percent of all farm assets, including 60 percent of the land owned by farms (fig. 1-8). The small farm share of land operated, which includes the land farmers rent as well as own, is about the same as the share of land that small farms own. Real estate, including the dwelling of the operator, makes up most of farm assets (fig. 1-9). As custodians of the bulk of farm assets—including land—

Figure 1-7

Share of total farms and value of production, 2001

Large, very large, and nonfamily farms account for 72 percent of the value of production

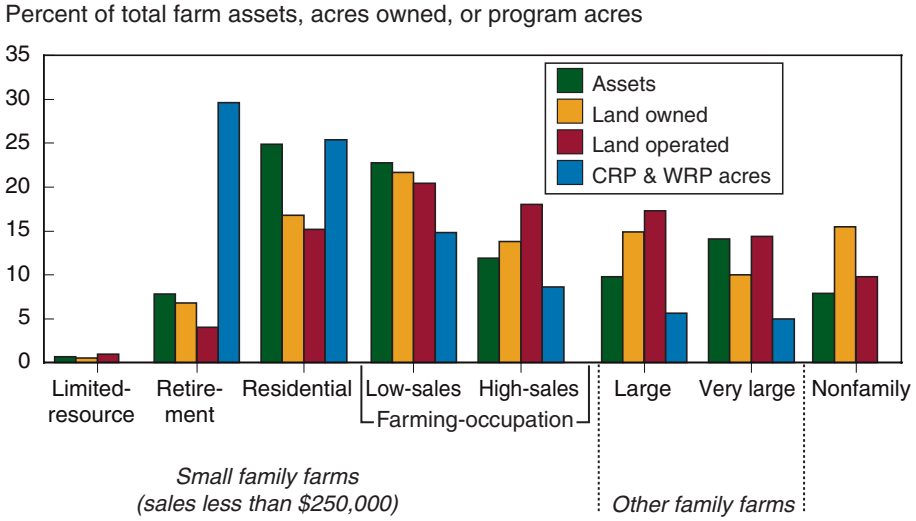


Source: USDA, Economic Research Service, 2001 Agricultural Resource Management Survey, Phase III.

Figure 1-8

Share of farm business assets, acres owned, and acres enrolled in the Conservation Reserve and Wetlands Reserve Programs (CRP & WRP), 2001

Small farms account for most of the assets (including land) owned by farms



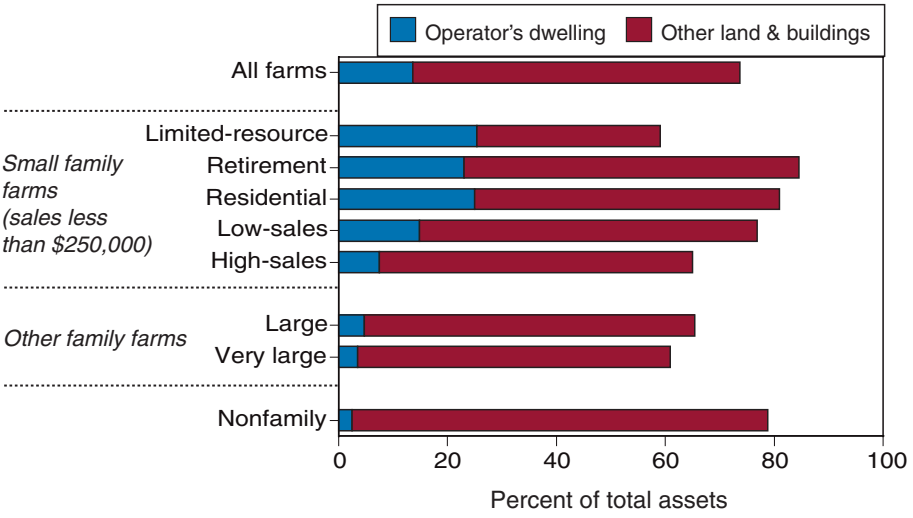
Note: The share of acres that limited-resource and nonfamily farms enroll in CRP and WRP is suppressed, due to insufficient observations.

Source: USDA, Economic Research Service, 2001 Agricultural Resource Management Survey, Phase III.

