How Contracting Has Grown

ERS used data from ARMS and the Census of Agriculture to trace the growth of contracting, to show how the use of contracts varies among commodities and regions, and to show the types of farms that use contracts.[4]

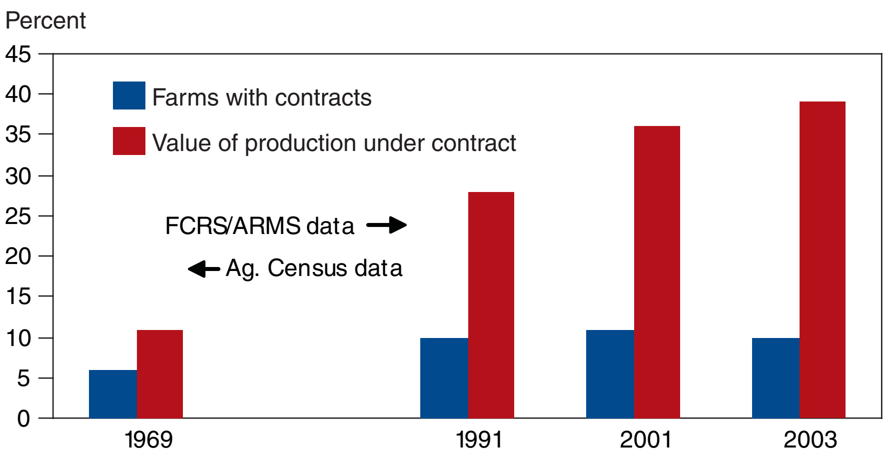
Contracts cover a growing volume of production

Agricultural contracts covered 39 percent of the value of agricultural production in 2003, up from 36 percent in 2001 (fig. 1). Over short periods covering a few years, this share may fluctuate.[5] But over longer periods, contracting shows a strong upward trend—contracting covered 28 percent of the value of production in 1991 and 11 percent in 1969.

A simple three-way classification of commercial, intermediate, and rural residence farms helps show how the use of contracts varies among different farm types. *Commercial farms* include family-operated farms with gross sales in excess of $250,000 and all nonfamily farms, which can be cooperatives, nonfamily corporations, or family-owned farms operated by a hired manager. *Intermediate farms* have sales below $250,000 and operators who report farming as their major occupation, but the category excludes limited-resource farms.[6] Most farms in the United States are *rural residence farms*—family-operated farms with sales below $250,000 whose operators report that they are retired or that their primary occupation is not farming, as well as limited resource farms.

Commercial farms exhibited most of the growth in contracting from 2001 to 2003. Contract sales accounted for almost 47 percent of the total value of production on commercial farms in 2003, and commercial farms, in turn, handled almost 87 percent of the total U.S. value of production under contract (table 1). More commercial farms held contracts in 2003 than in 2001, and the share of their production under contract rose as well, by over 4 percentage points (we define farm sales classes in constant 2003 dollars,

Figure 1
Expansion of agricultural contracting, 1969-2003



Source: Compiled by USDA's Economic Research Service using data from the 1991 Farm Costs and Returns Survey, the 2001 and 2003 Agricultural Resource Management Survey, and the Census of Agriculture.

[4]Because this bulletin is aimed at a broad audience, we do not include tests of statistical significance. However, in all cases in which we state that one measure is larger than another, either in cross-section or over time, statistical tests support the assertion at a 95-percent level of confidence.

[5]Contracting is more prevalent in some commodities, like sugar beets and hogs, than in others, like corn and wheat. In years of relatively high corn and wheat production and relatively low sugar beet and poultry production, contracting's share of total production falls. In addition, our ARMS data are drawn from random samples of farms, and hence contain sampling errors in estimates of contracting's share.

[6]Limited-resource farms had gross farm sales of less than $100,000 in 2003 and total operator household income that fell below specified thresholds in 2003 and 2002.

and adjust for inflation using the USDA/NASS index of prices received for farm products). In contrast, fewer rural residence and intermediate farms contracted in 2003 than in 2001, and the share of their value of production under contract also fell.

