Chapter 4

MONOPOLY & ANTITRUST
Introduction

• For most of the twentieth century, professional leagues in this country operated on the following two principles:
  – Home teams can control their own territory
  – Players are bound to their teams as long as their teams want them
• The first principle reflects the monopolistic market structure
• The second principle reflects the monopolistic market structure
• We will study the implications of these structures in this chapter
Learning Objectives

• Identify and illustrate the social costs of monopoly power
• Analyze how teams apply pricing strategies that result in increased profits and reduced consumer well-being
• Describe the circumstances under which society may be better off with a monopoly than perfect competition
• Recognize the importance of entry barriers for monopoly sports teams and leagues
• Explain Major League Baseball’s exemption from antitrust laws
• Explain how the NCAA became a cartel
• Apply game theory and the concept of the prisoners’ dilemma
4.1 Measuring the Cost of Monopoly

• We know that monopolists
  – Charge more \( (P_m > P_c) \)
  – Produce less \( (Q_m < Q_c) \)
• Higher prices
  – Hurt consumers
  – Help producers
• Is the economy worse off?
• We need a concept to measure the harm to society
A Useful Measure: Consumer Surplus

• Consider four football fans, each of whom are willing to pay a different price
  – Debbie would pay $40 for a ticket
  – Bill would pay $20
  – Jeff would pay $10
  – Kathleen pays $0
• If the market price is $20
  – Bill gets as much happiness as he paid for
    • He is the marginal consumer
  – Debbie gets $40 worth of happiness for only $20
    • She has a $20 (40-20) consumer surplus
Consumer Surplus

- In general, markets have many consumers
- Area of triangle shows *consumer surplus*:
- Extra happiness for consumers
- Mathematically:
  \[ CS = \int D(Q)dq - PQ \]
  \[ PS = PQ - \int S(Q)dQ \]
What’s Wrong with Monopoly?

• In a competitive market
  – Quantity is $Q_c$
  – Price is $0$
What’s Wrong with Monopoly?

• In a competitive market
  – Quantity is $E (Q_c)$
  – Price is $0$
  – Consumer surplus = $ACE$
What’s Wrong with Monopoly?

In a monopoly:

- Quantity is G (QM)
- Price is F

Consumer surplus = ABF

Consumer surplus shrinks
Where Did the Consumer Surplus Go?

• Some was captured by the producer
  – Producer has higher profits
    • Given by the area of the rectangle BFCG
    • This is a transfer from consumers to producers

• Some is just lost – triangle BGE
  – Less is produced and consumed
  – A loss that no one gains is a deadweight loss

• In general, fewer games are played than there would be in perfect competition
Other Problems of Monopoly

• Recall James Buchanan: Public Choice School
• Public figures (representatives and bureaucrats) maximize personal welfare, not public welfare
• Everyone wants to be a monopolist to increase profit
  – If the profit accrues to a factor (resource), we call it rent
• People lobby for trade restrictions to get rents
  – This is called rent seeking
  – This is a waste of resources
Do Monopolists Always Charge Monopoly Price?

- The profit maximizing output sets MR=MC
  - In our context that means MR=0
  - It is not hard to show that this sets price elasticity of demand = -1
- Studies have shown that teams produce too much
  - Operate where MR<0
  - Where demand is price inelastic
  - Do teams fail to maximize profit?
- Maybe profits do not just come from selling tickets
  - Some goods are complements to tickets
  - Teams might want more fans so they can sell more parking passes, concessions, and souvenirs
Soccer and Monopoly Power

• British Premier Soccer League is an *open* league
  – Teams can be relegated to a lower league
  – Teams can be promoted to a higher league
  – North American leagues are *closed*

• Open leagues have less monopoly power
  – They cannot limit the number of teams in a city
  – Any team can form in a low league and work its way up
  – In 2012-13, 6 Premier League teams were in London (Arsenal, Chelsea, Fulham, Queens Park Rangers, Tottenham Hotspur, and West Ham United)
  – Closed Leagues never have that many teams in a city
4.2 Strategic Pricing and Discrimination