Figure 1-9

Share of farm business assets in real estate, 2001

Most farm assets are in real estate



Source: USDA, Economic Research Service, 2001 Agricultural Resource Management Survey, Phase III.

small farms play a large role in natural resource and environmental policy. For example, retirement farms and residential farms together account for 55 percent of the land enrolled by farm operators in the Conservation Reserve and Wetlands Reserve Programs (CRP and WRP) (fig. 1-8).[3]

[3] Retired farms enrolled about 31 percent of the land they owned in the CRP or WRP. Residential/lifestyle farms enrolled 8 percent of their land in the programs, which was still higher than the 3-percent enrollment share for farms not classified as retirement or residential/lifestyle.

Shifting Shares

The 2001 ARMS provides information on the current distribution of farms and production by the ERS farm typology. The distribution of farms and production by the typology, however, was somewhat different in the recent past. Although the typology was created in 1997 and 1998, it can be extended back to 1993,[4] which means changes can be observed over an 8-year period, 1993 to 2001. Year-to-year changes are generally minor, but they accumulate over the whole period. As a result, only the endpoints for the period (1993 and 2001) are presented.

One significant change is the increase in the share of farms in the residential/lifestyle category, from 36 percent in 1993 to 44 percent in 2001 (fig. 1-10). This shift reflects substantial growth in the number of residential/lifestyle farms, from 736,300 in 1993 to 943,200 in 2001. Other smaller—but statistically significant—changes were declines in share for limited-resource, low-sales, and high-sales small farms and increases for large and very large family farms.

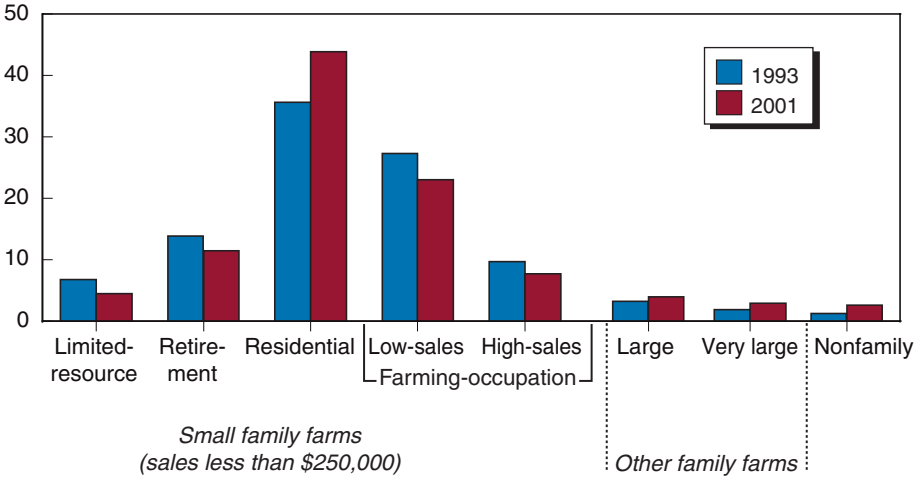
The large change in the residential/lifestyle group's share of farms had little effect on the group's share of production (fig. 1-11). Very large farms, on the other hand, increased their share of the value of production from 32 to 44 percent. Most of this shift to very large farms came from low- and high-sales farms, whose combined share of production declined from 34 to 22 percent. This shift is consistent with the concentration of sales among larger farms (see fig. 1-5).

[4] Beginning in 1993, the Farm Costs and Returns Survey—the predecessor to ARMS—allowed "retired" as an answer to its occupation question, making it possible to identify retirement farms for the first time.

