

## Lecture #1 Wednesday, January 14

Go over syllabus. Stress important points:

- Late HW is bad. No HW is terrible. (Easiest way to fail)
- All information is available on the web site:  
<http://www.holycross.edu/departments/economics/vmatheso/>
- As economics is the study of the allocation of scarce resources and your time is a scarce resource, in the interest of optimal economic efficiency, attendance is optional, but you will not do well without attendance.

Fill out cards: Name, home town, year, past classes, sport (play), sport (watch), team/player.

Grades based on 90,80,70. With that we will get started.

Economics is defined as the study of the allocation of scarce resources among competing users.

Why study sports economics?

- Sports is big business. Over \$10 billion in public money has been spent in the last 15 years on new professional sports stadiums.
- Sports has cultural importance far beyond its economic significance. While the entire professional sports industry is only as large as the cardboard box industry, nobody talks boxes around the watercooler on Monday.
- Good way to apply economic concepts to interesting examples. Use sports to trick you into learning economics.
- Sports as a laboratory for social experiments. Discrimination/CEOs.

What would you need to answer the question of whether black were discriminated against in labor markets. Both pay and performance. Both available for professional athletes.

We will be covering 4 broad areas.

- Labor: Discrimination, pay and performance, contracts, etc.
- Public Finance/Urban Economics: Stadium, franchise, quality of life issues.
- Industrial Organization: anti-trust, franchise organization, etc.
- Pure sports: demand for tickets, how to organize leagues, competitive balance, etc.

## Lecture #2 Friday, January 16

Organize groups for paper next Friday.

Chapters 1 and 2 are review of basic economics principles.

Comparative Advantage:

- Babe Ruth: One of the best pitchers in the AL in from 1915-1918 went 78-40, won two games in the 1918 World Series and set a W.S. scoreless innings streak that stood until 1961. Only won 16 more games in the rest of his career yet became a fan favorite. Why? He was Babe Ruth. Better than any pitcher in the league, but SOOOO much better than anyone else at hitting. Hit 54 home runs in 1920, more than #2, #3, and #4 combined. More than many teams that season (Red Sox hit 22 that year.)
- What do Hale Irwin (3 time U.S. Open Winner and the winningest player in the history of the Senior PGA golf tour, also a 2-time All Conference D-Back at CU), Dave Winfield (baseball Hall of Fame 2001, 12-time All-Star, 1974-1995), Charlie Ward (10-year point guard for the NY Knicks and recently San Antonio and Houston) Heisman Trophy, 1993) have in common, Jeremy Bloom (?).
- Ward (who beat out #4 vote getter Marshall Faulk) brings out another interesting point in sports economics, disentangling skill in a team sport. Rashaan Salaam, one of 4 (Marcus Allen, Mike Rozier, and Barry Sanders) players at the time to rush for over 2,000 yards in a season won the Heisman the next year beating out #3 vote getter Steve McNair from Alcorn St. Salaam gained fewer yards in his 3-year NFL career than he did in 12 games for CU in 1994.
- Who is the best golfer in the world? Now who is the best football player in the world? Ok, best QB in history. Golfer is easier than QB. Also discount rate.

What sport has been the most researched? Baseball. Long time, individual performance.

Supply and demand:

Talking about baseball cards. Authors are wrong in asserting that baseball cards have an upward sloping curve. Fixed in supply once issued which is what they are talking about in re Mantle v. Aaron.

Demand for cards: skill of player (which includes many factors, Maris) (Bonds cards have increased in price over time), popularity of player (Puckett prices way down), regional differences (Puckett in Mpls vs. NYC, what is the limit to this), racism (we'll read about this later.)

What sort of things actually affect the curve itself?