Contracting is closely tied to farm size (table 2). Nearly two-thirds of the largest farms (those with at least $1 million in sales) used contracts in 2003, while considerably fewer small farms used them. Contracts covered just one-fifth of production among small farms (those with less than $250,000 in sales) and over half of production on the largest farms. Moreover, contracting increased among the largest farms between 2001 and 2003, but held steady or declined among smaller farms.

Table 1

Share of farms using contracts and share of value produced under contract by typology, 2001 and 2003

	Farm typology			
Item	Rural residence farms	Intermediate farms	Commercial farms	48-State total
	Contract share within each category (percent)			
Farms with contracts, 2001	3.6	16.0	41.7	11.0
Farms with contracts, 2003	3.4	13.5	46.7	9.6
Production value under contract, 2001	13.3	24.2	42.2	36.4
Production value under contract, 2003	11.6	22.5	46.6	39.1
	Share of each category in all contracts (percent)			
Farms with contracts, 2001	19.6	44.6	35.8	100.0
Farms with contracts, 2003	23.9	33.3	42.9	100.0
Production value under contract, 2001	2.3	14.4	83.2	100.0
Production value under contract, 2003	2.4	10.9	86.7	100.0

Source: Compiled by USDA's Economic Research Service, using data from the 2001 and 2003 USDA Agricultural Resource Management Survey.

Table 2

Contracting among commercial farms, 2001 and 2003

	Farms with contracts		Value of production under contract	
Farm size (gross sales)	2001	2003	2001	2003
	Percent			
Less than $250,000	7.7	6.2	19.1	19.9
$250,000-$499,999	47.9	43.5	31.2	31.3
$500,000-$999,999	60.9	59.1	45.7	42.6
$1 million or more	61.5	64.2	46.6	53.4

Note: All farm size class cutoffs are adjusted for inflation (in 2003 dollars) using the USDA/NASS index of prices received by farmers.

Source: Compiled by USDA's Economic Research Service using data from the 2001 and 2003 USDA Agricultural Resource Management Survey.

ERS also examined marketing and production contracts separately, combining earlier years to expand sample sizes and smooth out some random fluctuations (table 3).[7] In 2003, more farms used marketing contracts than production contracts, and marketing contracts covered a greater share of agricultural output. However, coverage by production contracts has increased significantly since 1991-93, and this shift was driven by expansion at commercial farms with at least $500,000 in sales. The growth in use of production contracts primarily reflects the expansion of poultry production (where production contracts are the typical form of governance) and the expansion of production contracting in the hog sector.

[7]As a result of expanded funding, the 2003 ARMS has a much larger sample than earlier surveys.

Table 3

Share of farms using contracts and share of value produced under contract, 1991-2003

