Production and Marketing Contracts in Agriculture

- Production contracts
- Marketing contracts
- Trends in use by commodity
- Advantages and disadvantages

Contacts in Agriculture

- Production and marketing contracts governed about 36% of the value of U.S. agricultural production in 2001, compared with 28% in 1991.
- Prominent in broilers, hogs, sugar beets, processing tomatoes, and tobacco
- Small share in corn, soybeans, and wheat.

Contracts in Agriculture

- Common in some parts of ag
  - Land and equipment purchase or lease
  - Processing vegetables
  - Broiler production
- Increasing use in other areas
  - Hogs, specialty grain, tobacco
- More common with large farmers
Marketing Contracts

- Usually set a price (or pricing mechanism) and an outlet for the commodity, before harvest/delivery.
- Often limit a farmer’s exposure to wide price fluctuations and often specify product quantities and delivery schedules.
- The farmer retains substantial control over major management decisions since the farmer maintains ownership of the commodity and provides all inputs used during production, with limited direction from the contractor.

Production Contracts

- Resource-providing contracts
- Define specific farmer and contractor responsibilities regarding production inputs and practices.
  - specify particular inputs and set production guidelines
  - allow for contractor technical advice and field visits, leaving the farm operator with less control over input choices.
- Contractor owns the commodity
  - Grower is paid a fee for inputs provided

CONTRACTS

Methods of vertical coordination along the spectrum of control

Least

- Open production

Control offered to contractor or integrator

Market-specific contract (or marketing contract)

Resource-providing contract (or production contract)

Vertical integration

Most
Why Contracts are Used

- Contracts offer potential benefits to both buyers and sellers of agricultural commodities.
  - Farmers can obtain a guaranteed market for their production with a known price or pricing system.
  - Buyers can obtain an assured and timely supply of product with desired attributes.

Why Contracts are Used

- New technologies: Relationship-specific investments provide incentives for “opportunistic” behavior.
- Perishability: Timely delivery to processing plant very important (e.g., eggs, poultry).
- Control of Inputs/Output: Facilitates “branding” to attract consumers.

Contracts may Share Risks

- May reduce or remove input and output price risk and production risk for farmer
- May increase strategic risk if contractor fails or production is out of compliance.
Contract Reduce Buyer Risk

- Known supply and schedule
  - Identity preserved products
- Greater quality control and uniformity

Packer Motivation for Increased Pork and Beef Marketing Contracts, 1999.\(^a\)

<table>
<thead>
<tr>
<th>Motivation</th>
<th>Pork</th>
<th>Beef</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce plant operating costs by improving plant scheduling</td>
<td>3.5</td>
<td>2.9</td>
</tr>
<tr>
<td>Secure higher quality animals</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Secure more consistent quality of animals</td>
<td>4.3</td>
<td>4</td>
</tr>
<tr>
<td>Assure food safety</td>
<td>3.8</td>
<td>3</td>
</tr>
<tr>
<td>Long run price risk management</td>
<td>3</td>
<td>2.8</td>
</tr>
<tr>
<td>Week-to-week supply/price management</td>
<td>3.5</td>
<td>2.2</td>
</tr>
<tr>
<td>Reduce costs of searching for animals to procure</td>
<td>3.5</td>
<td>2.3</td>
</tr>
<tr>
<td>Able to purchase animals for lower price</td>
<td>2.3</td>
<td>1.8</td>
</tr>
</tbody>
</table>

\(^a\)Scale of 1 to 5, 1=not important to 5=very important

Source: Reported by Lawrence, Schroeder, and Hayenga (2001)

Larger Farms Use Contracts More

<table>
<thead>
<tr>
<th>Farm size (gross sales)</th>
<th>Farms with contracts</th>
<th>Value of production under contract (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $250,000</td>
<td>7.7</td>
<td>19.1</td>
</tr>
<tr>
<td>$250,000-$499,999</td>
<td>47.9</td>
<td>31.2</td>
</tr>
<tr>
<td>$500,000-$999,999</td>
<td>60.9</td>
<td>45.7</td>
</tr>
<tr>
<td>$1,000,000 or more</td>
<td>61.5</td>
<td>46.6</td>
</tr>
</tbody>
</table>