- Changes in taste. (Steroids, Pacers/Detroit, Bonds v. Ripkin, winning/competitive balance, Yankee/Red Sox, team and opponent quality)
- Income and Wealth. Normal/Luxury vs. Inferior goods. (Most sports, with exception of

- post-war soccer in Britain, are normal/luxury goods.)
- Prices of other goods. Substitutes. TV blackouts, D.C./Baltimore baseball, competing leagues (NCAA football vs. NFL), soccer in summer.
- Prices of other goods. Complements. Concessions, parking, bobblehead-day.
- Changes in expected price. Hope you went this season to the Red Sox.
- Number of potential buyers. (D.C. baseball, Yankees dynasties)
- Government taxation.

Individuals' supply curves can be added together to get a market supply curve.

What sort of things actually affect the curve itself?

- Prices of inputs. (NHL players.)
- Technology. (Television, radio.)
- Prices of other goods. (What if the supplier could make another good instead?)
- Substitution over time. (Price changes in future affect things.) The longer the period of time the more effect.
- Number of potential sellers. (Think of an influx of labor due to baby boom.)
- Adjustment period for price changes. (What if it is difficult to change from pizza to burgers?)
- Synergies. Complements to production.
- Government subsidies.

## Lecture #3 Wednesday, January 21

Check to make sure everybody has assignment.

What sort of things actually affect the curve itself?

- Changes in taste. (Steroids, Pacers/Detroit, Bonds v. Ripkin, winning/competitive balance, Yankee/Red Sox, team and opponent quality)
- Income and Wealth. Normal/Luxury vs. Inferior goods. (Most sports, with exception of post-war soccer in Britain, are normal/luxury goods.)
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## Lecture #4 Friday, January 23

Slight statistics review.

Look at earmarks paper.

Regression as a “best line” through data.

Multiple regression simply drawing “line” through a complex cloud of data.

T-stat (2 st. devs)

R-squared (0-1)

Teams as profit maximizers.

First, are sports teams profit maximizers?

Some would say no. “The easiest way to become a millionaire. Start out as a multi-millionaire and buy a sports franchise.”

- Utility maximizers: sports clubs such as Real Madrid (Green Bay Packers)
- Could they be “fame or ego maximizers.” White knights for a city?

Richest Americans:

Bill Gates, Warren Buffet, Paul Allen, Michael Dell, Larry Ellison, Waltons (Wal-Mart)

Abigail Johnson: Fidelity

Barbara Anthony and Anne Chambers: Cox

Pierre Omidyar: EBay

Sumner Redstone: Viacom

Who are Jerry Jones, George Steinbrenner, Robert and Jonathan Kraft, Al Davis, Jeremy Jacobs (Bruins), Wyc Grousbeck (Celtics), John Henry/Tom Werner (Red Sox), Mark Cuban, Roman Abramovich (Chelsea)

Would Robert Kraft be a household name in MA if he had remained a cardboard salesman? (CEO of Rand-Whitney.)

From book: Silvio Berlusconi: Media owner who eventually purchased AC Milan. Also hired Ruud Gullit, black player from Dutch Guyana (Suriname) who is now the coach of Beckham at the LA Galaxy.

“Money?” I ask Abramovich. “Is this deal about making a profit?”

He laughs. “No, it’s not about making money. I have many much less risky ways of making

money than this. I don't want to throw my money away, but it's really about having fun and that means success and trophies."

Time to ask the tough question. "Look Mr Abramovich, you're 36, outrageously rich and Russian. To many here that sounds very dodgy."

He shrugs. "Yes, I know what people say. But there are lots of rich, young people in Russia. We don't live that long, so we earn it and spend it."

"I'm realising my dream of owning a top football club. Some will doubt my motives, others will think I'm crazy."

Just today it was reported Manchester City owner Sulaiman Al-Fahim, who tried to buy Kaka from AC Milan for a record \$150 million is considering buying Chelsea.

Talk about loss leaders. Best Buy and free CDs, Fox TV and the NFL, Holy Cross (subsidizes athletics to get students and interest alumni.)

Colleges?

Now quite a few teams are owned by companies.

## Lecture #5 Monday, January 26

Look at MLB numbers.

Sources of Revenue: Look at MLB numbers. Cubs are particularly instructive.

Why would a team have the incentive to under-report income?

