The Continued Expansion of Contracting

ERS researchers used data from ARMS and from USDA's Census of Agriculture to trace the growth of contracting in agriculture and to show how that growth varies among commodities, regions, contract types, and farm types.[8] In tracing contracting's expansion, we distinguish between the proportion of farms that use contracts and the proportion of agricultural production that comes under contract. This distinction matters because farms are so heterogeneous. USDA defines a farm as any place that produces, or would normally produce, $1,000 or more of agricultural commodities in a year. Under that definition, more than half of the 2.1 million farms in the United States have sales of less than $10,000 (and nearly half of those have no sales). Those very small farms collectively account for less than 2 percent of total U.S. agricultural production. At the other extreme, about 3,400 farms with at least $5 million in sales account for nearly one quarter of all agricultural production (Hoppe et al., 2007).

[8]Because this report 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.

Contracts Cover a Growing Volume of Production

Only 11 percent of U.S. farms had contracts in 2005, but contracts covered 40.7 percent of the value of agricultural production, up from 36.4 percent in 2001 (table 1). Over short periods covering a few years, this share may fluctuate.[9] But over longer periods, contracting shows a strong upward trend—contracts covered 28 percent of the value of production in 1991 and 11 percent in 1969 (fig. 1).

[9]Contracting is much more important in some commodities than in others. In years in which grain prices and production are high, grains will account for a larger share of agriculture's total value of production, and the share of contracts in the value of production will fall because grain farmers are less likely to use contracts. Conversely, contracting's share will rise in years in which heavily contracted commodities account for a larger share of agricultural production. Estimates of contract production will also vary from year to year because the data are drawn from random samples of farms, and hence contain sampling error.

Table 1
Share of farms using contracts and share of value produced under contract, by farm type, 2001-05

Item	Farm type			All farms
	Rural residence	Intermediate	Commercial	
	Shares of contracts within each farm type (percent)			
Farms with contracts				
2001	3.6	16.0	41.7	11.0
2003	3.4	13.5	46.7	9.6
2005	4.1	15.8	49.3	11.1
Production under contract				
2001	13.3	24.2	42.2	36.4
2003	11.6	22.5	46.6	39.1
2005	12.7	19.8	47.5	40.7
	Share of each farm type in all contracts (percent)			
Farms with contracts				
2001	19.6	44.6	35.8	100.0
2003	23.8	33.3	42.9	100.0
2005	25.0	32.6	42.4	100.0
Production under contract				
2001	2.4	14.4	83.2	100.0
2003	2.4	10.9	86.7	100.0
2005	2.4	7.4	90.2	100.0

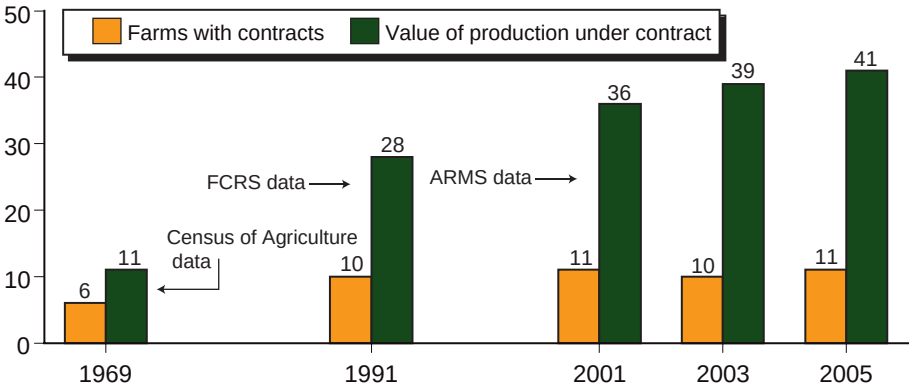
Note: Row sums have been rounded.

Source: USDA, Agricultural Resource Management Survey, 2001, 2003, and 2005 (all versions)

Figure 1

The growth of agricultural contracting, 1969-2005

Percent



Sources: USDA: Census of Agriculture; Farm Costs and Returns Survey; and Agricultural Resource Management Survey.