Item	1991-93	1994-95	1996-97	1998-2000	2001-02	2003
			Percent			
Share of farms with contracts:						
Any contracts	10.1	13.0	12.1	10.6	11.2	9.6
Marketing contracts	8.2	10.8	10.2	8.4	9.0	7.8
Crop	6.6	8.0	8.3	6.5	7.4	6.2
Livestock	1.6	3.0	2.0	2.0	1.6	1.6
Production contracts	2.1	2.4	2.2	2.5	2.6	2.1
Crop	0.6	0.7	0.6	0.6	0.5	0.4
Livestock	1.6	1.7	1.6	1.9	2.1	1.7
Share of production under contract:						
Any contracts	28.9	34.2	32.1	37.3	37.8	39.1
Marketing contracts	17.0	21.2	21.5	20.4	19.7	21.7
Crop	11.0	12.2	12.2	11.3	12.7	14.8
Livestock	6.0	8.9	9.2	9.1	7.1	6.9
Production contracts	11.8	13.0	10.6	16.9	18.0	17.5
Crop	0.9	1.0	1.0	2.1	1.6	0.6
Livestock	10.9	12.1	9.6	14.7	16.5	16.9
Share of farms in class with production contracts:						
$249,999 or less	1.2	1.5	1.2	1.1	1.0	0.8
$250,000 to $499,999	14.2	10.1	11.5	11.9	12.0	11.8
$500,000 to $999,999	21.9	20.8	20.9	27.6	31.3	23.6
$1 million or more	17.7	27.6	23.0	31.0	34.9	31.1
Share of production value under production contract in class:						
$249,999 or less	2.8	3.5	2.4	3.0	2.6	2.2
$250,000 to $499,999	11.7	8.6	8.4	8.7	10.1	9.8
$500,000 to $999,999	18.9	18.3	16.6	23.9	28.3	20.7
$1 million or more	22.8	25.4	19.2	28.3	27.6	29.1
Share of farms in class with marketing contracts:						
$249,999 or less	6.6	8.9	7.8	6.0	6.8	5.5
$250,000 to $499,999	29.1	36.6	39.3	35.2	34.1	33.2
$500,000 to $999,999	34.8	40.7	45.5	37.4	33.8	38.4
$1 million or more	40.0	38.2	48.0	39.8	35.2	37.7
Share of production value under marketing contract in class:						
$249,999 or less	11.8	15.2	16.0	13.0	16.2	17.7
$250,000 to $499,999	15.9	19.8	17.0	20.5	18.0	21.5
$500,000 to $999,999	19.6	25.7	25.4	21.5	18.6	21.9
$1 million or more	24.9	27.5	29.1	25.8	23.2	24.2

Note: All farm size class cutoffs are adjusted for inflation (in 2003 dollars) using the USDA/NASS index of prices received by farmers.

Source: Compiled by USDA's Economic Research Service using data from the 1991, 1994, 1996, 1998, 2001, and 2003 USDA Farm Costs and Returns Survey/Agricultural Resource Management Survey.

Contracts and commodities

Contract use varies widely across commodities. In the aggregate, contracts in 2003 covered 47 percent of livestock production, up from 33 percent in 1991-93, and 31 percent of crop production, up from 25 percent in 1991-93 (table 4). Among livestock commodities, contracts cover nearly 90 percent of poultry and egg production (and vertical integration likely covers most of the rest), as well as more than half of dairy and hog production. Since 1991-93, contract coverage grew sharply in hog production and showed some modest growth in cattle production (driven by sharper increases in the fed cattle part of the cattle sector).

Among crop commodities, contract coverage in 2003 ranges from only 8 percent of wheat production and 14 percent of corn and soybean production, to over half of rice, peanut, tobacco, and cotton production, to nearly all of sugar beet production. Over the long term, the increase in contract coverage for all crop production between 1991-93 and 2003 reflects sharp increases in contract share for cotton, rice, tobacco, and "other crops," with very little change in share for fruits, vegetables, peanuts, sugar beets, corn, soybeans, and wheat.[8]

In crop production, marketing contracts are far more prevalent than production contracts—marketing contracts covered 30 percent of crop production in 2003, while production contracts covered only 1 percent (table 5). Production contracts show significant coverage only in vegetable production, though marketing contracts still dominate that category with 85 percent of contract production.

[8]The category "other crops" includes many commodities; the largest, in terms of production value, include popcorn, field seeds, mushrooms, sunflowers, hops, flax, peppermint, and lentils.

Table 4
Distribution of the contract share of U.S. agricultural production by commodity and year, 1991-2003