Use of production contracts, 1978-2001

Farms with contracts by contract type

Share of commodity value produced under contract

<table>
<thead>
<tr>
<th>Item</th>
<th>91-93</th>
<th>94-95</th>
<th>96-97</th>
<th>98-00</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>All crops &amp; livestock</td>
<td>28.9</td>
<td>34.2</td>
<td>32.1</td>
<td>37.3</td>
<td>36.4</td>
</tr>
<tr>
<td>Crops</td>
<td>24.7</td>
<td>25.8</td>
<td>22.9</td>
<td>26.7</td>
<td>26.2</td>
</tr>
<tr>
<td>Livestock</td>
<td>32.8</td>
<td>42.9</td>
<td>44.8</td>
<td>48.0</td>
<td>46.8</td>
</tr>
</tbody>
</table>
### Share of commodity value produced under contract

<table>
<thead>
<tr>
<th>Item</th>
<th>91-93</th>
<th>94-95</th>
<th>96-97</th>
<th>98-00</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crops</td>
<td>24.7</td>
<td>25.8</td>
<td>22.9</td>
<td>26.7</td>
<td>26.2</td>
</tr>
<tr>
<td>Corn</td>
<td>11.4</td>
<td>13.9</td>
<td>13.0</td>
<td>12.9</td>
<td>12.8</td>
</tr>
<tr>
<td>Soybean</td>
<td>10.1</td>
<td>10.0</td>
<td>13.5</td>
<td>10.3</td>
<td>8.7</td>
</tr>
<tr>
<td>Wheat</td>
<td>5.9</td>
<td>6.2</td>
<td>9.1</td>
<td>7.0</td>
<td>5.5</td>
</tr>
<tr>
<td>Rice</td>
<td>19.7</td>
<td>25.2</td>
<td>25.8</td>
<td>30.5</td>
<td>38.5</td>
</tr>
<tr>
<td>Peanut</td>
<td>47.5</td>
<td>58.3</td>
<td>34.2</td>
<td>45.1</td>
<td><strong>21.2</strong></td>
</tr>
<tr>
<td>Tobacco</td>
<td><strong>0.3</strong></td>
<td><em>0.6</em></td>
<td><strong>0.3</strong></td>
<td><em>1.9</em></td>
<td>48.6</td>
</tr>
<tr>
<td>Cotton</td>
<td>30.4</td>
<td>44.5</td>
<td>33.8</td>
<td>42.9</td>
<td>51.7</td>
</tr>
<tr>
<td>Fruit</td>
<td>na</td>
<td>64.2</td>
<td>56.8</td>
<td>65.4</td>
<td>59.0</td>
</tr>
<tr>
<td>Vegetable</td>
<td>na</td>
<td>55.0</td>
<td>38.4</td>
<td>39.7</td>
<td><em>36.9</em></td>
</tr>
<tr>
<td>Other crop</td>
<td>7.9</td>
<td>11.3</td>
<td>17.1</td>
<td>24.0</td>
<td><em>17.9</em></td>
</tr>
</tbody>
</table>

### Share of commodity value produced under contract

<table>
<thead>
<tr>
<th>Item</th>
<th>91-93</th>
<th>94-95</th>
<th>96-97</th>
<th>98-00</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livestock</td>
<td>32.8</td>
<td>42.9</td>
<td>44.8</td>
<td>48.0</td>
<td>46.8</td>
</tr>
<tr>
<td>Cattle</td>
<td>na</td>
<td>19.0</td>
<td><em>17.0</em></td>
<td>24.3</td>
<td>20.9</td>
</tr>
<tr>
<td>Hog</td>
<td>na</td>
<td>31.1</td>
<td>34.2</td>
<td>55.1</td>
<td>60.6</td>
</tr>
<tr>
<td>Poultry &amp; Egg</td>
<td>88.7</td>
<td>84.6</td>
<td>84.0</td>
<td>88.8</td>
<td>88.1</td>
</tr>
<tr>
<td>Dairy</td>
<td>36.8</td>
<td>56.7</td>
<td>58.2</td>
<td>53.6</td>
<td>53.1</td>
</tr>
<tr>
<td>Other</td>
<td><em>0.2</em></td>
<td><em>9.3</em></td>
<td>4.9</td>
<td>10.8</td>
<td><em>9.3</em></td>
</tr>
</tbody>
</table>

