# Production Contracts and Buyer Market Power in the U.S. Broiler Chicken Industry

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***Invited Case Study Paper prepared for presentation at the 2024 Agricultural & Applied Economics Association Annual Meeting, New Orleans, LA; July 28-30***

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**Abstract**

The motivations for this case study are recent developments in the U.S. broiler chicken industry involving allegations of an illegal exercise of buyer market power by the five largest broiler chicken processors in the country in the market for broiler grow-out services. This case study introduces economic, business, and legal issues related to the alleged input price-fixing cartel of the five largest broiler processors. The case study describes the broiler processors' conduct and presents a theoretical framework that may explain market and price effects of the alleged input price-fixing cartel. In addition, the case study introduces a comprehensive analysis of a sample broiler production agreement between a broiler grower and a broiler processor with a particular attention paid to design of the payment (compensation) system included in this agreement. The teaching note provides suggested answers to discussion and analytical questions, and it also includes multiple-choice questions that can be used as in-class assignments, quizzes, and exam questions.[1] This case study is suitable for a variety of undergraduate and graduate courses taught in agricultural economics and agribusiness programs and for extension and outreach audiences.

**Key words:** Broilers, monopsony, oligopsony, price-fixing, production contracts, Sherman Act.

**JEL codes:** L1, L2, L4, L66, Q13.

[1] The Teaching Note is available from the author upon request.

## 1. Introduction

This case study is motivated by recent developments in the U.S. broiler chicken industry involving allegations of an illegal exercise of buyer market power by the five largest broiler chicken processors in the country in the market for broiler grow-out services. The U.S. broiler chicken[2] industry is a highly concentrated industry meaning that a relatively small number of large broiler processors produce and market most of the broiler chickens in the country. The U.S. broiler chicken industry is a vertically integrated industry. The broiler processors control production processes at consecutive stages of the broiler supply chain by using complex production contracts with broiler growers and by operating their own farms. Under production contracts, broiler growers (farmers) provide services of growing broilers (broiler grow-out-services) for broiler processors in exchange for a compensation (fee).

In 2017, a group of broiler growers filed a class action antitrust lawsuit against the five largest broiler processors in the country: Tyson Foods, Inc., Pilgrim's Pride Corporation, Perdue Farms, Inc., Koch Foods, Inc., and Sanderson Farms, Inc. (Goeringer 2022; *Haff Poultry, Inc. et al v. Tyson Foods, Inc. et al 2017;* Shaffer 2017). The broiler growers (plaintiffs) alleged that these broiler processors (defendants) engaged in an unlawful conspiracy to artificially suppress compensation (fee) they paid to broiler growers for broiler grow-out services below competitive levels and violated the Sherman Antitrust Act (1890) and the Packers and Stockyards Act (1921). The plaintiffs claimed that they were underpaid due to this price-fixing conspiracy. The lawsuit was settled in the period of 2021-2023 for the total amount of $69 million (In re Broiler Chicken Grower Antitrust Litigation No. II. 2023). The defendants did not admit to any wrongdoing.

[2] Broiler chickens are chickens raised for meat production. Broiler chickens are referred to as broilers in this case study. Broiler chicken processors are referred to as broiler processors. Broiler chicken growers are referred to as broiler growers.

This case study introduces economic, business, and legal issues related to the alleged input price-fixing cartel of the largest broiler processors in the country.[3] In particular, the case study describes business methods that the broiler processors used to allegedly illegally exercise their buyer market power and a theoretical framework that may explain market and price effects of the alleged input price-fixing cartel. In addition, the case study introduces a comprehensive analysis of a sample broiler production agreement between a broiler grower and a broiler processor with a particular attention paid to design of the payment (compensation) system included in this agreement.

This case study is suitable for a variety of undergraduate and graduate courses taught in agricultural economics and agribusiness programs, including agricultural marketing, agricultural markets and prices, farm management, agribusiness management, and applied industrial organization. The case study is also suitable for extension and outreach audiences. Table 1 summarizes student learning objectives.

## 2. U.S. Broiler Chicken Industry

### 2.1. Structure

The U.S. broiler chicken industry is concentrated meaning that a relatively small number of large firms (broiler processors) control most of the production and marketing in the industry. For example, in 2007 the five-firm concentration ratio (CR5) was 60.9 percent, and the ten-firm concentration ratio (CR10) was 75.8 percent (Weaver 2014).[4] As of 2007, Pilgrim's Pride and

[3] Broiler grow-out services that broiler growers provide for broiler processors are the input(s) for broiler processors. The compensation (fee) that broiler processors pay to broiler growers for these services is the input price for broiler processors.

[4] The $N$-firm concentration ratio is a commonly used measure of market concentration, which represents a combined market share of the $N$ largest firms in the industry (Besanko et al. 2006). CR4 ($N = 4$) is the most frequently used measure. The firms' market shares are typically calculated using the firms' revenue (sales), but production volumes can be used as well (Table 2). A high

Tyson Foods were the two largest firms with respective market shares of 31.3 percent and 25.9 percent; Perdue Farms was the third largest firm with a market share of 10.0 percent (Congressional Research Service 2009).