Item	1991-93	1994-95	1996-97	1998-2000	2001-02	2003
	Percent of production value under contract					
All commodities	28.9	34.2	32.1	37.3	37.8	39.1
Crops	24.7	25.8	22.9	26.7	27.8	30.8
Corn	11.4	13.9	13.0	12.9	14.8	14.3
Soybeans	10.1	10.0	13.5	10.3	9.6	14.0
Wheat	5.9	6.2	9.1	7.0	6.5	7.6
Sugar beets	91.1	83.7	75.1	89.0	96.7	95.5
Rice	19.7	25.2	25.8	30.5	38.7	51.8
Peanuts	47.5	58.3	34.2	45.0	27.9	53.3
Tobacco	0.3	0.6	0.3	1.9	52.6	54.8
Cotton	30.4	44.5	33.8	42.9	52.6	51.4
Fruit	na	64.2	56.8	65.4	62.2	68.1
Vegetables	na	55.0	38.5	39.7	42.1	42.7
Other crops	7.8	15.9	23.8	33.6	39.1	45.9
Livestock	32.8	42.9	44.8	48.0	48.3	47.4
Cattle	na	19.0	17.0	24.3	21.1	28.9
Hogs	na	31.1	34.2	55.1	62.6	57.3
Poultry and eggs	88.7	84.6	84.1	88.8	92.3	88.2
Dairy	36.8	56.7	58.2	53.6	48.7	50.6
Other livestock	0.2	9.3	4.9	10.9	9.0	7.6

Note: na indicates value is not available due to no observations, an undefined statistic, or reliability concerns.
Source: Compiled by USDA's Economic Research Service using data from the 1991, 1994, 1996, 1998, 2001, and 2003 USDA Farm Costs and Returns Survey/Agricultural Resource Management Survey.

Table 5
Distribution of the contract share of U.S. agricultural production by commodity, contract type, and year, 1991-2003

Item	1991-93	1994-95	1996-97	1998-2000	2001-02	2003
	Percent of production value					
Commodities produced under marketing contract						
All commodities	17.0	21.2	21.5	20.4	19.7	21.7
Crops	22.8	24.0	21.1	22.5	24.7	29.7
Corn	10.2	13.8	12.9	12.6	14.7	13.8
Soybeans	9.6	9.8	13.2	9.7	9.5	13.6
Wheat	5.8	6.2	9.0	6.9	6.4	7.5
Sugar beets	88.5	83.7	74.6	83.1	95.8	95.1
Rice	19.7	25.2	25.8	30.5	38.6	51.8
Peanuts	45.2	58.3	34.2	44.9	27.9	53.3
Tobacco	0.3	0.6	0.3	1.9	52.6	54.8
Cotton	30.4	44.4	33.8	42.9	52.6	50.9
Fruit	na	61.0	54.3	63.3	60.1	67.2
Vegetables	na	45.3	32.3	27.3	31.5	36.4
Other crops	6.3	14.0	18.7	21.2	30.9	44.7
Livestock	11.6	18.2	22.0	18.4	14.5	13.7
Cattle	na	4.3	5.9	4.6	2.7	3.4
Hogs	na	2.4	2.7	9.1	6.1	6.8
Poultry and eggs	5.9	3.4	4.0	3.9	4.2	1.1
Dairy	36.6	56.7	58.0	53.4	48.0	50.5
Other livestock	0.1	6.8	4.9	10.7	3.5	7.4
Commodities produced under production contract						
All commodities	11.8	13.0	10.6	16.9	18.0	17.5
Crops	1.9	1.9	1.8	4.2	3.1	1.1
Vegetables	na	9.7	6.1	12.4	10.6	6.3
Livestock	21.1	24.7	22.9	29.6	33.8	33.7
Cattle	na	14.7	11.1	19.7	18.3	25.4
Hogs	na	28.7	31.5	46.0	56.5	50.4
Poultry and eggs	82.8	81.2	80.1	84.9	88.1	87.2
Dairy	0.2	na	0.1	0.2	0.7	0.1
Other livestock	0.1	2.6	na	na	5.5	na

Note. na indicates value is not available due to no observations, an undefined statistic, or reliability concerns.
Source: Compiled by USDA's Economic Research Service using data from the 1991, 1994, 1996, 1998, 2001, and 2003 USDA Farm Costs and Returns Survey/Agricultural Resource Management Survey.