### Contract grain production

- **Specialty grain**
  - Seed corn, popcorn, white corn
  - Formula contract tied to another market
- **Silage production**
- **Production for IP grain**
Cattle Production Contracts

- Different from other commodities because the “grower” provides the management inputs and most decisions not the owner of the cattle
  - Commercial feedlots
  - Custom grazing

Hog Production Contracts

- Farmer is paid to provide building and labor
- Hog owner provides inputs and management
- Limited production risk, no price risk
- Accounted for 40% of hogs produced in mid 2005

Forward Contracts

- Contract for delivery
  - Defines time, place, form
- Tied to the futures market
  - Buyer offering the contract must lay off the market risk elsewhere
  - The buyer does the hedging for you
**Forward contract advantages**

- No margin account or margin call
- Working with local people
- Flexible sizes
- Known basis
- Tangible
- Simple

**Forward contract disadvantage**

- Inflexible
  - Replace price risk with production risk
  - Difficult to offset
  - Must deliver commodity
- Buyer “takes protection”
  - The known basis may be wider

**Grain Marketing Contracts**

- Forward contract for delivery
- Most common contract
- Formula contract for specialty grains
### Cattle Marketing Contracts

- **Forward contract for delivery**
  - Futures and basis fixed
  - Single group
- **Basis contract**
  - Only basis is fixed
  - Single group
- **Formula contract**
  - Price base on another related market
  - Ongoing agreement

### Cattle Marketing Controversies

- **Captive supply**
- **USDA funded studies**
  - Results are mixed so research continues
- **Pickett v. Tyson court case**
  - Jury found for producers
  - Judge and higher court found for Tyson

### Hog marketing contracts

- **Relatively new - growth since 1993**
  - Open market was 87-89% in 1993
  - Open market was about 11% in 2005
- **Product specification important**
  - Genetics, inputs, food safety
- **Delivery scheduling**
- **Types of contracts**
  - Formula price
  - Share price risk
  - Forward contract for delivery
Percent of US Hogs Sold Through Various Pricing Arrangements, January

<table>
<thead>
<tr>
<th>Hog or meat formula</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other formula</td>
<td>3.4</td>
<td>8.5</td>
<td>5.7</td>
<td>11.8</td>
<td>5.7</td>
<td>7.2</td>
<td>10.3</td>
</tr>
<tr>
<td>Other purchase agreement</td>
<td>14.4</td>
<td>16.9</td>
<td>22.8</td>
<td>8.6</td>
<td>19.2</td>
<td>20.6</td>
<td>15.4</td>
</tr>
<tr>
<td>Packer-sold</td>
<td>2.1</td>
<td>2.2</td>
<td>2.1</td>
<td>2.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packer-owned</td>
<td>16.4</td>
<td>18.1</td>
<td>17.1</td>
<td>21.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negotiated/spot</td>
<td>35.8</td>
<td>25.7</td>
<td>17.3</td>
<td>16.7</td>
<td>13.5</td>
<td>11.6</td>
<td>10.6</td>
</tr>
</tbody>
</table>

Risk Sharing Contracts

- **Window contract**
  - Set upper and lower bound
  - Share the “pain and gain” outside
- **Cost based price floor “Ledger”**
  - Minimum price tied to feed price
  - Pay back “loan”
  - Give up part of higher prices

Weekly Hogs Prices, Cost of Production and Contract
Contract Examples

- Iowa Attorney General
  - [http://www.state.ia.us/government/ag/ag_contracts/](http://www.state.ia.us/government/ag/ag_contracts/)

- Current research on web
  - Hogs: [http://www.econ.iastate.edu/faculty/lawrence/HOGS.htm](http://www.econ.iastate.edu/faculty/lawrence/HOGS.htm)
  - Production and Marketing Characteristics of U.S. Pork Producers, 2000
  - Understanding Hog Marketing Contracts - September 18, 1999
  - Porker Concentration, Captive Supplies and Fed Cattle Prices
### Producer’s Motivation for Entering Marketing Contract with Packer

- Access to capital and better financing
- Reduced price risk
- Assure a buyer
- Reduced marketing costs
- Improved prices or premiums

### Reasons for production integration

- Greater control
  - Product quality / specifications
  - Scheduling
  - Industrialization
- Risk management
- Access to resources