- Dodge taxes (but this is illegal)
- Dodge revenue sharing. Would rather have the profit be recorded by WGN than Cubs.
- Justify high ticket prices to fans.
- Justify taxpayer subsidies for new stadiums.
- Justify low salaries for players. (NHL came out with similar report just before lockout.)

Simplest model

Profit = TR - TC                      Total revenue - total costs

Total costs = VC + FC              Variable costs (which vary with output) + fixed costs

Define all terms.

Most costs in sports are fixed: player salaries, stadiums. Some variable like staffing.

MC are very close to zero.

In this simple model we look at only one type of revenue (that of ticket sales) and firms charge only charge one price.

In reality, teams sell many products (tickets, media, concessions)

In reality, teams charge a ton of different prices. Price discrimination.

How do teams discriminate?

- Opponent. (Bobblehead day is never during a Yankees game.)
- Seat location. (Need to make sure people can't buy cheap ticket and then take good seat.)
- Day of week. (Higher Friday and Saturday.)
- Age of ticket buyer. (Kids and seniors tickets.)
- Season tickets. (Want money ahead of time. Better predict attendances.)
- Time of season. (Early games, playoffs.)
- Group sales.
- When tickets are purchased. (Day of game. Airline flights.)

Did in-class jigsaw reading.

## Lecture #6 Wednesday, January 28

Simplest model

Profit = TR - TC                      Total revenue - total costs

Total costs = VC + FC              Variable costs (which vary with output) + fixed costs

Define all terms.

Most costs in sports are fixed: player salaries, stadiums. Some variable like staffing.

MC are very close to zero.

In this simple model we look at only one type of revenue (that of ticket sales) and firms charge only charge one price.

### **Solving for equilibrium under different situations.**

Assumption is that the goal of all firms is to maximize profits.

Probably not a bad assumption. Lots of reasons to believe sports teams are profit maximizers. Even when they are win-maximizers or ego-maximizers, it is likely that this shows up on the expense side rather than the revenue side.

Choose output such that  $\pi$  is maximized.

$$\pi = PQ - C(Q) \text{ or } = TR - TC$$

MR =  $\delta TR / \delta Q$  = how much revenue changes as quantity changes.

MC =  $\delta C(Q) / \delta Q$  = how much revenue change as quantity changes.

Derivatives tell us how much one variable changes as another changes.

If a derivative = 0 then we have a maximum (or minimum)

$$\delta \pi / \delta Q = MR - MC = 0 \text{ at maximum}$$

Profit is maximized when MR = MC for all firms.

The real trick for everything is finding MR. Need to know how one firm's alteration of quantity will change P.

## Lecture #7 Friday, January 30

$Q = 100 - P$        $\iff$        $P = 100 - Q$       Constant MC = 10  
Demand function      Indirect demand function

|                               |  |
|-------------------------------|--|
| Competition                   | Monopoly                                 |
| MC = MR (= P)                 | $\max \pi = PQ - C(Q)$                   |
| $10 = 100 - Q$                | $\max \pi = (100 - Q)Q - 10Q$            |
| $Q = 90$                      | $\delta\pi/\delta Q = 100 - 2Q - 10 = 0$ |
| $P = 10$                      | $Q = 45$                                 |
| $\pi = 0$                     | $P = 55$                                 |
| $CS = 90 \cdot 90 / 2 = 4050$ | $CS = 45 \cdot 45 / 2 = 1012.5$          |
| Total Welfare = 4050          | $\pi = 45 \cdot 55 - 45 \cdot 10 = 2025$ |
| Total Welfare = 3037.50       |  |

How do you compare the welfare effects?

Societal welfare = sum of consumer surplus and producer surplus (or profit.)

Consumer and producer surplus.

CS: Area above price and below demand. The amount people would be willing to pay but don't have to.

PS: Area below price and above supply/cost. The amount firms would be willing to accept but don't have to.

Notice that monopoly leads to two things.

- First, causes a transfer of surplus from consumers to producers. (This is not major problem from an economist's point of view.)
- Next, reduces total welfare by restricting output. Dead-weight loss.