Production contracts are more prevalent among livestock producers, while dairy farms are the major users of marketing contracts, representing over half of dairy production value in 2003. Hogs and fed cattle are the only sectors that extensively combine marketing and production contracts. In hog production, integrators (who often may themselves be farmers) typically arrange with farmers to grow hogs for them under production contracts, and they may also maintain marketing contracts with packing plants.[9] Independent hog producers may also hold marketing contracts with meatpackers,

[9]"Integrators" coordinate two or more stages of production (the term is used most frequently in hog and poultry production). They contract with farmers to grow market hogs, broilers, or turkeys. They provide feed and young poultry or pigs to those growers from facilities that they operate or with whom they have contracts, and they arrange for processing, again at facilities that they operate or contract.

which likely helps account for the growth in hog marketing contracts.[10] In fed cattle production, feedlots frequently feed cattle under a production contract with cattle owners and may rely on marketing contracts or spot markets to govern sales to meatpackers.[11]

Since 1991-93, the mix of agricultural production under contract has remained steady at about 60 percent livestock and 40 percent crops. Over the same period, however, marketing contracts have fallen as a share of all contract production, from 59 percent in 1991-93 to 55 percent in 2003 (table 6).

The use of contracting can vary sharply across regions (figs. 2 and 3). For example, contracts covered 89 percent of rice production in the Fruitful Rim in 2003, up from 78 percent in 2001-02 and 41 percent 10 years earlier. In contrast, contracts covered a much smaller share (16 percent) of rice production in the Mississippi Portal in 2003, with no clear growth over recent years. Contracting covered 85 percent of tobacco production in the Mississippi Portal in 2003, but only half in the Southern Seaboard. Contract coverage of hog production in the Heartland (41 percent) remains substan-

[10]Unless they also operate farms, integrators are not surveyed by ARMS, and we cannot capture data on their marketing contracts. In addition, some meatpackers operate their own production facilities and organize some hog production through vertical integration.

[11]At the cattle feeding stage, the "cattle owners" who hold production contracts constitute a diverse group, and they may include farmers and ranchers, meatpackers, and many other firms and individuals.