• In the basic monopoly model, the monopolist chooses one price and charges it to all customers at all times
• In the real world, firms charge different prices for the same item
  – At different times
  – For different customers
• Such pricing enhances the monopolist’s profits
• We now expand the basic model to explain these observations
Variable Ticket Pricing

- Some games are more attractive than others
  - Example: weekend effect
  - These factors are known before the season even begins
- **Variable ticket pricing** sets ticket prices in line with expected demand for a future game
- Teams charge more for more attractive games
  - Demand and MR are higher for more popular games
  - Firm sets MC equal to different MRs (See Fig. 4.3)
- This has become popular in NHL
Dynamic Ticket Pricing

– Some factors that influence demand are not known before the season opens
  • The demand for Mets tickets rises R.A. Dickey pitches

• **Dynamic Ticket Pricing** allows the team to capture additional revenue based on individual game characteristics that are unknown at the start of the season
  • The teams adjust ticket prices during the season as events unfold

– This has become popular in MLB
Bundling

• Some fans want to see specific games very badly
  – They are willing to see less attractive games to get the tickets they want

• Teams bundle less attractive tickets with more attractive tickets
  – To see the Cubs play the White Sox one must also buy a ticket for the Cubs game against the Pirates
  – The fan gets to see the team he wants at a (relatively) low price
  – The team sells tickets that it would not otherwise sell
Price Discrimination

• This consists of charging one consumer more than another for the *same* product
  – Charging different prices of slightly different products is *not* price discrimination
    • Example: Variable ticket pricing
• Team captures some of the deadweight loss as profit
• This discrimination is not based on prejudice
  – Firms charge more to those *willing* and *able* to pay more
Perfect Price Discrimination

- We assume that the firm knows each consumer’s individual demand.
- Recall that four consumers were willing to pay four different prices:
  - Debbie $40
  - Bill $20
  - Jeff $10
  - Kathleen $0
- A perfectly discriminating monopolist (or first-degree monopolist) turns each consumer into a marginal consumer:
  - It charges these prices as long as they exceed MC.
First Degree Price Discrimination

- Team knows everything
  - Consumers’ willingness and ability to pay
  - Each consumer gets 1 unit
  - D is market demand

- Team produces the competitive output
  - \( P = MR \rightarrow P = MC \)
  - No deadweight loss
  - But the monopolist gets ALL the consumer surplus
Personal Seat Licenses (PSL)

• Carolina Panthers first used PSLs
  – Now many teams widely imitate this practice
  – It has become popular in the NFL
• PSLs are a form of two-part pricing
  – Fans pay for the right to buy season tickets
• The first part of the price is a fee that represents a part of the individual fan’s consumer surplus
• The second part is the market price per ticket
• In Figure 4.4, the team knows everything about the consumer surplus and it sets the market price of zero (=MC)
Figure 4.1
Figure 4.2
Figure 4.3
Additional Motivations for PSLs

• They bring tax advantages
• A stadium bond issues become tax exempt if the team pays at least 10% of construction costs
• Teams typically use PSLs to pay this %
Quantity Discounts

• Team does not know what all fans are willing to pay
• It does know that demand curves slope down
• It can sell more ticket by reducing overall cost for bulk purchases
  – Charge less per game for a season ticket than for individual tickets
  – Charge less for group tickets than for individual tickets
Segmented Markets

• This occurs if a team
  – Does not know what each fan is willing to pay
  – Knows that some groups of fans are willing to pay more than other groups
• The team **segments** fans
• Rich alumni are willing and able to pay a lot
  – Demand curve $D_A$
  – Assume a constant $MC$
• Alumni buy $Q_A$ and pay $P_A$
Segmented Markets (cont.)