Can eliminate the DWL three ways:

- Move to perfect competition. (Unlikely to work for teams. 100 teams in Boston?)
- Move to perfect price discrimination. (Higher profit, lower CS, but higher overall welfare.)
- Regulate the industry and mandate  $P = MC$ .

How to expand your business.

1. Mergers and acquisitions: take over other firms to become larger

- Macy's and Filenes/Marshall Fields/Daytons/Hudson
- AL/NL, 1901; AFL/NFL 1960s; ABA/NBA, 1970s; NHL/WHL, late 1970s

2. Franchises and branches.

Branches:

- Identify location.
- Hire local management or relocate current management.
- Raise capital. Financial markets (stocks or bonds), financial intermediaries (banks or venture capitalists), retained earnings.

Parent firm becomes residual claimant on profits from new branch.

Examples: Barnes and Noble, WalMart, Target, Macys, etc.

Within sports, branching is known as single entity and is used in MLS and several other new league startups such as Lacrosse. There are some problems with using branching in sports leagues.

Franchise organization.

- Identify owner.
- Owner finds location, management, etc.
- Owner raises own capital.

Parent firm earns money from an application fee and royalty payments.

What is used in sports most often? Usually franchises.

Franchising: parent company sets general rules but separate entrepreneurs control individual outlets. (McDonalds, Subway, 7-11, GNC, Apu's Kwiky Mart, etc.)

McDonald's questions.

What is the best restaurant in the world? Based on sales or profits or number of franchises, it is McDonald's (actually, 3<sup>rd</sup> highest number of franchises behind Subway, also behind Yum! in total number of franchises.)

HOMEWORK FOR MONDAY: Who were the Cleveland Spiders?

## Lecture #8 Monday, February 2

### Pop Quiz #1

Who were the Cleveland Spiders, and what is special about them? What does the case of the Cleveland Spiders suggest about professional team ownership?

The Cleveland Spiders were a member of the National League from 1889 to 1899. Despite having a good team in the mid-90s (including a pitcher named Cy Young), in 1899, the Spiders set the Major League mark for futility by going 20 and 134, finishing 84 games out of first place. The Spiders drew only 6,088 total fans in its 41 home games during that season and folded after the season.

The poor performance of the Spiders is due to team owner Frank Robison. The Cleveland owner bought the St. Louis Browns (renamed the Perfectos in 1899 and the Cardinals in 1900) in 1899 and decided to pool the players, including Cy Young, from the two teams into a single “super-team.” Other teams followed Robison’s lead with the Brooklyn Dodgers buying the Baltimore Orioles, and owners of four different teams holding stock in the New York Giants. Following the 1899 season, syndicate ownership, the owning of stock in several teams at once, was outlawed, preventing future disasters like the 1899 Cleveland Spiders.

While there is no economic reason for the courts to ban syndicate ownership (do the Cleveland Spiders and the St. Louis really compete for fans?) is probably in the best interest of the league owners themselves to general discourage this sort of activity.

Review of how to expand your business.

1. Mergers and acquisitions: take over other firms to become larger

- Macy’s and Filenes/Marshall Fields/Daytons/Hudson
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Examples: Barnes and Noble, WalMart, Target, Macys, etc.

Branching used sometimes in sports: known as single entity.

- Done in part to reduce competition for players. Also for risk sharing and other cost controls.
- Examples include: XFL, Professional LaCrosse, and MLS

Problem is whether people believe that you can have real competition on the field when there is not competition at the management level. In MLS, best stars coming to U.S. seem to end up in the biggest markets. Notice Freddy Adu is not in Columbus or KC, and Beckham is, where else? LA.

I will note that as an MLS referee, on the field, the competition is very real. But the perception that the game is fixed or entertainment and not sports is a huge deal. Think about baseball and gambling. 1919 Black Sox, Pete Rose. Leagues obviously know that the perception that a game is fixed is death to the league and punish this very strongly.

Franchise organization.