A simple three-way classification of commercial, intermediate, and rural residence farms helps show how the use of contracts varies among different farm types (table 1). Commercial farms include family-operated farms with gross sales in excess of $250,000 and all nonfamily farms, which can include cooperatives, nonfamily partnerships and 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. Most farms in the United States are rural residence farms—family-operated farms with sales below $250,000, with operators reporting that they are retired or that their primary occupation is not farming.

Commercial farms account for most contract production—90 percent in 2005 (table 1). In turn, contract coverage is growing among commercial farms, from 42 percent of their production in 2001 to 47 percent in 2003 and 48 percent in 2005 (farm sales classes are defined in constant 2003 dollars and are adjusted for inflation using the USDA/NASS index of prices received for farm products).

Contracting is closely tied to farm size (table 2). Over two-thirds of the largest farms (those with at least $1 million in sales) used contracts in 2005, while only 7 percent of small farms used them. Contracts covered a sixth of production among small farms (those with less than $250,000 in sales) and over half of production on the largest farms.

ERS also examined marketing and production contracts separately, combining earlier years in order to expand sample sizes and smooth out some random fluctuations (table 3).[10] In 2005, more farms used marketing contracts, and marketing contracts covered a greater share of agricultural output. However, production contract coverage has increased substantially since 1991-93, a development that primarily reflects the growth of poultry production, where production contracts are the typical form of governance, as well as the rapid expansion of production contracting in the hog sector. Production contracts are rarely used in crops, outside of some seed and horticultural production; 95 percent of all production covered by production

[10]Expanded funding allowed for increased sample sizes after 2002.

Table 2
Contracting by commercial farms, 2001-05

Year	Farms sales class			
	<$250,000	$250,000-499,999	$500,000-999,999	$1 million or more
	Share of farms with contracts (percent)			
2001	7.5	42.6	58.3	65.0
2003	6.1	40.6	57.9	62.2
2005	7.1	47.3	63.4	67.5
	Share of value of production under contract (percent)			
2001	18.6	26.8	44.0	51.0
2003	19.4	29.5	42.5	52.2
2005	16.4	29.5	43.7	54.3

Source: USDA, Agricultural Resource Management Survey, 2001, 2003, and 2005 (all versions).

Table 3
Contracts by type and year, 1991-2005

Item	1991-93	1996-97	2001-02	2005
	Percent			
Share of farms with contracts				
Any contracts	10.1	12.1	11.2	11.1
Marketing contracts	8.2	10.2	9.0	9.3
Crops	6.6	8.3	7.4	7.6
Livestock	1.6	2.0	1.6	1.9
Production contracts	2.1	2.2	2.6	2.1
Crops	0.6	0.6	0.5	0.4
Livestock	1.6	1.6	2.1	1.7
Share of production under contract				
Any contracts	28.9	32.1	37.8	40.7
Marketing contracts	17.0	21.5	19.7	22.0
Crops	11.0	12.1	12.7	13.1
Livestock	6.0	9.2	7.1	8.9
Production contracts	11.8	10.6	18.0	18.7
Crops	0.9	1.0	1.6	0.8
Livestock	10.9	9.6	16.5	17.8

Note: Some farms may have production and marketing contracts, so the share of farms with production contracts, plus the share with marketing contracts, adds to more than the share of farms with either kind of contract.

Source: USDA, Agricultural Resource Management Survey, 1996-2005 (all versions); and USDA, Farm Costs and Returns Survey, 1991-93.

contracts occurs in livestock. While marketing contracts are also used in livestock, they are the dominant contract type in crops—94 percent of contract production in crops utilizes marketing contracts.

Contract Coverage of Commodities

When compared with all of agricultural commodity marketing, in which crops accounted for 48 percent of the value of all agricultural production in 2005 and livestock and livestock products accounted for 52 percent, contracts are weighted to livestock. In particular, livestock accounted for 66 percent of the value of production under contract in 2005, compared to 34

percent for crops. Moreover, that gap is widening, as livestock accounts for a growing share of contract production (table 4).