- Students are willing and able to pay less
- Put students on the left
  - Their demand is lower
  - Assume MC is the same
- $Q_S < Q_A$ and $P_S < P_A$
  - Segmenting allows teams to sell more tickets
  - No students would buy tickets at $P_A$
The Other Key to Leagues: Monopsony

- Stands monopoly on its head
- One *buyer*
- Buyer pays more to buy more
  - *Upward* sloping *supply* curve
- If it cannot price discriminate
  - Pays more for all to buy 1 more
  - *Marginal Expenditure* Curve lies *above* Supply
- Monopsonist pays less & buys less
  - Again see deadweight loss
Monopsony and Sports

• Most commonly found in labor market
  – The reserve clause gave teams a lifetime claim to players
  – A player plays for the Cleveland Browns – or not at all
• Used to be present in European TV deals
  – Government TV stations were the only broadcasters
    • Could dictate terms to soccer leagues
  – Growth of private broadcasters undermined this power
4.3 What’s Right with Monopoly?

- There is only one professional football team in Detroit
- Are the Detroit Lions a monopoly?
  - Monopoly means there are *no* substitutes
  - There are distant substitutes for professional football
  - There exist other
    - Football teams on TV or at local colleges
    - Sports in Detroit
    - Forms of entertainment
Natural Monopoly

• If demand is low relative to minimum efficient scale (minimum average total cost), then a monopoly can provide output most efficiently
• In this case, bigger is better
  – Larger firms have lower unit costs
  – Can pass lower unit costs on to consumers
  – Can undercuts competition
• Natural monopolies have costs as in Fig. 4.6
  – High start-up (fixed) costs
  – Low marginal costs
Figure 4.5
Figure 4.6

(a) Cost curves

(b) Cost and demand
Natural Monopoly & Professional Sports

- Teams have high fixed costs (of tickets)
  - Payroll is largest cost
- Teams have low marginal costs
  - Often it is almost zero
- AC steadily falls to MC
- Large efficient size
  - A natural monopoly!
  - This means that one team is better than two!
Other Advantages of Monopoly

• Teams claim that monopoly power protects cities as a league can
  – Block teams from moving
  – Provide stability for fans

• If teams are natural monopolies, they should be regulated!
4.4 Barriers to Entry and Monopoly

- TV has become a key barrier to entry
  - TV can save a weak league
    - ABC/NBC saved the AFL in 1960s
  - It can also kill a league
    - WFL, USFL & ABL foundered w/o network commitment
    - XFL was killed by bad ratings
- Leagues also block entry by strategic location
  - Most cities are not big enough for two teams
- Leagues can deny competitors the use of facilities
  - The NFL did this to the AFL in the 1960s –
    - Put franchises in Dallas & Minnesota to block AFL entries
    - Kept the AFL out of these cities (and lost a suit—p. 124)
4.5 Antitrust Laws: the Sherman Act

• The Sherman Act is the basis of antitrust laws and policies.
• It outlaws collusion and promotes competition
  – It outlaws
    • (1) “Every contract, combination in the form of a trust or otherwise, or conspiracy, in restraint of trade or commerce…”
      – Independent firms had one board of trustees, hence the name
  – It states that
    • (2) “Every person who shall monopolize or attempt to monopolize any part of the trade or conspire with any other person or persons to monopolize any part of the trade or commerce…shall be deemed guilty of a felony…”
Explaining the Clauses

• Clause #1 prohibits collective actions
  – Firms should compete – not collude
    • This includes monopsony in the player market
  – Firms cannot form *cartels* (“trusts”) to act like monopolies

• Clause #2 attacks individual actions
  – Monopolization
  – Anticompetitive behavior in general
    • It does not matter how monopoly is formed

• Should we regulate sports leagues?
Application to Leagues

- All leagues appear to violate antitrust legislation
- By their very nature, leagues coordinate the actions of their member teams
- The coordination can be relatively innocent
  - Establishing and enforcing a common set of playing rules
  - Arranging a commonly respected schedule
- The coordination can also result in collusion, in which teams collude and act like one big monopoly
Baseball’s Antitrust Exemption

• MLB is the only US industry with a blanket exemption
  – MLB is not regulated like natural monopolies
  – Its power has no time limit as with patents

• The reserve clause was a vague clause in the labor contract of baseball players

• It bound a player to the first team that hired him as long as the team wished to keep him
The Exemption Stems from a Lawsuit

• The Federal League sought to be a third major league in 1914-1915
  – Sought to sign MLB players
  – MLB owners tried to prevent players from jumping leagues