JBS S.A., a Brazilian company, purchased Pilgrim's Pride in 2009.[5] After acquiring Pilgrim's Pride, JBS became the second largest broiler processor in the country. As indicated by changes in CR4, market concentration decreased over the last 15 years. Given that since 2006 smaller companies grew faster than the largest companies, CR4 decreased from 57.8 percent in 2006 to 52 percent in 2020 (O'Keefe 2021). The combined market share of the two largest broiler processors (CR2) decreased from approximately 45 percent in 2006 to 35 percent in 2020 (O'Keefe 2021). As of 2020, the four largest companies in the industry were Tyson Foods, Pilgrim's Pride (JBS USA), Sanderson Farms, and Mountaire Farms, followed by Perdue Foods and Koch Foods (Table 2).

**2.2. Production System**

The production process for broiler chickens includes six vertically aligned stages (National Chicken Council 2024; MacDonald 2014 and 2008; Weaver 2014).[6]

1. ***Primary breeding stage:*** primary breeding companies produce breeder chicks with desirable genetics characteristics, which are delivered to breeder farms.

level of market concentration can facilitate anticompetitive conduct of firms operating in concentrated industries. It is considered that if CR4 exceeds 75 percent, an industry is conducive to collusion, and if CR4 is smaller than 40 percent, an industry is not likely to present competition concerns (Hovenkamp 2005).

[5] Pilgrim's Pride filed for bankruptcy in 2009 because it could not maintain a viable profitability level due to increasing feed prices and low chicken prices (Bolotova 2022; Chasan and Burgdorfer 2009; Spector, Etter, and Stewart 2009).

[6] A figure depicting these production stages can be downloaded on the webpage of the National Chicken Council, https://www.nationalchickencouncil.org/industry-issues/vertical-integration/.

2. ***Breeder stage:*** on breeder farms, breeder chicks are raised to produce fertilized eggs, which are delivered to hatcheries.

3. ***Hatching stage:*** in hatcheries, fertilized eggs are placed in incubators (the incubation period is 3 weeks); young chicks are hatched, vaccinated, and delivered to grow-out farms.

4. ***Grow-out (farm) stage:*** on farms owned and operated by broiler growers, young chicks are raised to a desirable market age and weight (6 to 7 weeks).

5. ***Feed manufacturing stage:*** feed mills mix feed rations, which are used to feed breeder chicks and broiler chicks. The feed mixes include corn, soybean meal, and added vitamins and minerals.

6. ***Processing stage:*** in processing plants, broiler chickens are slaughtered and processed in various chicken cuts and chicken products to be sold to wholesalers, retailers, restaurants, institutional buyers, and export customers. Chicken by-products are utilized by rendering plants.

**2.3. Vertical Integration, Production Contracts, and Payment System**

The broiler chicken industry has a high degree of vertical integration. This means that broiler processors (integrators) maintain the ownership of broilers at all stages of the broiler supply chain. Approximately 90 percent of broilers are raised under production contracts between broiler processors and broiler growers, about 9 percent of broilers are raised on the farms owned by broiler processors, and the remaining 1 percent is raised by independent chicken growers (National Chicken Council 2024; National Chicken Council Chicken Check In 2024a).[7]

[7] A wide adoption of production contracts was a response to technological innovations taking place in the industry (Dimitri, Jaenicke, and Effland 2009; Knoeber 1989). These innovations included the development of new disease control and eradication methods, the development of new genetically superior breeding stocks that were geared towards meat production rather than egg production, and the innovations in composition of feed rations.

Broiler processors own feed mills, hatcheries, and processing plants (National Chicken Council 2024; Weaver 2014). Broiler processors use complex production contracts with broiler growers, according to which broiler growers raise broilers for broiler processors in exchange for a fee. Broiler growers do not own broilers they raise for broiler processors. Production contracts specify responsibilities of broiler processors and broiler growers in great details (MacDonald 2014 and 2008; Pilgrim's Pride Broiler Production Agreement 2005).[8]

Typically, under production contracts, broiler processors are responsible for providing young chicks, feed, veterinary supplies and services, and transportation of chickens to and from the farms, and they also determine production management practices.[9] Broiler growers are responsible for providing chicken housing facilities, land, labor, utilities, operating expenses, and following production management practices determined by the processor.