Figure 1-10

Share of total farms, 1993 and 2001

The greatest increase was in the residential/lifestyle group



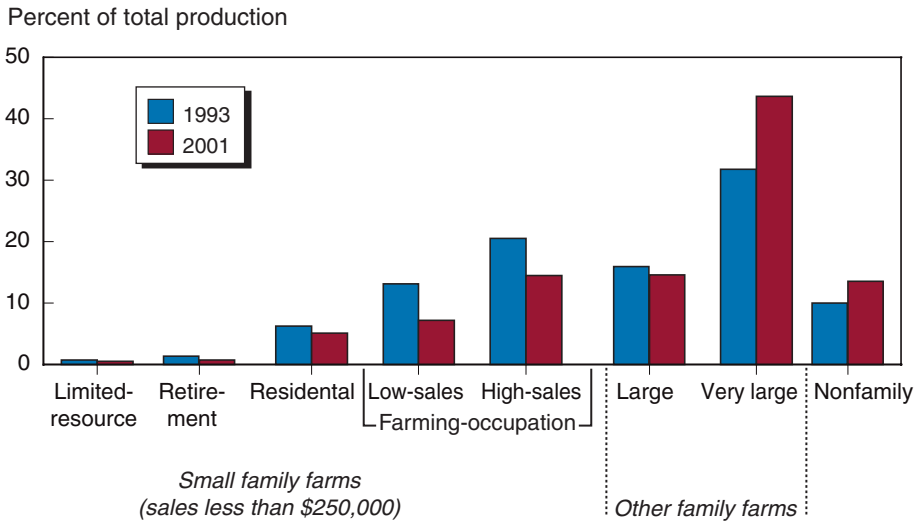
Note: The 1993 typology groups are defined in 2001 constant dollars. Sales were adjusted using the Producer Price Index (PPI) for farm products. Household income was adjusted by the Consumer Price Index (CPI). Farm assets were adjusted by changes in the value of farm real estate per acre.

Sources: USDA, Economic Research Service, 1993 Farm Costs and Returns Survey and 2001 Agricultural Resource Management Survey, Phase III.

Figure 1-11

Share of total value of production, 1993 and 2001

Production shifted to very large family farms



Note: The 1993 typology groups are defined in 2001 constant dollars. Sales were adjusted using the Producer Price Index (PPI) for farm products. Household income was adjusted by the Consumer Price Index (CPI). Farm assets were adjusted by changes in the value of farm real estate per acre.

Sources: USDA, Economic Research Service, 1993 Farm Costs and Returns Survey and 2001 Agricultural Resource Management Survey, Phase III.

Changes in the distribution of farm assets (not shown) followed a pattern similar to shifts in production. The share for very large farms increased while the shares for low-sales and high-sales farms decreased.

Farm Size and Tenure

Variation in size—measured in either sales or acres—helps explain the distribution of agricultural production. Limited-resource, retirement, and residential/lifestyle farms account for only 6 percent of production because most of these farms are very small. Roughly three-fourths of the farms in each of the three groups have sales less than $10,000 (table 1-2). The average acreage operated for farms in these three groups is also small, ranging from 100 to 156 acres.

Although only 36 percent of farming-occupation/low-sales farms have sales less than $10,000, three-fourths of these farms have sales less than $50,000. On average, low-sales farms operate 395 acres, or more than double the averages for the limited-resource, retirement, or residential/lifestyle farms. This average is small, however, compared with those for farming occupation/high-sales farms, large family farms, and very large family farms. Households operating limited-resource, retirement, or residential/lifestyle farms receive a large share of their income from off-farm sources (see chapter 2).

Average farm size ranges from 1,000 to 2,200 acres for high-sales small farms, large family farms, and very large family farms. About two-thirds of the farms in each of these groups are part owners, meaning that they own

Table 1-2—Farm size and tenure, by farm typology group, 2001

Item	Small family farms					Large family farms	Very large family farms	Nonfamily farms	All farms
	Limited-resource	Retirement	Residential/lifestyle	Farming-occupation: Low-sales	Farming-occupation: High-sales				
				Number					
Total farms	96,127	247,230	943,192	494,490	165,472	85,098	62,635	*55,440	2,149,683
				Percent of group					
Sales class:									
Less than $10,000	73.9	80.8	75.5	35.9	na	na	na	d	55.4
$10,000 to $49,999	*21.4	15.5	19.4	39.4	na	na	na	d	20.7
$50,000 to $99,999	d	d	3.2	24.7	na	na	na	d	7.8
$100,000 to $174,999	na	d	1.4	na	63.0	na	na	d	5.6
$175,000 to $249,999	na	d	d	na	37.0	na	na	d	3.3
$250,000 to $499,999	na	na	na	na	na	100.0	na	*5.8	4.1
$500,000 or more	na	na	na	na	na	na	100.0	**10.0	3.2
				Acres per farm					
Land operated per farm[1]	100	156	154	395	1,042	1,948	2,202	**1,698	446
Owned	30	157	101	249	475	997	908	**1,586	265
Rented in	75	17	63	168	582	998	1,324	***196	200
Rent out	**6	*18	*11	23	*14	**48	30	**84	18
				Percent of group					
Tenure:									
Full owner	49.5	83.3	63.6	55.2	20.7	16.2	21.9	74.5	57.2
Part owner	*15.1	15.9	31.2	37.8	65.6	70.4	62.9	***12.2	34.9
Tenant	*35.4	d	5.2	7.0	13.7	13.5	15.2	**13.3	8.0

d = Data suppressed due to insufficient observations. na = Not applicable. * = Standard error is between 25 and 50 percent of the estimate. ** = Standard error is between 51 and 75 percent of the estimate. *** = Standard error is between 76 and 100 percent of the estimate.

