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Contracts as a Risk Management Tool

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A contract is usually defined as a written or oral agreement between two or more parties involving an enforceable commitment to do or refrain from doing something. In agriculture, contracts between farmers and agribusinesses specify certain conditions associated with producing and/or marketing an agricultural product. By combining various market functions, contracting generally reduces participants' exposure to risk. In addition to specifying certain quality requirements, contracts also can specify price, quantities to be produced, and services to be provided.

Approximately \$50 billion (one-third) of the total value of U.S. agricultural production is produced under contract arrangements. Although most agricultural products are still produced and marketed in an open market, contracting has been a significant and growing part of U.S. agriculture for the past 3 decades. USDA's 1993 Farm Costs and Returns Survey reported that more than 83 percent of the total value of production under contract was accounted for by vegetable, fruit, nursery, cattle, hog, dairy, and poultry products.

Farmers enter into contracts for various reasons, including income stability, improved efficiency, market security, and access to capital. Processors enter into contracts to control input supplies, improve responses to consumer demand, and expand and diversify operations. All of these reasons reflect efforts to bring a more uniform product to market.

The forms of contracts and their specific provisions and terms vary greatly among commodities and among producers of the same commodity. Contracting firms can have varying degrees of control over a farmer's production decisions, depending on the type and nature of the contract. There are generally two types of contracts—marketing and production contracts.

Marketing Contracts

Marketing contracts are between a contractor (usually a processor, food manufacturer or retail firm) and a grower. They set a price (or price establishment mechanism) and the market outlet for the commodity before harvest or before the commodity is ready to be marketed. Most management decisions remain with the grower, who retains ownership while the commodity is being produced. The farmer or rancher assumes all risks of production, but shares price risk with the contracting firm.

Marketing contracts can take many forms, but most commonly are structured as: (1) forward sales of a growing crop, where the contract provides for later delivery and establishes a price or contains provisions for setting a price later, (2) price setting after delivery, based on a formula that considers grade and yield, or (3) pre-harvest pooling arrangements, where the payment amount received is determined by the net pool receipts for the quantity sold.

Risk Management Education



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Production Contracts

Production contracts specify the quality and quantity of production inputs to be supplied by the contracting firm (processor, feed mill, or other farm operation), the quality and quantity of a particular commodity to be produced, and the type of compensation that the grower (contractee) will receive for services rendered. Because contractors control the amount produced and the production practices used, they tend to exert more influence over the terms of the contracts. One advantage of production contracts is that the farmer and contractor share the risks of both production and marketing of the commodity. Another advantage is that financing is more readily available because funds may be obtained either directly from the contractor or indirectly through other lenders who are more assured of loan repayment.

There are disadvantages to production contracts from both a contractor's and grower's perspective. Contractors who choose inefficient producers may lose a substantial amount of money before the problem is corrected. Growers may find it difficult to save enough money from the fixed payment to build their own facilities or purchase equipment. Thus, the potential for contract growers to move into independent ownership is somewhat limited. Another potential problem from the grower's perspective is contract length. Contract length may be substantially shorter than the time it takes to pay for the facilities or equipment. If this is the case, producers need to think about how they will pay for the facilities or equipment if the contract is terminated. Before considering the details of a contract, both parties should consider the reputation of the other party involved. Some contracts are not easily broken.

Market-specific production contracts are those negotiated between a buyer who operates at one stage of the value chain and a seller who operates at another. For example, a farmer may agree to deliver an agreed upon quantity of animals to a packer on a specific date. Increasingly, fresh vegetable packers/shippers are negotiating market-specific contracts with wholesale produce distributors. A buyer in such a contract benefits mainly because delivery schedules are specified. A vegetable freezer, for example, receives uniform vegetables on a consistent basis (time period), which may help to lower processing costs. The buyer, in a sense, purchases control over deliveries by reducing the seller's risk of finding a market. The farmer usually receives premiums above a spot-market price. The market-specific

contract usually transfers minimal control across stages, but consumers may benefit because price variability is reduced.