The payment (compensation) system used in production contracts is based on relative performance; this payment system is referred to as the tournament system (National Chicken Council Chicken Check In 2024b; Federal Register 2022; Knoeber and Thurman 1995; Knoeber 1989). The payment to an individual broiler grower is calculated based on this grower's

[8] To better understand responsibilities of broiler growers and processors and the payment system included in production contracts, it is important to identify inputs and outputs for broiler growers and processors. For broiler processors the outputs are processed chickens and chicken products that are eventually sold at the retail level (whole chickens; chicken breasts, wings, and legs; ground chicken; chicken livers; chicken nuggets, etc.). For broiler processors, the inputs they pay for include feed (corn and soybean meal); broiler chicks (young chickens delivered to broiler growers); broiler chickens that are market-ready weight (raised by broiler growers); veterinary services and medications. For broiler growers the output is live broiler chickens (market-ready weight), and the main inputs they pay for include chicken housing, labor, utilities, and litter removal. For broiler processors additional inputs include broiler processing plants (fixed inputs) and wages of plant workers (variable inputs).

[9] Feed (corn and soybean meal) is the major input used in broiler production. The feed costs represent approximately 65 to 75 percent of broiler production costs (National Chicken Council Chicken Check In 2024b; Weaver 2014).

performance relative to the group of broiler growers. The individual grower's performance is compared to the "average performance," which is determined using all growers located in a certain area delivering broilers to the processor during a particular week.

The performance measure (formula) is developed by the processors. The cost-based performance measure has been used in the industry in the last decades (Federal Register 2022; Pilgrim's Pride Broiler Production Agreement 2005; Knoeber and Thurman 1995; Knoeber 1989). The cost-based performance measure ($ per pound of broilers) is the ratio of costs attributed to young chicks, feed, and medications divided by the gross weight of broilers.[10] The payments to broiler growers are calculated as follows.

**Payment to broiler growers** performing ***above*** **average** =

= **base pay + bonus** for the ***above*-average** performance

**Payment to broiler growers** performing ***below*** **average** =

= **base pay - penalty** for the ***below*-average** performance

The bonus (penalty) is typically the deviation of the performance measure calculated for an individual grower from the group average. Broiler growers performing above the group average are low-cost growers for broiler processors. Broiler growers performing below the group average are high-cost growers for broiler processors. Broiler growers are compensated for high feed efficiency, low mortality rates, and the quantity of liveweight pounds of broilers delivered to the processors (National Chicken Council Chicken Check In 2024b). Broiler growers with upgraded chicken housing facilities, who follow proper production management practices and raise healthy chickens are typically rewarded under this payment system. In addition, the relative-performance

[10] This cost-based performance measure ($ per pound of broilers) reflects the Average Variable Costs of broiler processors at the broiler production stage of their vertically integrated operations.

payment system shifts input and output prices risks, and common production risks from broiler growers to broiler processors (Knoeber and Thurman 1995).

## 3. Alleged Broiler Chicken Processor Input Price-Fixing Cartel

In February 2017, a group of broiler growers (plaintiffs) filed a class action antitrust lawsuit against the five largest broiler processors (defendants) in the country: Tyson Foods, Inc., Pilgrim's Pride Corporation, Perdue Farms, Inc., Koch Foods, Inc., and Sanderson Farms, Inc. (Goeringer 2022; *Haff Poultry, Inc. et al v. Tyson Foods, Inc. et al 2017;* Shaffer 2017). The broiler growers alleged that since at least 2008 these broiler processors agreed not to compete for broiler grow-out-services with the purpose and effect of fixing, maintaining, and/or stabilizing the broiler grower compensation below competitive levels and violated the Sherman Antitrust Act (1890) and the Packers and Stockyards Act (1921).

The plaintiffs alleged that the following industry characteristics and conduct of the defendants indicated a presence of the input (broiler grow-out service) price-fixing cartel of the five largest broiler processors in the country (*Haff Poultry, Inc. et al v. Tyson Foods, Inc. et al 2017, 2021*).

### 3.1. The U.S. Broiler Chicken Industry Characteristics Facilitating Collusion

1. The broiler chicken industry is ***a highly concentrated industry*** where large broiler processors can exercise buyer market power in the input market and seller market power in the output market to increase their profit above competitive levels (Section 2.1 of the case study).

2. The broiler chicken industry is ***a vertically integrated industry*** where broiler processors control broiler production process, as well as agricultural inputs and broiler grow-out services used in this process (Sections 2.2 and 2.3 of the case study). As a result of vertical integration, there is no spot (cash) market for broiler chickens.

3. The broiler chicken industry has ***high entry barriers for new broiler processors***. High barriers to entry are high costs that new broiler processors have to incur to enter the industry. For example, these costs include fixed costs incurred to build or purchase a chicken processing plant, costs associated with establishing a distribution network for processed chickens, and costs incurred to comply with federal regulations.

4. The broiler chicken industry has ***high exit barrier for broiler growers.*** High exit barriers are high costs that broiler growers have to incur to exit the industry. To enter the industry, broiler growers make substantial financial investments in broiler-specific housing facilities and equipment typically required by broiler processors. These facilities and equipment have no use outside of the broiler chicken industry. To pay their financial debts, broiler growers must keep caring for broilers and are unlikely to exit the industry. Therefore, broiler growers become insensitive to change in compensation paid by broiler processors.