• Federal League owners sued MLB
  – Brought anti-trust suit for restraint of trade
  – Claimed MLB was denying them access to the player market

• Suit brought in the Northern Illinois District Court
  – The Federal League chose this court because Judge Kenesaw Mountain Landis had a reputation as a “trustbuster”
  – It did not know he was a big baseball fan
The Landis Ruling

• Landis sat on the case for a year
  – The Federal League before he issued his ruling
    • As he hoped
  – He then asked the remaining parties to settle
    • Some owners got control of existing MLB franchises
    • Other owners were financially compensated
  – Landis later became MLB’s first commissioner
  – Ned Hanlon, owner of Baltimore Terrapins, does not settle
The Supreme Court Ruling

• Hanlon’s suit reached the Supreme Court in 1922
• The court delivered a bizarre ruling
  – Called baseball “a public exhibition, not commerce”
  – Some attribute the ruling to the 1919 “Black Sox” scandal
    • Several White Sox players conspired with gamblers to “throw” the 1919 World Series
    • Maybe the court feared an adverse ruling would kill baseball
  – Others note that Chief Justice Taft played baseball at Yale
    • He was cousin of William Wrigley – the owner of the Chicago Cubs
• Later decisions denied other leagues an exemption
The Toolson Lawsuit

• George Toolson (1950s) sued the Yankees for anti-trust violation when they sent him to the minor leagues
• Congress was holding hearings at the time of the suit
  – Suspends hearing to await outcome of the suit
• Supreme Court notes Congressional inaction
  – Concludes that Congress wants nothing done
  – Rules for the Yankees because Congress did not act
The Curt Flood Lawsuit

• Flood was a star outfielder for the St. Louis Cardinals in the 1960s
  – In 1968, he asked the Cardinals’ owner for a raise
  – He is traded to Philadelphia instead
    • One of the worst teams in the NL
    • A city with a troubled reputation for black players
• Flood sues MLB, claiming “I am not a piece of property”
• The Supreme Court rules against him in 1972
  – It agreed the exemption was unreasonable
  – But claimed too much was based on it to overturn it
• Curt Flood Act (1997) limits MLB’s monopsony power
  – But the Act applies only to union-league relations
  – Labor law trumps anti-trust law
  – The players’ union must disband for the players to sue
Other Sports

• Courts have denied exemptions to other sports
• They have had challenges from rival leagues
  – NFL absorbed teams in the 1930s and 1950s
  – The NFL merged with the rival AFL in the 1960s
  – The NHL absorbed 4 teams from the WHA in the 1970s
  – The NBA absorbed 4 teams from the ABA in the 1970s
• Only MLB has not had serious competitiona
The NFL and Television

• The NFL’s TV contract is the reason for its prosperity
  – BUT – they violate antitrust law
  – The teams join together to negotiate one contract

• The NFL needed a special act of Congress
  – A limited exemption that applies only to broadcast rights
  – A concession – no NFL broadcasts on Friday or Saturday until the
    high school and college seasons are over
  – Served as a precedent for other leagues
  – MLB did not need it

• The NFL tried – unsuccessfully – to expand its exemption in the
  *American Needle* court case
4.6 The NCAA: An Incidental Cartel

- A cartel is like a trust: it coordinates actions of independent firms for their common good
- The NCAA is neither a monopoly nor a monopsony in the classic sense
- It is a collection of schools that have come together to regulate intercollegiate sports
- The NCAA did not form to act as a monopoly
- The NCAA does not maximize profit
  - Athletic departments have no use for profit
  - They turn any extra revenue into expenses
  - Such as on new facilities
History of NCAA

• The NCAA was a response to Theodore Roosevelt’s call for regulation
  – Followed 18 football-related deaths in 1905
  – Football had no unified set of rules
    • The lowest common denominator prevailed
    • Violence was common
  – Roosevelt warned “jock schools” (Princeton, Harvard, Yale) to “Clean up your act or I’ll ban football”

• First NCAA goal: Rules to curb football violence
  – NCAA banned “mass plays” like the “Flying Wedge”
  – It also codified rules for other sports
A Rocky Start for the Cartel

