

Prices, Fees, and Terms in Agricultural Contracts

The 2003 ARMS included questions on the prices and fees farmers received under contracts, the process used to determine prices and fees, and contract terms—the length of time covered under a contract, as well as the quantities and the set of production tasks farmers commit to under contract.¹² The appendix lists specific questions included in the 2003 survey.

Marketing contracts for field crops

Table 7 summarizes some fundamental characteristics of marketing contracts and allows for a comparison of contract prices with average USDA/NASS marketing prices.¹³ Each of the five selected field crops represented in the table—corn, cotton, rice, soybeans, and wheat—had significant volumes produced under spot markets and under contract. In 2001, mean contract prices were above mean USDA/NASS prices for each commodity, by 6-8 percent for wheat and cotton, 10-12 percent for corn and soybeans, and 26 percent for rice (MacDonald et al., 2004).

¹²Producers receive prices for their commodities transferred under marketing contracts, while they receive fees for the services that they provide under production contracts.

¹³Average USDA/NASS prices should reflect mean prices across contract and spot market sales.

Table 7

Characteristics of marketing contracts for selected field crops, 2003

Item	Commodity				
	Corn	Cotton	Rice	Soybeans	Wheat
Total number of farms	44,212	11,353	3,402	44,674	9,692
<i>Dollars</i>					
Price received per unit:					
USDA/NASS mean, all sales	2.25	0.52	2.60	6.19	3.27
Mean	2.32	0.62	4.22	6.19	3.27
25th percentile	2.17	0.56	3.60	5.50	3.01
75th percentile	2.44	0.68	4.95	6.80	3.50
	<i>Bu.</i>	<i>Lb.</i>	<i>Bu.</i>	<i>Bu.</i>	<i>Bu.</i>
Quantity marketed through contract:					
Median	10,000	180,000	na	3,000	6,375
25th percentile	5,000	76,000	na	1,500	3,000
75th percentile	26,000	402,500	na	9,000	16,220
Contract terms:					
Median years with contractor	1	3	12	5	2
Median length of contract (months)	4	12	12	4	4
	<i>Percent</i>				
Share of contracts with the following attributes:					
Price received based on single price	69.2	12.1	16.1	72.9	69.2
Price received based on formula	23.5	53.1	30.5	8.1	6.5
Price received was negotiated	3.6	34.8	43.5	3.3	12.2
Price received other	3.7	0.0	10.0	15.8	12.0
Delivery has no quantity specified	19.2	64.1	71.6	23.5	39.4
Delivery has a specified quantity or range	79.5	15.0	10.6	73.6	59.2
Delivery harvest from specified acreage	0.8	20.7	17.0	1.9	0.9
No contract length reported	29.9	22.9	16.4	23.4	29.2
Another contractor for this commodity in area	90.3	83.9	79.7	90.6	85.9

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 2003 USDA Agricultural Resource Management Survey.

Crop prices were relatively low in 2001, and the risk-reduction features of many marketing contracts may have insulated producers against some of the price decline, leaving contract producers with higher average prices than noncontract producers. Crop prices rose substantially by 2003; if contracts serve primarily to limit price swings for farmers, then contract prices should have fallen below USDA/NASS mean prices in 2003. Instead, mean contract prices matched average USDA/NASS prices for soybean and wheat producers and exceeded the average USDA/NASS marketing-year average prices for corn (3 percent), cotton (19 percent), and rice (62 percent). Indeed, contract cotton and rice producers with relatively low contract prices (25th percentile) still received prices above mean USDA/NASS prices.¹⁴

In the case of rice, several factors may have affected prices received by farmers. First, the NASS monthly prices for 2003 trended sharply upward toward the end of the calendar year, from a low of \$1.90 at the beginning of the year. If contract products were delivered toward the end of the year, the trend alone might suggest higher prices. Second, most of the farmers who reported rice contracts reported that they used a contracting agent or cooperative to negotiate a price for their contracts. Under such an arrangement, often called a marketing pool, producers commit production to an agent who negotiates with buyers on their behalf. These agents or co-ops may have been more effective in securing higher prices for their commodities than did most farm operators on their own.

Marketing contracts for field crops do not tie contractors and farmers together in long-term relations—instead, farmers contract only parts of their crop and often review contracts and contractors on an annual basis (see table 7). The median quantity in a corn contract was 10,000 bushels in 2003, with the interquartile range extending from 5,000 to 26,000 bushels.¹⁵ At yields of 142 bushels per acre (the national average in 2003), a farmer would have to commit just 70 corn acres to meet the typical contract, with 35-185 acres enough to meet the interquartile range of contract quantities.¹⁶ Farmers commit to small contract quantities for several reasons. Many producers combine marketing contracts with spot market sales, storage, and hedging as part of an overall marketing strategy. Also, marketing contracts for field crops sometimes are designed to cover specialized varieties of a commodity, such as high-oil corn or food-grade soybeans, that are only a part of a farm's production.