5. ***Broiler grow-out services are fungible (homogenous).*** Broiler growers raise broiler chickens for broiler processors using young chickens, feed, and medications supplied by these processors. Broiler growers provide labor, investment capital, housing facilities, and land that are practically homogenous.

6. There are numerous ***opportunities to collude*** in the industry. The broiler processor representatives participate in various ***industry meetings*** on a regular basis where they have opportunities to meet and communicate with one another.

**3.2. The Broiler Processor Anticompetitive Conduct**

1. ***The broiler processors agreed to share detailed data on the broiler grower compensation with the purpose and effect of artificially decreasing broiler grower compensations below competitive levels.*** By disclosing to each other highly sensitive and confidential compensation rates, broiler

processors suppressed competition for broiler grow-out services and decreased compensation rates to increase their profit. These illegal information exchanges decreased compensation rates paid to all broiler growers in the country.

To facilitate illegal information exchanges, the broiler processors "partnered" with Agri Stats, a third-party data aggregation service. Agri Stats collected detailed, competitor-sensitive, non-public information about broiler grower compensation from broiler processors, processed these data, and shared them back with the broiler processors.

The broiler processors, who are cartel members, operate approximately 120 broiler complexes (broiler processing plants) encompassing about 98 percent of broiler production in the country. The data that the five largest broiler processors share through Agri Stats are related to production, costs, and profit. The data are sorted by geographic regions and are viewable at the grower, flock, and plant level.

The following excerpt from the complaint filed by broiler growers against the five largest broiler processors explains the type of data that these broiler processors shared with one another (*Haff Poultry, Inc. et al v. Tyson Foods, Inc. et al 2021:* paragraph 70).

***"Cartel members provide granular data to Agri Stats. The data includes, inter alia:***

***a. Grower compensation;***

***b. the sex, breed, genetic makeup, and genetics company used for the primary breeder stock of the Broilers used by each Complex's Integrator;***

***c. the type of equipment and grow-out houses used by each Complex's Integrator, including numerous mechanical aspects of the facilities;***

***d. Broiler weight for each Complex;***

***e. the type of feed and medicine utilized by (and costs for) each Complex;***

***f. Broiler transportation costs from Grow-Out facilities to each Complex;***

***g. the number of chicks delivered, bird mortality by week and overall percentage, average daily weight gain by chicks (weighted against the feed utilized, referred to as a feed-conversion ratio) for each Complex;***

***h. live pound of Broiler produced per square foot of grow-out house for each Complex;***

***i. monthly operating profit per live pound, sales per live pound, and costs per live pound for each Complex;***

***j. anticipated capacity and future output for each Complex; and***

***k. the general geographic location of each Complex by Sub-Region (Agri Stats includes at least 50 and likely more Sub-Region identifier codes).”***

While data that Agri Stats shares back with broiler processors are anonymous, given the level of data disaggregation, anyone familiar with the industry can use these data to recognize which data belong to which broiler processor, including a geographic location of each specific complex (broiler processing plant). Consequently, the cartel members can identify the broiler grower compensation, as well as the cost and profit per live pound of broilers for each complex. The cartel members can monitor compensation rates they pay to broiler growers to ensure that they pay the same compensation rates.

2. ***The broiler processors agreed not to compete for broiler grow-out services and not to solicit each other broiler growers*** *(not to hire broiler growers from each other)*. By agreeing not to compete for broiler grow-out services, the broiler processors reduced their exposure to normal competitive pressures. In addition, this illegal “no poach” agreement reduced potential cheating of

cartel members on their agreement.[11] As a result, broiler growers are not able to change broiler processors. In addition, production contracts that broiler growers sign are on "take-it-or-leave" basis.

3. ***The broiler processors engaged in a "feedmill cross-testing" program.*** Some broiler processors exchanged feed and chicks to determine with processors' feed and/or chicks are of superior quality. Participating in this type of program is against the economic rational behavior of firms operating in a truly competitive market. To maintain a competitive advantage, firms competing against each other would not share proprietary feed and/or chicks among them.

4. ***The cartel members allow their CEOs to access each other's production complexes on a regular basis. The cartel members also allow high level employees to move among the companies.*** Both business practices allow CEOs and employees of the cartel members to learn proprietary production methods and other aspects of business operations.

## 4. Theoretical Framework

Based on the number of broiler processors operating in the U.S. broiler chicken industry, the industry is a classic oligopsony—market structure with a relatively small number of large buyers. To understand oligopsony market power, oligopsony is evaluated relative to a perfectly competitive industry. Broiler processors are buyers of broiler grow-out services provided (sold) by broiler growers. The broiler grow-out services are the input for broiler processors. In the theoretical framework explained in this section, the input quantity is the quantity of broiler grow-

[11] Cartel members may have incentives to deviate from the cartel agreement (to cheat on the cartel agreement), if they decide to maximize their individual profit, rather than the joint profit of all cartel members (Stigler 1964).

out services that broiler processors purchase, and the input price is the payment (compensation) that broiler processors pay to broiler growers for these broiler grow-out services.[12]

Figure 1 is a graphical representation of economic models explaining the profit-maximizing behavior of a perfectly competitive industry and industries with buyer market power (oligopsony and monopsony). The inverse demand curve (labeled as P output) is a graphical representation of the inverse (price-dependent) demand function for processed broiler chickens that broiler processors face. Processed broiler chickens are the output for broiler processors.