- After the NCAA set on-the-field rules, it turned to off-the-field behavior
- It tried to ban athletic scholarships in 1946 with the “Sanity Code”
  - Seven colleges (“Seven Sinners”) refused to obey the code: Boston College, Maryland, Villanova, U of Virginia, VMI, Virginia Tech, and the Citadel
  - The NCAA failed to get 2/3 majority needed to expel them
- The NCAA faced irrelevance
  - It could not enforce its own rules
An Unlikely Rescue for the NCAA

• A “point-shaving” scandal broke out in 1952
  – Basketball players were accused of rigging scores for professional gamblers
  – A NY grand jury investigated local schools & schools playing at Madison Square Garden
  – CCNY was ruined as a national power

• Investigation found that UK players shaved points
  – University of Kentucky coach – Adolph Rupp – was probably also involved
  – Investigators found “illegal” payments to players by Rupp
The “Death Penalty”

• The NCAA failed to respond to the scandal
• The Southeast Conference suspended UK for a year
  – Kentucky threatened to play teams outside the conference
• NCAA jumped in and got a new lease on life
  – It imposed the “death penalty”
  – It did not ban the team – the team had no one to play with
• Death penalty has rarely been imposed in Division I
  – Southern Methodist University football in 1986
  – University of Louisiana-Lafayette basketball in 1973-1974
4.7 Prisoners’ Dilemma

• The NCAA negotiated a single TV contract in 1950
• The deal had benevolent beginnings
  – Major powers (e.g., Michigan) limited their appearances
  – Restricted them to 3 TV games every 2 years
• NCAA’s *own members* brought antitrust suit
  – Challenged the limitation on appearances
The Results of the Lawsuit

– Weekends are now full of college football
– Division split into IA and IAA (now FBS and FCS) to increase TV revenue for the biggest schools
– Are there now too many games?
  • TV revenue may be lower than it would have been without the 1984 Supreme Court decision
The Prisoners’ Dilemma

- If all schools had limited their TV broadcasts, everyone would be better off
  - But schools constantly break their own agreements
  - This problem (dilemma) is common to cartels
- Schools follow individually optimal actions
- The outcome is socially suboptimal
- “Rational actions lead to irrational outcomes”
Modeling Schools’ Behavior

• We use game theory. A game consists of
  – Players; Strategies; Outcomes
• Schools face a particular type of game
  – Prisoners’ Dilemma
• Colleges have a dominant strategy
  – This strategy is optimal regardless of other schools’ action
  – But this strategy has a bad outcome when everyone does it
  – When the dominant strategy results in a socially desirable outcome, there is no dilemma
### Table 4.1

**College Football Broadcasts as a Prisoner’s Dilemma**

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<th>Miami Televises Many Games</th>
<th>Miami Limits Appearances</th>
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<tbody>
<tr>
<td><strong>FSU Televises Many Games</strong></td>
<td>Miami gets $5 million</td>
<td>Miami gets $3 million</td>
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<tr>
<td></td>
<td>FSU gets $5 million</td>
<td>FSU gets $20 million</td>
</tr>
<tr>
<td><strong>FSU Limits Appearances</strong></td>
<td>Miami gets $20 million</td>
<td>Miami gets $10 million</td>
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<tr>
<td></td>
<td>FSU gets $3 million</td>
<td>FSU gets $10 million</td>
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Nash Equilibrium

• An outcome (square) is a Nash equilibrium if neither player can improve his result/pay-off by a unilateral move

• The 5,5 outcome a Nash equilibrium
  – Neither university wants to reduce its games once it has unlimited appearances

• The 10,10 outcome a Nash equilibrium
  – Each university wants to expand its games to gain greater profit
Final Advice and Other Applications

• Schools would be better off if they followed the rules
  – Limit TV appearances
  – Do not pay athletes “under the table”

• Schools fall prey to prisoner’s dilemma

• Prisoners’ dilemma applies more broadly to cartels and oligopolies when coordination fails
  – OPEC members undermine their own agreements
  – Coke and Pepsi spend too much on advertising