[1]Includes land used for crops or livestock part of the year and rented to another operation during another part of the year, not shown separately.

Source: USDA, Economic Research Service, 2001 Agricultural Resource Management Survey, Phase III.

part of the land they operate and rent the rest method of renting land has changed from a method for entry into farming to a method of expansion by controlling additional land without the debt and commitment of capital associated with ownership (Reimund and Gale, 1992).

Full ownership was the most common tenure category among retirement, residential/lifestyle, and low-sales farms. About 75 percent of nonfamily farms were also full-owners, reflecting the 68-percent share of nonfamily farms with sales less than $50,000 (not shown).[5] Owners of these smaller nonfamily farms frequently acquired their farms through an inheritance or as a small investment in agriculture and then contracted out the operation of the farm to a manager who, most likely, managed several of these small farms at the same time. Because these small farms have a hired manager, they are classified as nonfamily farms, even though they are not nonfamily corporations or cooperatives. The relatively high average acreage for nonfamily farms reflects a small share of very large farms in the group.

Other farmers own little of the land rented by farmers. Farmers reported renting out 39 million acres to others in 2001, less than one-tenth of the 429 million acres they rented in. The rest of the rented land came from nonoper-

[5] The 2001 ARMS sample was not large enough to publish a detailed distribution of nonfamily farms by sales class. ARMS data from earlier years, however, show that a substantial share of nonfamily farms are very small. Between a third and a half of nonfamily farms have sales of less than $10,000 in any given year.

ator landlords, some of whom may have retired from farming or otherwise have a farming background. According to the 1999 Agricultural Economics and Land Ownership Survey (AELOS), nonoperator landlords made up 42 percent of the 3.4 million farmland owners in 1999 (U.S. Department of Agriculture, National Agricultural Statistics Service, 2001). Ninety-five percent of nonfarm landlords were individuals/families or partnerships, largely older people. Of the unincorporated landlords, 55 percent were at least 65 years old and another 11 percent were between age 60 and 64.

Specialization and Diversification

Specialization differs widely by the typology, but some types of specialization are more common for small farms. Between 32 and 43 percent of limited-resource, retirement, residential/lifestyle, and low-sales small farms specialize in beef cattle (table 1-3). Beef cattle—particularly cow-calf operations—often have low labor requirements (Cash, 2002) and are compatible with off-farm work and retirement.

The tax code may also provide an incentive for specialization in cow-calf enterprises, particularly for residential/lifestyle farms, which—as a group—report substantial losses from farming (see chapter 2). Losses from farming can be written off against income from other sources when calculating income tax. The writeoff is unlimited if the farm has the potential to be profitable and the filer is materially involved in running the farm (Freshwater and Reimer, 1995). Residential/lifestyle farmers—particularly those with high off-farm earnings—can take advantage of this writeoff by producing a commodity that allows them to group their expenses and sales in different years to generate small profits in some years and large losses in others.

Other field crops are also a common specialization for limited-resource, retirement, and residential farms. This category includes farms with all their crop acres in the CRP and WRP, as well as farms specializing in various crops. Approximately 25 percent of residential/lifestyle farmers specialize in other livestock, including horses, sheep, and goats.

As the level of sales increases, specialization changes. Two commodity groups—cash grains and dairy—make up over half of all high-sales small farms and large family farms. Over 25 percent of very large family farms specialize in poultry and hog production. Poultry production is closely linked with processors, as is much of hog production.

Production of high-value crops is heavily concentrated among very large family farms and nonfamily farms, which together account for 80 percent of high-value crop production. No more than 10 percent of any small farm group specializes in these crops.