The marginal cost curve (labeled as MC input) is a graphical representation of the marginal cost function of broiler processors, which coincides with the inverse supply curve for broiler grow-out services provided (sold) by broiler growers. The marginal cost is the cost of broiler grow-out services for broiler processors within this theoretical framework. Broiler grow-out services are the *input* for broiler processors. Broiler growers are sellers (suppliers) of this input. Broiler processors make decisions on the *input* quantity to purchase. The *input* price that broiler processors pay is a function of the *input* quantity they purchase.[13] From the perspective of broiler processors, price-quantity combinations depicted in Figure 1 are *input* prices and *input* quantities.

To maximize its profit, oligopsony (a group of the largest broiler processors) purchases the *input* quantity (Qo), which is smaller than the *input* quantity purchased by a perfectly competitive industry represented by many buyers (Qc). The *input* price oligopsony pays (Po) is lower than the *input* price a perfectly competitive industry pays (Pc), and oligopsony's profit is higher than the

[12] The quantity of broiler grow-out services can be thought of as of the quantity of broilers produced by broiler growers for broiler processors.
[13] Given that broiler grow-out services are the input for broiler processors, broiler grow-out service price and quantity are related within the inverse supply framework. A decrease (increase) in input quantity causes input price to decrease (increase).

profit of a perfectly competitive industry by Pc-Po in $ per unit or (Pc-Po)*Qo in total $. The oligopsony's profit increases due to the decrease in input costs.[14]

Assume that oligopsonists form an *input* price-fixing cartel. Theoretically, they aim to act as a single buyer in the industry (i.e., a monopsonist). To maximize their *joint* profit, oligopsonists decrease the *input* quantity they purchase (Qo) possibly to the *input* quantity purchased by monopsonist (Qm).[15] As a result, oligopsony price (Po) would decrease to possibly approach monopsony price (Pm). Due to the cartel, the joint profit of oligopsonists acting as a monopsonist further increases by Po-Pm in $ per unit or by (Po-Pm)*Qm in total $, which is a cartel underpayment to sellers of the input. The monopsony's profit increases due to the decrease in input costs.

The cartel underpayment to sellers of the input expressed in total $ is the shaded rectangle in Figure 1. The cartel underpayment is the basis for damages that broiler growers aimed to recover during the antitrust litigation. In summary, the buyer cartel's effects on sellers of the cartelized product (service) are a decrease in the product (service) quantity purchased from these sellers, a decrease in the product (service) price paid to these sellers, and a deadweight loss. The latter is the "DWL" triangle in Figure 1. Because of DWL, there are sellers who do not sell their product (service) due to lower prices.

[14] In this case study, "profit" refers to *economic* profit, which is different from *accounting* profit. Accounting profit is equal to revenue minus costs associated with generating that revenue. Economic profit is equal to revenue minus costs associated with generating that revenue and minus opportunity cost. Opportunity cost is the forgone benefit of using capital in an alternative business venue. A simple example is earning interest on the money deposited in a savings account in a bank.
[15] Monopsony maximizes its profit when it purchases the input quantity, which is at the intersection of Marginal Expenditures (MEm) and demand (P) curves on the graph. Given a linear supply (marginal cost) curve, MEm curve is twice as steep as the supply curve, and both curves have the same Y-axis intercept. Economic models of oligopsony and monopsony are explained in standard textbooks used in economics and agricultural economics programs (Besanko and Braeutigam 2002; Norwood and Lusk 2008).

## 5. A Sample Broiler Production Agreement: Payment (Compensation) System

This section explains a payment (compensation) system included in a Pilgrim's Pride Broiler Production Agreement: Exhibit A (2005). In 2009, Pilgrim's Pride filed for bankruptcy and was purchased by JBS SA, a Brazilian company, the largest meat processor in the world (Chasan and Burgdorfer 2009; Spector, Etter, and Stewart 2009). The Pilgrim's Pride Broiler Production Agreement (2005) is available in public access on the U.S. Securities and Exchange Commission (SEC) webpage.

The Formula Cost is the performance measure that Pilgrim's Pride used to evaluate broiler growers' performance. The Formula Cost ($ per pound) is calculated for each individual grower "selling" (delivering) broilers to Pilgrim's Pride during a particular week. The Average [Formula] Cost ($ per pound) is calculated for a group of broiler growers "selling" (delivering) broilers to Pilgrim's Price during that week.

The following procedure is used to determine the relative performance of each broiler grower. The Formula Cost is calculated for each individual grower, and then it is compared to the Group Average Cost to determine if each broiler grower performs above or below the average.