Production-management contracts typically transfer more control and risk across stages of the value chain than market-specific contracts. Production-management contracts typically emerge when decisions by the seller directly affect an attribute considered valuable to the buyer, or vice versa. In these contracts, buyers gain additional control over decisions that were once made by sellers in open production, such as timing of planting schedules or variety of seed planted.

By assuming control beyond that assumed in a market-specific contract, the contractor takes on some of the producer's price risk. In the case of processed vegetables, for example, the processor might enter into a production-management contract to "extend" the processing and growing season beyond the "typical" season. Production-management contracts probably benefit consumers by reducing price variability for a variety of products.

Resource-providing contracts can be thought of as production-management contracts in which the contractor, at one stage of production, retains ownership of a key input as it is transferred to another stage. For example, a poultry processor retains ownership of the chicks as they are raised by a farmer. Resource-providing contracts are usually used when specialized inputs and management practices are required to incorporate certain desired attributes into the final product. It is the ownership aspect that motivates a contracting firm to manage the practices of another stage of production. For example, by using hybrid pigs and specialized management practices during the growing stage, certain hog producers are able to produce hogs with less visible fat. Resource-providing contracts usually offer contracting firms the most control over another stage without completely integrating the stage. The contractor effectively purchases this control from the seller by taking on the seller's market risk. For example, recent analysis suggests that resource-providing contracts in the poultry industry relieve the grower of significant price risk.

Farmers themselves can be contractors. One farmer will often contract with another farmer to complete a stage of production, particularly in the raising of livestock and nursery-related products. The farmer, as contractor, can then specialize in one of the stages of production, and pay another producer to either provide young

animals/plants or finish the production cycle. Contracts between farmers are legally binding, just as they are between a farmer and a processor.

Swine Production Contracts

The contractor typically bears the costs associated with feed, medication, transportation in and out, feeder pigs for finishing contracts, and breeding stock for feeder pig production contracts. Growers typically raise the pigs in their own facilities and are compensated on a fee basis. Growers costs typically include facility costs, repairs, utilities, insurance, and property taxes. Potential contractors include investors, feed companies and farmers.

The two major risks involved in hog production are the need to invest in specialized facilities and fluctuating returns. Both contract and independent hog producers face the risks associated with investing in specialized facilities. Quite often hog buildings will bring less on the market than they are worth to the seller. They are not easily liquidated.

Investment risk is the largest risk contract hog producers face. The fact that most contracts have a shorter duration than the useful life of the hog facilities increases the grower's exposure to investment risk. A grower needs to factor this added risk into the decision to produce hogs under contract, and needs to determine what will happen if the contract is terminated. Contract producers do not face the risks associated with fluctuations in input and output prices. Unless performance or costs change from one period to the next, contract returns are flat.

Hog finishing contracts are more prevalent than contracts for feeder pig and farrow-to-finish production, or nursery production. Many hog finishing contracts guarantee a producer a fixed payment, and add or subtract bonuses and penalties from this payment. Bonuses are typically paid for keeping death losses low and feed efficiency high. Penalties are sometimes imposed for high death losses, unmarketable animals, and low feed efficiency.

Table 1 outlines a worksheet that can be used to calculate the costs and returns per pig space for contract hog finishing. Variable costs include utilities, fuel, oil, hired labor, and miscellaneous costs such as dues in professional organizations, pickup expenses, minor repairs, and interest on variable costs. Fixed costs include depreciation and interest on buildings and equipment, insurance, and property taxes. Fixed costs are typically about 12 to 18 percent of investment costs.

Table 1. Contract Feeder Pig Finishing Worksheet.