One of the enduring myths about farm structure is that U.S. farms are generally modestly sized, diversified enterprises producing a variety of commodities (Gale and Harrington, 1993). In reality, farms vary in size and are rather specialized, with individual farms producing very few commodities. Sixty-three percent of U.S. farms produce only one or two commodities, and another 13 percent have no production at all. Farms with no production

Table 1-3—Commodity specialization and diversification, by farm typology group, 2001

Item	Small family farms					Large family farms	Very large family farms	Nonfamily farms	All farms
	Limited-resource	Retirement	Residential/lifestyle	Farming-occupation: Low-sales	Farming-occupation: High-sales				
				Percent of group					
Commodity specialization:[1]									
Cash grain[2]	*14.6	5.8	8.3	17.7	33.8	34.6	22.1	*6.0	13.8
Other field crops[3]	*25.9	39.5	23.6	15.0	12.1	10.9	d	d	22.3
High-value crops[4]	d	d	5.9	8.8	*10.3	9.0	15.5	**16.0	7.2
Beef cattle	32.3	38.2	35.4	43.3	15.0	13.2	11.8	**24.7	34.0
Hogs	d	d	d	d	d	*5.7	9.3	d	1.1
Dairy	d	d	d	4.2	20.5	16.4	13.0	**1.8	4.0
Poultry	d	d	d	d	*3.4	8.1	16.1	d	1.7
Other livestock[5]	d	12.1	24.9	9.7	d	d	d	d	15.8
				Number per farm					
Mean number of commodities	1.3	0.9	1.1	1.7	2.6	2.8	2.7	**0.9	1.4
				Percent of group					
Number of commodities produced:[6]									
No commodities[7]	d	27.7	15.6	*4.0	0	0	0	d	12.8
One commodity	28.2	41.7	44.6	30.3	14.6	14.8	18.4	**33.6	35.7
Two commodities	37.7	24.1	27.0	32.9	21.3	19.9	18.6	*14.1	27.2
Three commodities	d	d	7.7	14.6	20.6	20.8	22.2	**3.2	10.9
Four or more commodities	d	d	5.1	18.2	43.5	44.5	40.8	**6.7	13.4

d = Data suppressed due to insufficient observations. * = Standard error is between 25 and 50 percent of the estimate.
** = Standard error is between 51 and 75 percent of the estimate.
[1] Commodity that accounts for at least half of the farm's value of production.
[2] Includes wheat, corn, soybeans, grain sorghum, rice, and general cash grains, where no single cash grain accounts for the majority of production.
[3] Tobacco, peanuts, cotton, sugar beets, sugar cane, corn for silage, sorghum for silage, hay, canola, oats, and general crops, where no single crop accounts for the majority of production. Also includes farms with all cropland in the Conservation Reserve or Wetlands Reserve Programs (CRP & WRP).
[4] Vegetables, fruits and tree nuts, and nursery & greenhouse.
[5] Includes sheep, goats, horses, mules, ponies, fur-bearing animals, bees, fish, and any other livestock. Also includes farms where no single livestock species accounts for the majority of production.
[6] Based on 26 commodities or commodity groups.
[7] Includes farms with no production due to drought, other adverse weather, crop and livestock disease, etc. Also includes farms with all cropland in the Conservation Reserve or Wetlands Reserve Programs (CRP & WRP).

Source: USDA, Economic Research Service, 2001 Agricultural Resource Management Survey, Phase III.

include those with all their cropland in the CRP and WRP, as well as farms experiencing crop failure or loss of livestock from disease or other causes. Many small farms have no production, or they specialize in a single commodity. High-sales small farms, large family farms, and very large family farms are more likely to produce multiple commodities, but even they produce a limited number of commodities. Nearly three-fifths of the farms in these groups produce no more than three commodities.