Individual Grower **(IG) Formula Cost ($ per pound)** =

= [$0.085 per pound of feed * Q feed (pounds) +

+ $0.16 per chick * number of chicks +

+ medication costs ($)]/Gross weight (pounds) of broilers produced by IG

All Growers Combined: **Total Cost ($) =**

= $0.085 per pound of feed * Q feed (pounds) +

+ $0.16 per chick * number of chicks + medication costs ($)

The **Average Cost** for the Group **($ per pound)** =

= Total Cost/Gross weight (pounds) of broilers produced by all growers

Growers with extremely high formula cost (exceeding the Group Average by $0.0180 per pound of more) are excluded from the group and the Average Cost for the Group is recalculated. The payments to Individual Growers are calculated as follows.

**Payment to IG = Base Pay + Adjustment (Bonus/Penalty) based on relative performance**

If **IG's Formula Cost < Group Average Cost**

-> **A low-cost grower** for Pilgrim's Pride -> **Above-average** performance -> **Bonus**

If **IG's Formula Cost > Group Average Cost**

-> **A high-cost grower** for Pilgrim's Pride -> **Below-average** performance -> **Penalty**

**Payment to IG** performing **above average = Base pay + the deviation from the average**

**Payment to IG** performing **below average = Base pay - the deviation from the average**

The Base pay is $0.046 per pound. The minimum pay is set as well.

***Example #1***

**IG #1 Formula Cost** is **$0.003 per pound *below* the average**

This is **a low-cost grower** for Pilgrim's Pride -> **Bonus [the deviation from the average]**

Payment to IG#1 = $0.046 **+ $0.003** = $0.049 per pound

***Example #2***

IG #2 **Formula Cost** is $**0.003 per pound *above* the average**

This is **a high-cost grower** for Pilgrim's Pride -> **penalty [the deviation from the average]**

Payment to IG#2 = $0.046 **- $0.003** = $0.043 per pound

## 6. Antitrust Issues

In February 2017, a group of broiler growers (plaintiffs) filed a class action antitrust lawsuit against the five largest broiler processors (defendants) in the country: Tyson Foods, Inc., Pilgrim's Pride Corporation, Perdue Farms, Inc., Koch Foods, Inc., and Sanderson Farms, Inc. (*Haff Poultry, Inc. et al v. Tyson Foods, Inc. et al 2017*). The broiler growers alleged that since at least 2008 these broiler processors agreed not to compete for broiler grow-out-services with the purpose and effect of fixing, maintaining, and/or stabilizing the broiler grower compensation below competitive levels and violated Section 1 of the Sherman Antitrust Act (1890) and Section 202 of the Packers and Stockyards Act (1921).

Section 1 of the Sherman Act prohibits contracts, combinations, and conspiracies in restraint of trade in interstate commerce (Federal Trade Commission 2024a). Price-fixing agreements (cartels or conspiracies) among competitors (firms selling or purchasing the same or similar products) are examples of the restraints of trade that are most damaging to the market. Price-fixing agreements aim to increase, decrease, or fix (stabilize) product prices, and can be verbal, written, or inferred from the conduct of firms (Federal Trade Commission 2024b). The market effects of a typical input price-fixing cartel are a decrease in the product (service) quantity purchased by the cartel members (buyers of the product), a decrease in the product (service) price paid to the sellers of this product, a welfare transfer from the sellers to the buyers (underpayment), and a deadweight loss, due to which there are also sellers, who do not sell the product (service) because of lower prices (Figure 1).

The broiler growers alleged that the exchanges of confidential business information among the broiler processors (accomplished through Agri-Stats, a third-party data aggregation service) constituted a price-fixing agreement among the five largest broiler processors violating Section 1

of the Sherman Act. Sharing competitor-sensitive information may be used as a factor when a price-fixing agreement violating Section 1 of the Sherman Act is to be inferred from the firms' conduct.[16]

For violations of the Sherman Act, private parties (plaintiffs) are entitled to recover treble damages under the Clayton Act (Hovenkamp 2005). The underpayment is the basis for damages in the input price-fixing cartel cases. The underpayment is the difference between the product (service) price received by sellers (service providers) and the product (service) price they would have received absent the cartel times the product (service) quantity sold. The service is broiler grow-out service in the broiler chicken antitrust litigation.

The broiler growers were entitled to recover three times the underpayment. The lawsuit was settled. In June 2021, Tyson Foods and Perdue agreed to pay broiler growers $21 million and $14.750 million, respectively (In re Broiler Chicken Grower Antitrust Litigation No. II. 2024). In May 2022 Koch Foods and in February 2023 Sanderson Farms agreed to pay to broiler growers $15.5 million and $17.750 million, respectively (In re Broiler Chicken Grower Antitrust Litigation No. II. 2024). The settlements were calculated for the period of January 27, 2013 to December 31, 2019 (the period of allegedly anticompetitive conduct included in the settlement agreements). In their settlement agreements, the broiler processors did not admit to any wrongdoing.