| Item | Example | Your farm |
|---|---------|-----------|
| A. Variable cost per pig space | | |
| 1. Utilities, fuel, and oil | \$ 0.70 | _____ |
| 2. Hired labor | 0.00 | _____ |
| 3. Building and equipment repairs | 3.25 | _____ |
| 4. Miscellaneous cost | 1.40 | _____ |
| 5. Total variable cost (1 + 2 + 3 + 4) | \$ 5.35 | _____ |
| B. Fixed cost per pig space | | |
| 6. Depreciation on buildings and equipment | \$10.50 | _____ |
| 7. Interest on buildings and equipment | 8.85 | _____ |
| 8. Insurance and taxes on buildings and equipment | 2.60 | _____ |
| 9. Total fixed cost (6 + 7 + 8) | \$21.95 | _____ |
| C. Total cost per pig space (5 + 9) | \$27.30 | _____ |
| D. Gross return per pig space ^a | | |
| 10. Base payment | \$35.00 | _____ |
| 11. Feed efficiency bonus or penalty | 0.00 | _____ |
| 12. Death loss bonus or penalty | 0.00 | _____ |
| 13. Total compensation per pig space | \$35.00 | _____ |
| E. Return to operator labor and management (D-C) | \$ 7.70 | _____ |

^a Bonuses and penalties should be spread over the number of head marketed.

Contract payments can be on a per head basis, a per pound of gain basis, a per day basis, or a per square foot of pig space basis. The payment used in the example in Table 1 is \$35 per pig space per year. Payments on a per square foot of pig space basis typically range from \$30 to \$40 per pig space per year.

Payments made on a per pig space basis are attractive from the grower's perspective because, under this contract, less than fully uti-

lized facilities will not add to fixed costs per head.

In the example presented, the grower is responsible for facility costs, labor, utilities, fuel, oil, repairs, insurance, and property taxes. Depreciation and interest are based on a building cost of \$144 per pig space, an equipment cost of \$20 per pig space, a salvage value of 10 percent, and an interest rate of 10 percent. Buildings are assumed to have a useful life of 15 years and equipment is assumed to have a useful life of 10 years. The calculations in the example assume that a grower will get 2.75 turns out of the facilities. Notice that the example in Table 1 does not include any bonuses or penalties. Bonuses are commonly paid if feed conversion and death loss are kept lower than a pre-arranged standard. Penalties may be incurred if death loss is higher than a pre-arranged standard.

The estimated return to operator labor and management for the example in Table 1 is \$7.70 per pig space. The expected return generated from contract production should be compared to expected returns that could be obtained from independent production. Potential contract payments are typically lower than potential returns from independent production. However, risk is also lower for contract production. The contract producer must decide whether the stability in returns associated with contract finishing is worth the sacrifice in the level of expected returns.

Contracting in the Broiler Industry

Specific terms of broiler contracts vary from company to company, with most contracts specifying the provision of inputs and the compensation to farmers. The farmer usually provides land and housing facilities, labor, and other operating expenses such as repairs and maintenance, manure disposal, and chicken house cleaning. The processor/contractor provides chicks, feed, veterinary supplies, management services, and transportation. Expenses for fuel

and litter disposal can be shared or paid by either party, depending on the specifications of the contract.

Contractors usually own and operate hatcheries, feed mills, and/or processing facilities. In some cases, the contractor may elect to pay for insurance and may provide financing to the farmer for capital purchases. The contractor also makes the most significant production decisions, such as the size and rotation of flocks, genetic characteristics of the birds, specific feed ingredients, and the capacity of the chicken house. By doing so, the contractor can ensure broilers of uniform size and quality that are more easily processed, thereby enhancing processing efficiency and lowering costs. A more uniform product is highly desired by consumers.

Broiler contracts usually provide three types of compensation for growers: (1) the base payment; (2) an incentive or performance payment; and (3) terms for any disaster payments. The base payment is simply a fixed payment per pound of live meat produced. The incentive payment is a percentage of the difference between average settlement costs of all flocks contracted during a specific period and costs associated with an individual grower. If, however, an individual grower's cost per pound of live meat produced is above the average cost per pound for the pool of growers, that grower is penalized. Outliers (extreme costs per pound of live animal produced) are typically removed from the average costs per pound calculation so that when one grower performs poorly, lowering the average, other growers are not rewarded. Contractors also use several methods to calculate incentive payments. However, the overriding objective is to provide growers with enough incentive to manage the poultry enterprise in a way that maximizes net returns to contractors. Finally, there are often provisions to compensate the grower in case of natural disaster (such as a flood or fire) for the amount of potential production that was damaged or lost.

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