Livestock production has been shifting toward a greater reliance on large and specialized confinement feeding operations, and these operations often have extensive contractual relationships. Large cattle feedlots are likely to hold production contracts with cattle owners and marketing contracts with meatpackers. Large dairy farms make greater use of forward contracts to price milk, and they may enter into production contracts with other dairy operations to raise their heifers. However, contracts are not used exclusively by large operations in the sector. Small producers of organic poultry or milk

Table 4
Share of total contract value by commodity, type, and year

	1991-93	1996-97	2001-02	2005
	Percent of production under contract			
By commodity				
All commodities	100.0	100.0	100.0	100.0
Crops	41.5	41.3	37.7	34.3
Corn	3.5	5.1	3.5	4.2
Soybeans	2.6	4.0	1.8	3.5
Fruit	11.6	10.5	9.3	9.8
Vegetables	9.8	8.1	6.5	7.6
All other crops	14.0	13.6	16.6	9.2
Livestock	58.5	58.7	62.3	65.7
Cattle	18.6	7.5	10.2	9.5
Hogs	2.8	5.0	10.9	13.3
Poultry and egg	20.4	21.3	25.7	24.9
Dairy	16.6	24.6	15.2	17.9
All other livestock	0.1	0.3	0.3	0.1
By contract type and commodity				
Both contract types	100.0	100.0	100.0	100.0
Marketing contracts	59.1	66.9	52.2	54.1
Crops	38.3	38.1	33.5	32.2
Corn	3.1	5.1	3.4	4.1
Soybeans	2.5	3.9	1.7	3.4
Fruit	11.2	10.1	9.0	9.8
Vegetables	8.3	6.8	4.9	6.3
All other crops	13.2	12.1	14.5	8.6
Livestock	20.8	28.8	18.7	21.9
Dairy	16.5	24.5	15.0	17.9
All other livestock	4.3	4.3	3.7	4.0
Production contracts	40.9	33.1	47.8	45.8
Crops	3.2	3.2	4.2	2.0
Vegetables	1.5	1.3	1.6	1.3
All other crops	1.7	1.9	2.6	0.7
Livestock	37.8	29.9	43.6	43.9
Cattle	16.1	4.9	8.9	7.8
Hogs	2.4	4.6	9.8	11.3
Poultry and eggs	19.0	20.3	24.5	24.7
All other livestock	0.3	0.1	0.4	0.1

Source: USDA, Agricultural Resource Management Survey, 1996-2005 (all versions); and USDA, Farm Costs and Returns Survey, 1991-93.

rely on contracts to ensure outlets for their products and to realize the price premiums that such products can bring.

Among commodity groups, poultry, hogs, and dairy occupy a much larger role in contract agriculture than their share in all U.S. agriculture (fig. 2). Taken together, hogs and poultry (including broilers, turkeys, and eggs) account for nearly 40 percent of all contract production, more than double their share of all agricultural production. In contrast, major field crops (corn, cotton, soybeans, rice, and wheat) account for much smaller shares of contract agriculture than their share in all U.S. agriculture. Together, those field crops accounted for over 21 percent of all cash receipts in agriculture in 2005, but made up only 11 percent of the value of contract production.

The commodity mix in contract agriculture differs because contract coverage varies widely across commodities. Contracts covered half of all livestock production in 2005, up from a third in 1991-93, and 30 percent of all crop production, up from 25 percent in 1991-93 (table 5). But, contracts covered over 90 percent of poultry and egg production in 2005, as well as 76 percent of hog production and nearly 60 percent of dairy production.[11] Since the early 1990s, contracting has expanded sharply in the hog sector. Contracting in the fed cattle component of the beef cattle industry rose and then fell off after 2000, accounting for the shifts seen in the aggregate cattle numbers.

Institutional Change and Contracting Shifts

Some commodities show sharp changes in contracting in short periods of time. Such sharp and sudden changes may be linked to institutional changes in the industries, deriving from changes in government policy, in information flows, or in buyer organization.