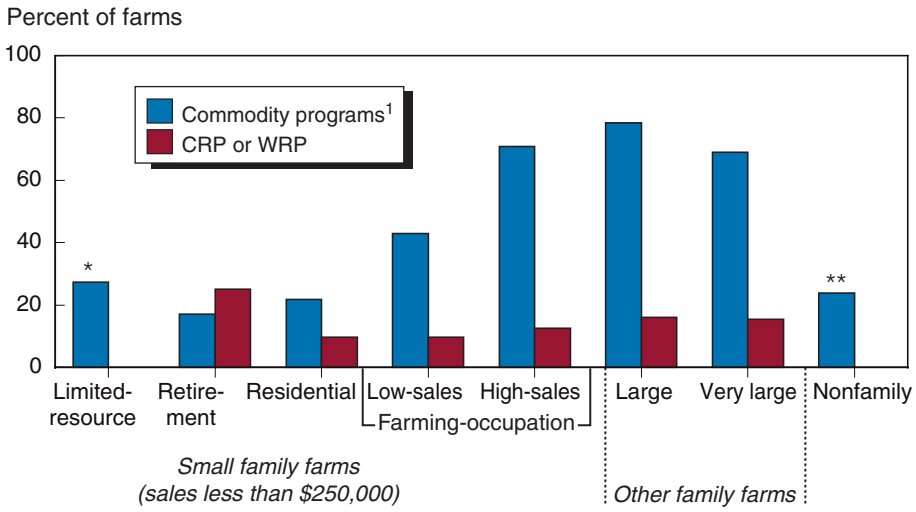
Government Program Participation

The relative importance of government programs varies by the typology. Between 69 and 78 percent of high-sales small farms, large family farms, and very large family farms receive commodity program payments (fig. 1-12). These three farm types also receive 75 percent of commodity program payments, roughly proportional to their production of program commodities (fig. 1-13). Farms that do not specialize in program commodities may

Figure 1-12

Farms receiving commodity program payments and payments from the Conservation Reserve or Wetlands Reserve Programs, 2001

Most high-sales, large, and very large farms receive payments from commodity programs



Note: The share of limited-resource or nonfamily farms receiving CRP or WRP is suppressed, due to insufficient observations.
* = Standard error is between 25 and 50 percent of the estimate.
** = Standard error is between 51 and 75 percent of the estimate.
[1]Agricultural disaster payments, loan deficiency payments, and transition payments.

Source: USDA, Economic Research Service, 2001 Agricultural Resource Management Survey, Phase III.

receive payments from commodity programs. For instance, dairy farms often produce corn to feed their cattle and thus could participate in commodity-related programs.

CRP and WRP—on the other hand—target particular types of land rather than the production of specific commodities. Thus, retirement and residential/lifestyle farms receive more than half of CRP and WRP payments, even though they produce little in the way of agricultural commodities. Twenty-five percent of retirement farms receive CRP or WRP payments (fig. 1-12), nearly double the 13-percent participation rate for all farms (not shown).

The large share of CRP and WRP payments going to residential/lifestyle farms, however, is not the result of a high participation rate. Only 10 percent of residential/lifestyle farms participate in the program, about the same rate as for all farms. For some residential/lifestyle farmers (particularly those with high off-farm income), the tax writeoff from farming may be more valuable than income from the CRP and WRP.

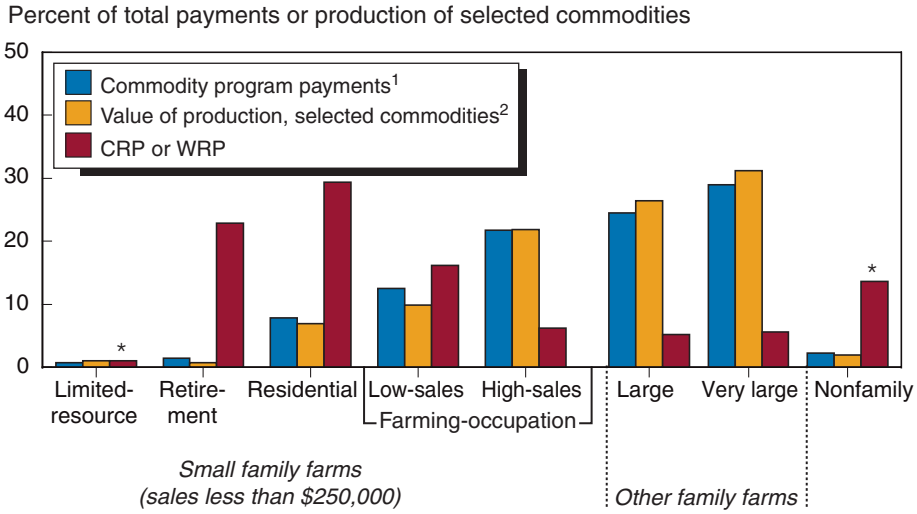
Instead, residential/lifestyle farms' share of CRP and WRP payments reflects their large numbers (44 percent of all farms) and their tendency to enroll large shares of their land when they do participate. Participating residential/lifestyle groups enroll an average of 44 percent of the land they operate, which is less than the 65-percent rate for participating retirement farms, but much more than the 25-percent rate for all participating farms.