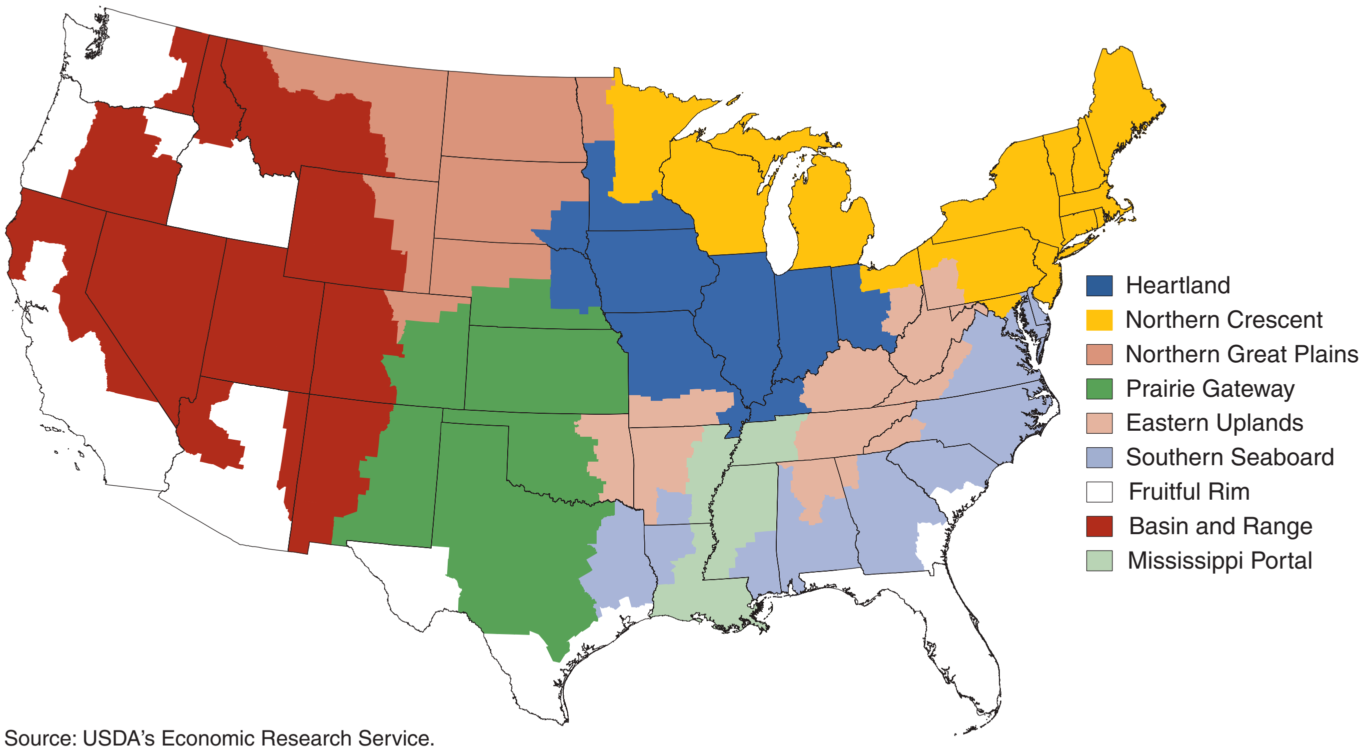
Table 6

Share of total contract value by commodity and contract type, 1991-2003

Item	1991-93	1994-95	1996-97	1998-2000	2001-02	2003
			Percent of contract value			
All contracts:						
All commodities	100.0	100.0	100.0	100.0	100.0	100.0
Crops	41.5	38.5	41.3	36.0	37.7	39.2
Corn	3.5	3.9	5.1	3.1	3.5	3.8
Soybeans	2.6	2.3	4.0	2.1	1.8	2.8
Fruit	11.6	10.8	10.5	10.3	9.3	12.3
Vegetables	9.8	10.0	8.1	5.6	6.5	5.9
Livestock	58.5	61.5	58.7	64.0	62.3	60.8
Cattle	18.6	10.2	7.5	12.2	10.2	16.2
Hogs	2.8	5.7	5.0	7.7	10.9	8.4
Poultry and eggs	20.4	23.0	21.3	24.1	25.7	21.8
Dairy	16.6	22.1	24.6	19.3	15.2	14.0
Marketing contracts:						
All commodities	59.1	61.9	66.9	54.8	52.2	55.3
Crops	38.3	35.8	38.1	30.3	33.5	37.8
Corn	3.1	3.9	5.1	3.0	3.4	3.6
Soybeans	2.5	2.3	3.9	2.0	1.7	2.7
Fruit	11.2	10.2	10.1	9.9	9.0	12.1
Vegetables	8.3	8.2	6.8	3.9	4.9	5.0
Livestock	20.8	26.1	28.8	24.5	18.7	17.5
Dairy	16.5	22.1	24.5	19.3	15.0	13.9
Production contracts:						
All commodities	40.9	38.1	33.1	45.2	47.8	44.7
Crops	3.2	2.8	3.2	5.7	4.2	1.4
Vegetables	1.5	1.8	1.3	1.8	1.6	0.9
Livestock	37.8	35.4	29.9	39.5	43.6	43.2
Cattle	16.1	7.9	4.9	9.9	8.9	14.3
Hogs	2.4	5.2	4.6	6.4	9.8	7.4
Poultry and eggs	19.0	22.1	20.3	23.1	24.5	21.5