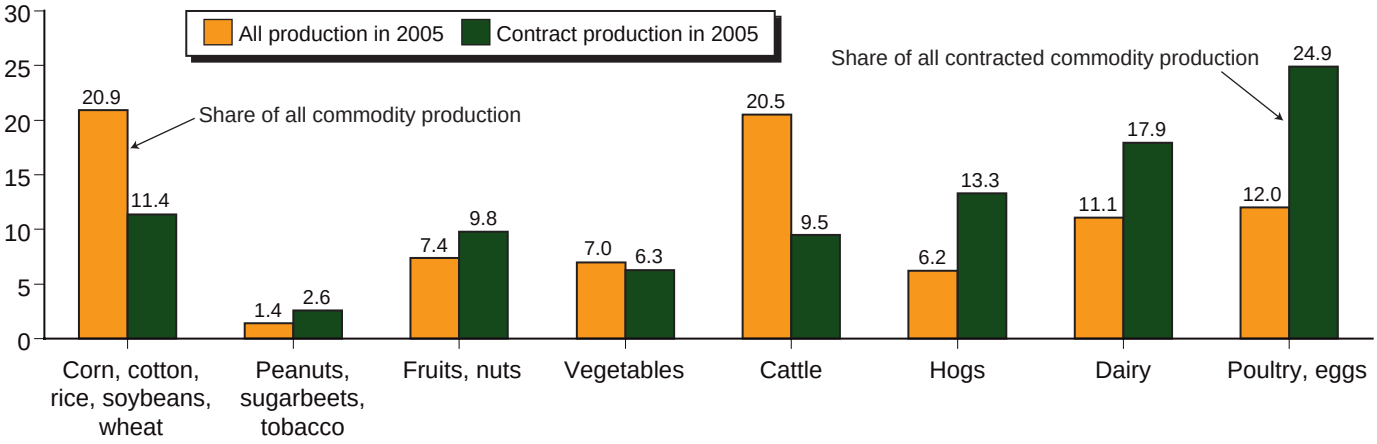
Contract coverage of peanuts expanded sharply after the 2002 elimination of the peanut marketing quota system (fig. 3). Marketing quotas were used

[11]The estimates do not imply that spot markets account for the remainder of hog and poultry production, because vertical integration is important in those sectors, with processors operating some farming operations. Shared equity investments, in which feedlots own a share of the cattle that they are feeding, are also becoming more important in cattle.

Figure 2

Hogs, poultry, and dairy play larger roles in contract production than in overall production

Percent, by commodity



Sources: USDA, Agricultural Resource Management Survey 2005, all versions.

Table 5

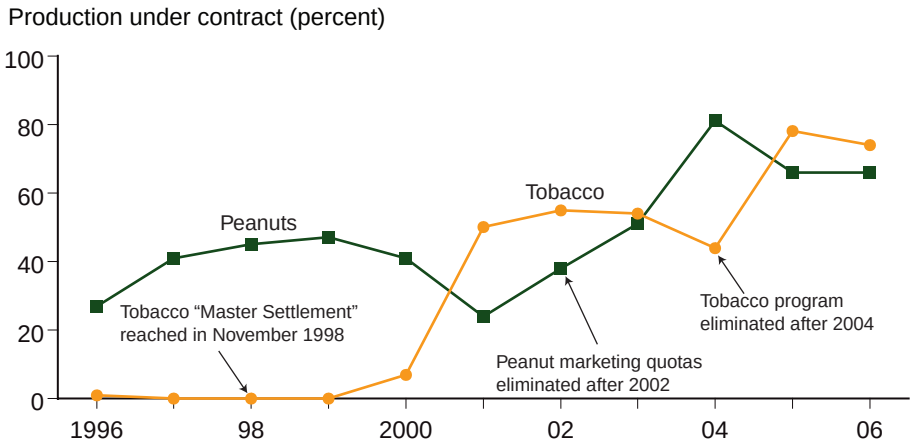
Production under contract, by commodity, 1991-2005