## 7. Analytical and Discussion Questions

The teaching note provides additional guidance for selected questions and suggested answers to all questions. The teaching note also includes three sets of multiple-choice questions that can be used as in-class assignments, quizzes, and exam questions, depending on the course where this

[16] The U.S. Federal Trade Commission guides that sharing competitor-sensitive information (information on prices, quantities, costs, and customers) may have anticompetitive effects and is likely to raise competition concerns (Bloom 2014).

case study is taught. Finally, the teaching note includes a production contract checklist to be used to evaluate the structure of the Pilgrim's Pride Broiler Production Agreement.

**1.** Discuss the U.S. broiler chicken industry's structure, production system, and production contracts.

**2.** Discuss the U.S. broiler chicken industry characteristics and conduct of the five largest broiler processors that may have indicated a presence of the input price-fixing cartel.

**2.1.** Explain the U.S. broiler chicken industry characteristics that may have facilitated collusion among the five largest broiler processors in the country in the market for broiler grow-out services.

**2.2.** Explain business practices that the five largest broiler processors in the country used to allegedly illegally exercise buyer market power in the market for broiler grow-out services.

**3.** Using a graphical analysis, explain conduct and performance of the U.S. broiler chicken industry in the situations described in Questions 3.1 and 3.2. In the case of each question, draw and label relevant curves and depict relevant input (broiler grow-out service) price-quantity combinations to complete the graphical analysis.

**3.1.** Assume that broiler processors (buyers of broiler grow-out services) behave as a classic oligopsony forming an *input* price-fixing cartel. Note that the input is broiler grow-out services. First, explain changes in the input quantity, price, and industry profit in the oligopsony scenario (the pre-cartel situation), relative to a perfectly competitive industry scenario. Second, explain changes in the input quantity, price, and industry profit in the monopsony scenario (i.e., *input* price-fixing cartel of the five largest broiler processors), as compared to the oligopsony scenario. In both cases, describe the effects of the identified changes on broiler processors and broiler growers.

**3.2.** Assume that in the original scenario the five largest broiler processors act as a single monopsonist by operating an *input* price-fixing cartel. Note that the input is broiler grow-out services. Broiler growers discover the existence of this cartel and file an antitrust lawsuit against the broiler processors. Assume that during the antitrust litigation period (the new scenario), the five largest broiler processors stop coordinating (colluding) on the price (payment) they pay for broiler grower-out services (i.e., the price-fixing cartel collapses). Determine the type of market structure of the broiler chicken industry in the period of antitrust litigation. Explain changes in the input quantity, price, and industry profit in the antitrust litigation period, as compared to the original scenario of the price-fixing cartel. In both cases, describe the effects of the identified changes on broiler processors and broiler growers.

**4.** Explain design of the payment (compensation) system used in production contracts in the U.S. broiler chicken industry.

**5.** Evaluate the structure of the Pilgrim's Pride Broiler Production Agreement (its main terms and conditions) discussed in this case study.

**5.1.** Use a production contract check list to understand and describe responsibilities of a broiler grower and a broiler processor (Pilgrim's Pride). The production contract checklist is included in the teaching note.

**5.2.** Explain design of the payment system included in the Pilgrim's Pride Broiler Production Agreement.

**6.** Explain the reasons that broiler growers filed an antitrust lawsuit against the five largest broiler processors in the U.S. Discuss the role of Section 1 of the Sherman Act in regulating conduct of broiler processors in the analyzed industry situation. Explain recent outcomes of the antitrust litigation described in this case study.

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**Table 1. Student Learning Objectives**

| | Student Learning Objectives (SLOs) |
|---|---|
| SLO #1 | To discuss the U.S. broiler chicken industry's structure, production system, and production contracts. |
| SLO #2 | To discuss the U.S. broiler chicken industry characteristics and conduct of the five largest broiler processors that may have indicated a presence of the input price-fixing cartel in the market for broiler grow-out-services. |
| SLO #3 | Using a graphical analysis, to explain a theoretical framework incorporating buyer market power in the broiler industry and the market power effects on broiler processors and broiler growers. |
| SLO #4 | To evaluate the structure of a sample broiler production agreement using a production contract checklist to describe major responsibilities of a broiler grower and a broiler processor. |
| SLO #5 | To explain design of the payment system included in broiler production agreements used in the U.S. broiler chicken industry and in a sample broiler production agreement discussed in the case study. |
| SLO #6 | To discuss legal (antitrust) issues related to the allegedly illegal exercise of buyer market power by the five largest broiler processors in the U.S. To explain the role of the Sherman Act in regulating conduct of broiler processors in the analyzed industry setting. |