Residential/lifestyle operators' main job is off-farm, which limits the amount of time they can spend farming. Since WRP and CRP have rela-

Figure 1-13

Distribution of total payments from commodity programs, 2001

Production of program commodities explains the distribution of commodity program payments



* = Standard error is between 25 and 50 percent of the estimate.
[1]Agricultural disaster payments, loan deficiency payments, and transition payments.
[2]Barley, corn, cotton, rice, sorghum, soybeans, wheat, and oats.

Source: USDA, Economic Research Service, 2001 Agricultural Resource Management Survey, Phase III.

tively low labor requirements, residential/lifestyle farmers may find the programs financially attractive. Given their life-cycle position, many retired farmers have land available to put into conservation uses. Alternatively, the assured and steady stream of rental payments coming from the CRP or WRP may make retirement a more viable option for some farmers.

Summary and Conclusions

Both acreage class and sales class data show a trend toward large farms, those farming at least 500 acres or selling at least $250,000 in farm products. Compared with acreage class data, the sales class data capture less of an increase in the number of smaller farms, particularly after adjusting in 1992 to include CRP/WRP point farms.

The growth in the number of large farms was accompanied by a shift in production to large farms. The share of production accounted for by farms with sales of at least $250,000 (in constant 1997 dollars) grew from 51 percent in 1982 to 72 percent 1997. By 1997, farms with sales of more than $1 million accounted for 42 percent of sales, compared with 24 percent in 1982. The concentration of production has been occurring in the United States for at least a century. The share of farms necessary to produce half of all farm sales fell from 17 percent in 1900 to 2 percent in 1997.

However, the 2 percent of U.S. farms currently accounting for half of agricultural sales actually includes 46,100 farm operations, far too many for any individual farmer to hold much market power. In most industries, concentration is not considered a policy issue until a small number of firms—perhaps two to four—dominates the industry. Agriculture is not very concentrated by

this measure, although concentration is approaching a level for some commodities where it may become a concern. The 18 largest hog producers, for example, accounted for almost one-fourth of all hog marketings in 1997 (MacDonald et al., 2000).

The effects of concentration on the environment may actually be more of a concern than effects on market power. In particular, the concentration of livestock production on fewer farms and less land can lead to environmental problems if farms raising livestock do not have enough land to absorb the manure produced (Ribaudo, 2003; Ribaudo et al., 2003). Most farms currently have adequate land to safely use the manure that their livestock produce, applying the manure at agronomic rates (Gollehon et al., 2001; Gollehon and Caswell, 2000). Farms that do not have enough land to safely apply all the manure produced, however, account for more than 60 percent of the production of manure nitrogen and 70 percent of manure phosphorus.

Although farms with sales greater than $250,000 experienced the fastest growth, 91 percent of all U.S. farms are classified as small family operations by the ERS typology. Despite their large number, small family farms account for only 28 percent of the value of agricultural production. Still, small farms (largely low- and high-sales farms) account for relatively large shares of the value of production for specific crops (oats, tobacco, hay, wheat, corn, and soybeans) and beef.

Small family farms also own three-fifths of the farmland held by U.S. farms and account for a similar share of the land operated. Because of their large landholdings, laws and programs addressing natural resource quality and conservation are among the policy instruments affecting the small family farm. CRP and WRP are particularly attractive to some small farmers. Retirement and residential/lifestyle farms together account for more than half of the land enrolled in the programs, and they receive more than half of the payments from the programs.

The share of CRP and WRP enrollments accruing to these groups has implications for the administration of the programs. If an advanced age and an off-farm occupation are major determinants of land going into land conservation programs, it may be relatively easy to get smaller farms to enroll land in the programs. Getting larger farms operating as commercial enterprises to enroll may require greater financial incentives because the opportunity cost of idling their land is larger.

While the CRP and WRP are important to retirement and residential/lifestyle farms, commodity programs are most relevant to high-sales small farms, as well as large and very large family farms. These groups produce most of the commodities that farm programs have traditionally supported.

Farms in the United States tend to be specialized, contrary to popular belief. About two-thirds of U.S. farms produced only one or two commodities in 2001. In addition, nearly three-fifths of family farms with sales greater than $100,000 produced no more than three commodities. Lack of diversification increases risk. This risk, however, can be alleviated by receipt of income from off-farm sources, enrollment in farm programs, crop insurance, and other measures.