Commodity	1991-93	1996-97	2001-02	2005
	Percent of production under contract			
All commodities	28.9	32.1	37.8	40.7
Crops	24.7	22.9	27.8	29.9
Corn	11.4	13.0	14.8	19.6
Wheat	5.9	9.1	6.5	7.5
Soybeans	10.1	13.5	9.6	18.4
Sugarbeets	91.1	75.1	96.7	82.1
Rice	19.7	25.8	38.7	26.7
Peanuts	47.5	34.2	27.9	65.3
Tobacco	0.3	0.3	52.6	77.9
Cotton	30.4	33.8	52.6	45.0
Fruit	na	56.8	62.2	63.6
Vegetables	na	38.5	42.1	54.3
Livestock	32.8	44.8	48.3	50.1
Cattle	na	17.0	21.1	17.6
Hogs	na	34.2	62.6	76.2
Poultry and egg	88.7	84.1	92.3	94.2
Dairy	36.8	58.2	48.7	59.2

Source: USDA, Agricultural Resource Management Survey, 1996-2005 (all versions); and USDA, Farm Costs and Returns Survey, 1991-93.

Figure 3

Contracting expanded after policy changes in peanuts and tobacco



Source: USDA, Agricultural Resource Management Survey, all versions.

to control domestic peanut supplies, which in turn allowed for stable and relatively high spot-market prices (Dohlman and Livezey, 2005). The elimination of marketing quotas loosened supply controls and thus created greater market price risks. In addition, timely market price information, which might have allowed producers to manage their risks, was not widely available.

Marketing contracts were an important element of peanut production before the policy change—they covered a quarter to nearly a half of production in each year between 1996 and 2002. But after elimination of the U.S. peanut marketing quota program, marketing contracts provided a way to manage increased price risks, and contract coverage jumped to 80 percent of

production in 2004. The 2004 ARMS contained a peanut version, which asked whether the elimination of Federal marketing quotas led respondents to rely more on contracts, and 66 percent of producers responded that it did. Producers continued to seek other institutional methods for managing price risks, and contract coverage declined after 2004, but still remained at 66 percent of production in 2005 and 2006.

Contract coverage also spread widely in the U.S. tobacco sector. Marketing contracts were rarely used in tobacco prior to 1998. Until then, a system of marketing quotas controlled supply and limited spot market price risks, so producers had little interest in other risk-management methods. However, tobacco quality can vary widely across lots available for sale, and processors had long sought an expanded use of marketing contracts as a way to better link prices to qualities.

After 1998, when the States and the tobacco industry reached an agreement called the "master settlement," resolving lawsuits brought by the States against tobacco processors, production did shift sharply to marketing contracts. Contracts covered about 50 percent of production between 2000 and 2004 (fig. 3). In that year, the Federal tobacco program, including marketing quotas, was eliminated, and contracting expanded again to cover 78 percent of production in 2005 and 74 percent in 2006.

In peanuts and tobacco, cessation of government programs that limited spot-price risks led to an expanded reliance on contracts. In fed cattle, a government program that increased the amount of market information available may have improved spot-market performance and led to a shift away from contracts and toward greater reliance on spot markets. During the late 1990s, fed cattle transactions began shifting sharply away from spot markets and toward marketing contracts, in part because of perceived declines in the quality of market price reporting in the industry (Perry et al., 2005). The share of fed cattle moving to packers through spot market transactions fell steadily in each year, from 80 percent in 1997 to 56 percent in 2002.

Congress passed the Mandatory Livestock Reporting Act, which imposed greater price reporting demands upon packers in 1999, and the expanded mandatory reporting system was fully in place by late 2001, with further adjustments made in 2003 and 2004. After implementation, the spot market share stabilized and began to grow, from 56 percent in 2002 to 64 percent in 2005.[12]

Private-sector institutional changes can also affect contracting. Contract coverage in corn showed no trend for several years, covering 13 to 15 percent of production between 1996 and 2003, before expanding to 20 percent in 2005 and 25 percent in 2006 data. The expansion likely reflects the growing importance of ethanol production, where processors often use marketing contracts to ensure steady and timely corn deliveries.

[12]Fed cattle data come from the annual Packers and Stockyards Statistical Reports of USDA's Grain Inspection, Packers and Stockyards Administration. The shifts occurred during periods of sharp general price increases for beef, and these may also have affected contracting choices.