**Table 2. U.S. Broiler Chicken Industry: The Ten Largest Companies and Their Market Shares, 2020**

| | Company | Production | Market share |
|---|---|---|---|
| | | Million pounds per week | Percent |
| 1 | Tyson Foods | 200.70 | 20.38 |
| 2 | Pilgrim's Pride | 161.66 | 16.4 (36.8) |
| 3 | Sanderson Farms | 94.31 | 9.6 (46.4) |
| 4 | Mountaire Farms | 62.13 | 6.3 (52.7) |
| 5 | Perdue Foods | 61.26 | 6.2 (58.9) |
| 6 | Koch Foods | 60.74 | 6.2 (65.1) |
| 7 | Wayne Farms | 48.80 | 5.0 (70.0) |
| 8 | Peco Foods | 36.04 | 3.7 (73.7) |
| 9 | George's | 30.60 | 3.1 (76.8) |
| 10 | House of Raeford Farms | 28.90 | 2.9 (79.7) |
| | **Industry Total** | **984.74** | **100.0** |

The broiler chicken production is the ready-to-cook weight of broiler chickens produced; the data are from WATT PoultryUSA (2021) and O'Keefe (2021).
Market shares are calculated by the author. The cumulative market shares are in parentheses.

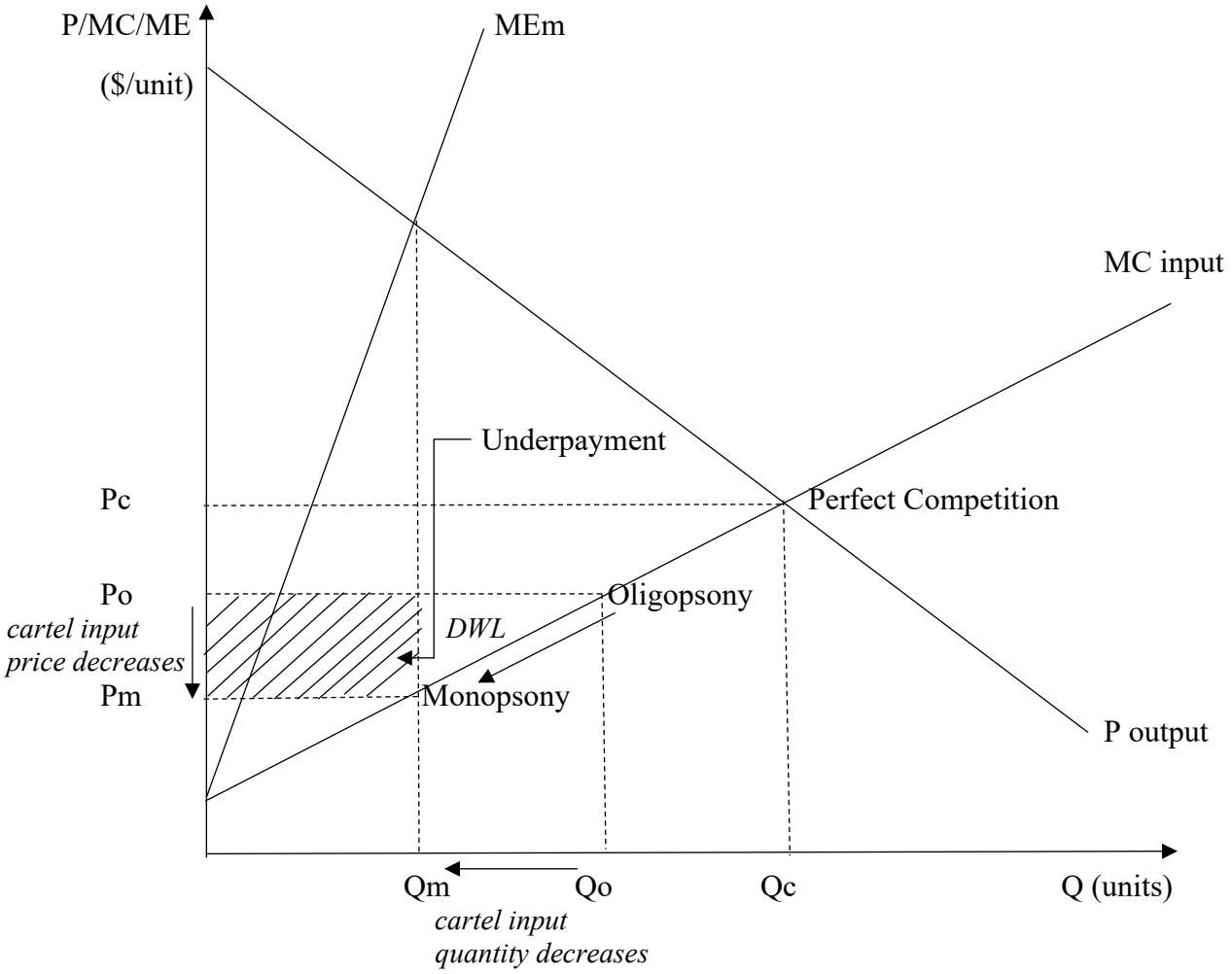


**Figure 1: The U.S. Broiler Chicken Industry as a Classic Oligopsony: The Effects of Buyer Market Power of Broiler Processors on Grow-Out Service Quantities and Prices**
Note: Grow-out service is the input for broiler processors.