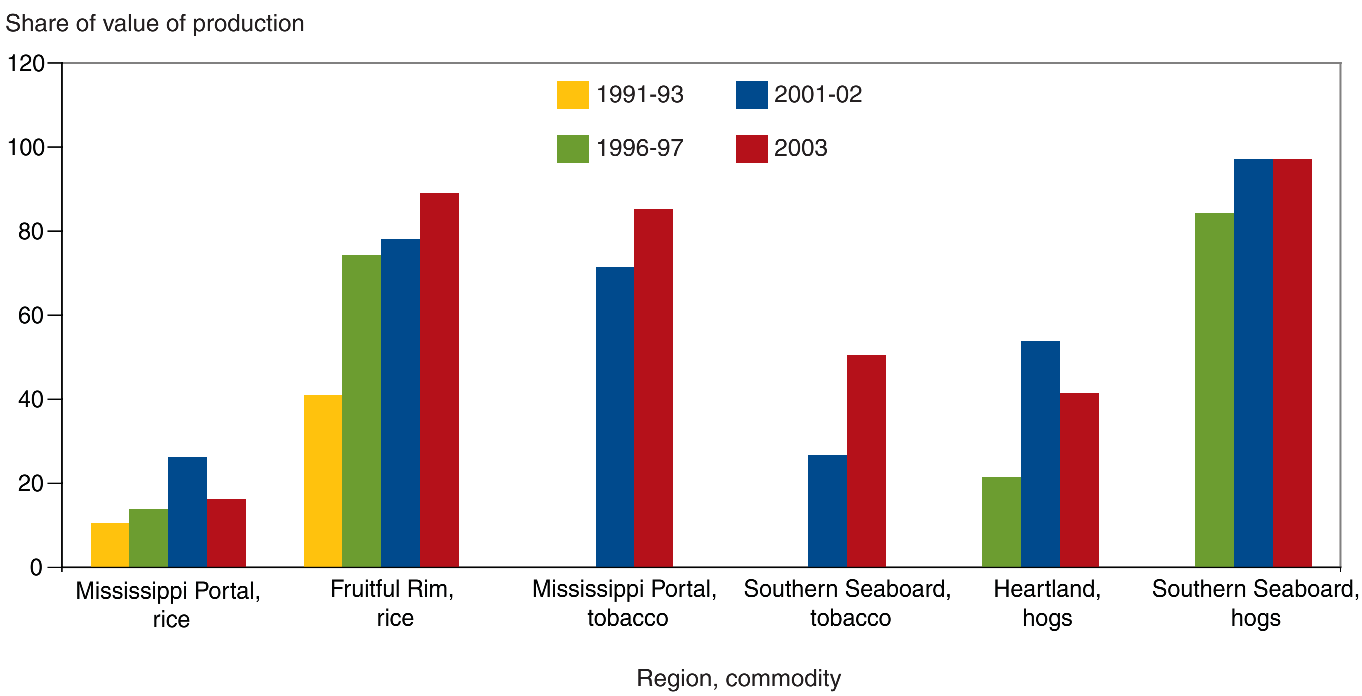
Source: Compiled by USDA's Economic Research Service using data from the 1991, 1994, 1996, 1998, 2001, and 2003 USDA Farm Costs and Returns Survey/Agricultural Resource Management Survey.

Figure 2
U.S. farm resource regions



Source: USDA's Economic Research Service.

Figure 3
Regional differences in contracting



Source: Compiled by USDA's Economic Research Service using data from the 1991 Farm Costs and Returns Survey, the 2001 and 2003 Agricultural Resource Management Survey, and the Census of Agriculture.

tially below that in the Southern Seaboard (97 percent). While differences in specific commodity characteristics may account for some of the regional differences, it is also likely that regional differences in the number of buyers and in the design of specific institutions affect contracting. For example, the Heartland has more packers available to purchase hogs, along with a set of reporting and marketing institutions to support a spot market, while the Southern Seaboard has fewer buyers and as a newer production region, a more limited set of existing institutions. Thus, contracting may have facilitated the expansion of hog production in the Southern Seaboard.

In summary, contracting covers a growing share of U.S. agricultural production, with that share (39 percent) increasing over the long term. Contracting is concentrated among the largest enterprises, which account for a growing share of production. While contracting appears to be growing steadily in the aggregate, sharp jumps are evident within regions and among certain commodities.