Many crop contracts do not specify a duration, and of those that do, the median length ranges from 4 months (corn) to 12 months (cotton); that is, contracts typically cover part of one harvest's production. While rice farmers typically deal with the same contractor for many years (half of contract respondents had stayed with the same contractor for at least 12 years), producers of other crops do not. Half of the corn producers responding to the survey had dealt with their current contractor for 1 year or less. Among respondents who produce cotton or wheat, half had dealt with their current contractor for less than 3 years and less than 2 years, respectively.

As shown in the table, contract terms can exhibit striking differences across commodities. ARMS respondents report that about 70 percent of corn, wheat, and soybean contracts specify a single price in the contract.¹⁷ In

¹⁴The 25th percentile of a distribution is the point at which 25 percent of observations have lower values and 75 percent have higher. With the 25th percentile value exceeding the mean NASS price for cotton and rice, at least 75 percent of sample cotton and rice contract producers received 2003 prices above the overall USDA/NASS mean.

¹⁵The interquartile range is a measure of the spread of values in a distribution, and is the difference between the values at the 25th and 75th percentiles.

¹⁶Similarly, at national average yields, it would take 45 acres of soybeans, 64 of wheat, and 105 of cotton to fulfill the median contract quantities.

¹⁷Typically, rather than specify an actual price, the contract will state that the base price to be paid will be a posted spot or futures market price, with premiums or discounts from that price tied to commodity characteristics.

contrast, cotton and rice contracts frequently do not specify any price at all; instead, the contract calls for the contractor to negotiate for a price on the producer's behalf ("price received was negotiated"), which is typical of marketing pools. Similarly, cotton and rice contracts usually either do not specify a quantity or specify that the contract is to cover the harvest from a particular acreage. Corn, soybean, and wheat contracts are more likely to specify a precise quantity or a range of quantities. Finally, most producers reported having another contractor for a particular commodity in their area. The share of respondents reporting no other contractor available ranged from 10 percent of corn and soybean producers to 20 percent of rice producers.

Production contracts for broilers and hogs

ARMS data include large samples of production contracts for two commodities, broilers and market hogs (table 8). In each case, the fees received by farm operators ranged widely, with interquartile ranges of 19 to 29 cents a head for broilers and \$10 to \$12 a head for hogs.¹⁸

During 2003, the average price for hogs was \$39.75 a hundredweight, or \$107.33 for a 270-pound hog. Fees for hog producers thus ranged from 10 to 12 percent of market value; similarly, at a market value of 30 cents a pound for broilers, average fees for broiler producers would amount to 16 percent of the market value of a 5-pound broiler. As stated earlier, contractors usually provide feed, chicks or feeder pigs, veterinary services, and

¹⁸The range could reflect differences in products (for example, larger birds increase farmer costs) and could also reflect differences in markets for growers.

Table 8

Characteristics of production contracts by commodity, 2003

Item	Commodity	
	Broilers	Market hogs
Total number of farms	17,467	4,945
	<i>Dollars per head</i>	
Prices:		
Mean	0.24	12.04
25th percentile	0.19	10.00
75th percentile	0.29	12.00
	<i>Number of head</i>	
Contract quantiles:		
Median	345,000	4,555
25th percentile	210,000	1,689
75th percentile	582,000	9,600
Median years with contractor	10	4
Median length of contract (months)	12	12
	<i>Percent of contracts</i>	
Contract term characteristics:		
Fee is determined by a formula	91.6	54.3
Fee is linked to performance	98.3	na
Premium tied to attributes of delivered commodity	71.3	20.4
Requires use of specific equipment or structure	91.9	57.0
Manure management responsibilities	96.5	86.7
Specifies amount of land for manure distribution	34.9	53.8
Another contractor for this commodity in area	68.7	81.7

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 2003 USDA Agricultural Resource Management Survey.

transport services, and the services that producers provide (labor, housing, energy, and equipment) usually account for only a small share of the commodity's total cost. Table 9 details operating expenses for farms with broiler and market hog production contracts. Contractors pay for 80 percent of estimated operating expenses at farms with broiler production contracts, and 71 percent at farms with hog production contracts. Feed accounts for the largest share of operating expenses on each type of farm, and contractors pay for 96 percent of total feed expenses. Contractors also handle large shares of livestock and poultry purchases, medical expenses, and custom work, while the operators pay for labor and energy expenses, in addition to providing capital and operator household labor.

Production contracts typically commit broiler and hog farmers to large annual production volumes and substantial investments. The median annual quantity in a hog contract is over 4,500 hogs, with an interquartile range of 1,700-9,600 hogs (see table 8). The median and 75th percentile quantities of hogs were 25 percent higher in 2001, suggesting that production contracts may be settling on a narrower range of facility sizes. For broilers, the median contract quantity of 345,000 birds, and the interquartile range of 210,000-582,000 birds, is quite close to the values for 2001 (MacDonald et al., 2004).

Compensation arrangements in hog and broiler contracts differ considerably. Over 90 percent of broiler contracts specify a formula for determining a fee, and most of those base the formula on the producer's relative performance, compared with that of a group of other producers. In contrast, just over half of hog contract fees are based on a formula, and few use relative performance features.¹⁹

Manure management issues are of growing concern on large livestock and poultry operations because of expanded environmental regulation and lawsuits over odors and pollution.²⁰ Because integrators may be at some risk of liability for events that take place on contractees' operations, some production contracts may contain clauses dealing with issues such as manure management. In nearly all broiler contracts (97 percent), the farm operator is responsible for manure management. In one of seven hog contracts, manure management is assigned to someone else—that is, some

¹⁹Nearly half of hog contracts specified a single fee in the contract, instead of a formula.

²⁰A recent ERS analysis of the issue can be found in Aillery et al. (2005).

Table 9

Expenses among farms holding broiler or market hog production contracts, 2003

Operating expense category	Farms with broiler contracts		Farms with market hog contracts	
	Expenses <i>Millions(\$)</i>	Contractor share <i>Percent</i>	Expenses <i>Millions(\$)</i>	Contractor share <i>Percent</i>
Total	8,814	80.4	4,134	71.1
Feed	4,879	96.1	1,547	96.3
Livestock	745	100.0	287	89.4
Medical	97	88.7	63	87.4
Custom work	325	94.8	45	62.7
Cash wages	117	18.0	102	1.6
Natural gas	20	8.6	2	3.6
Electricity	90	0.6	12	8.3

Note: Expenses in each category are summed over all farms with broiler or market hog production contracts.

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

production arrangements now set up separate contracts for hog production and for manure management at the same site. For those hog producers that retain manure management responsibilities, just over half of the contracts also contain explicit terms requiring the producer to have access to a certain amount of land for manure management. With the increased focus on environmental issues, future livestock production contracts are likely to continue to include guidelines on manure management.

In contrast to crop marketing contracts, hog and broiler production contracts generally tie producers and contractors (the integrators) together in long-term relationships. On average, broiler producers have worked with their current contractor for 10 years, while hog producers have worked with their current contractor for 4 years. The endurance of these business relationships may stem in part from the lack of alternative contractors available to hog and broiler producers. According to ARMS data, over 30 percent of broiler producers and almost 20 percent of hog producers report having no other contractor in the area.

Despite long-term working relationships, and in spite of the substantial financial investments that operators make in production contracts, many contracts specify very short durations—the median length of contract is just 12 months for each commodity (thus, broiler producers typically recontract each year with the same contractor). However, specified contract durations vary widely among producers of each commodity (table 10). Over 20 percent of broiler contracts and over 30 percent of market hog contracts do not specify a length.²¹ Such contracts typically cover a single flock of broilers or a single group of feeder pigs delivered to the producer. Over half of broiler contracts and over a quarter of hog contracts specify a short-term contract of less than a year. Many producers have contracts with long durations; about 15 percent of broiler producers and about 37 percent of hog producers specify contract durations of 5 years or more. Several sample broiler contracts report 15-year durations.

Moreover, larger producers tend to have longer contracts. While only 37 percent of contract hog producers reported that they had a contract of at least 5 years' duration, those operations accounted for more than half (56

²¹ARMS asked respondents to state the length of their contract, in months, and to report zero for those contracts that did not specify a length.

Table 10

Duration of production contracts for broilers and market hogs, 2003

Length of contract	Commodity under contract	
	Broilers	Market hogs
Total number of farms	17,467	4,945
	<i>Percent of contracts</i>	
No length specified	21.5	30.1
Short term: 12 months or less	55.7	27.9
Medium term: 13-59 months	8.1	5.1
Long term: 60 months or more	14.7	36.9
	<i>Percent of contract production</i>	
No length specified	20.9	19.4
Short term: 12 months or less	46.3	21.1
Medium term: 13-59 months	8.9	3.5
Long term: 60 months or more	23.8	56.0

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

percent) of contract hog production. Similarly, while one-seventh of contract broiler producers held long-term contracts, those operations accounted for almost a quarter of contract broiler production. Nevertheless, most broiler contracts, covering two-thirds of contract production, are covered by contracts for a single flock or for short specified durations of less than a year. Since each producer makes substantial long-term investments in structures and equipment (note that over 90 percent of poultry contracts have specific equipment investments specified in the contract), the short term specified in many contracts, the wide range of observed durations, and the differences between broiler and hog contracts are quite striking.