- Identify owner.
- Owner finds location, management, etc.
- Owner raises own capital.

Parent firm earns money from an application fee and royalty payments.

Parent company sets general rules but separate entrepreneurs control individual outlets. (McDonalds, Subway, 7-11, GNC, Apu's Kwiky Mart, etc.)

What are the advantages of franchise ownership?

- Uses local management with specialized information. (Local restaurateur may better know local market than corporate headquarters.)
- Raises capital for parent firm. (Rather than having to use retained earnings or financial markets. May allow for more rapid expansion.)
- In sports, guarantees competition between franchises in a way that branching may not. Cleveland Spiders, MLS, Montreal Expos examples.

Disadvantages of franchise ownership.

- Lose some control over franchisees. Jack-in-the-Box example.
- Need to devise a way to earn profits from franchisees.

**Item #1:** Why do so many people eat at McDonald's when better food with similar prices and speed is available at locally owned restaurants?

McDonald's allows for a reduction of risk since information about the food is known by consumers.

In addition, especially in places where repeat business is rare (airports, interstate highways) McDonald's has particularly high quality since a chain does rely on repeat business while a locally owned restaurant has limited incentive to provide high quality.

Food safety tends to be higher at national fast food chains than at small restaurants for this reason as well.

Very common in sports: all of the Big Four (MLB, NHL, NBA, NFL) operate in this manner.

- Can lead to excessive competition for players as in the case of NHL.
- Good because competition exists at both management and playing level.

Many companies are a combination of franchising and branching. 30% of McDonald's restaurants are company owned while 70% are franchises. In sports, MLB owned the Expos from 2002(?) through 2004 season. Problems in sports with conflict of interest. Do the owners of the Mets really want the Expos to succeed?

Sub-set of franchising is syndicate ownership where one owner controls more than one franchise. Very common in most franchises. For example, over 50% of new Subway restaurants are opened up by existing Subway owners. Makes sense here because existing owners have skills and experience may allow them to more efficiently operate additional franchises. In sports, again there is a potential conflict of interest problem as in the Cleveland Spiders case. Most leagues, therefore, prohibit syndicate ownership. (MLS, again, is an exception.)

**Example:** Why does McDonald's offer to give you a meal free if you do not receive a receipt?

This does not prompt additional people to eat at the restaurant and raises costs by potentially having to give away free stuff.

Done to prevent theft by employees. Cashiers could give food to customers and pocket the money. By forcing items to go through cash register it improves accounting. Accounting at the food and materials level is difficult due to returns and spoilage.

Similar problems with franchisees and parents.

## Lecture #9 Wednesday, February 4

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While there is no economic reason for the courts to ban syndicate ownership (do the Cleveland Spiders and the St. Louis really compete for fans?) is probably in the best interest of the league owners themselves to general discourage this sort of activity.

How does a parent firm earn money from franchisees?

Start with basic profit maximizing equation.

$$\text{Profit} = \text{TR} - \text{TC} = \text{TR} - \text{FC} - \text{VC}$$

Fixed costs = FC = costs that do not vary in short run (one season?) as quantity changes. For sports teams fixed costs are player salaries, infrastructure.

Variable costs = VC = costs that vary with Q or attendance. For sports teams variable costs include staffing (ushers, concessionaires, ticket sellers, etc.), sanitation, cost of concession inputs (hot dogs, cheese product, etc.)

For a price setting firm, Profit = PQ - FC - VC(Q)

To solve, you need a demand function and a cost function.

Suppose:       $Q = 100 - P$               Known as a demand function.  
                  $P = 100 - Q$               Known as indirect demand function.

Suppose:       $MC = 10$                       Same as  $TC = 10Q$

In sports usually we assume a low or zero marginal cost until capacity is reached.

$$\text{max Profit} = \text{TR} - \text{TC} = PQ - 10Q = Q(100 - Q) - 10Q = 100Q - Q^2 - 10Q$$

$$dT/dQ = 100 - 2Q - 10 = 0 \implies Q = 45 \implies P = 100 - 45 = 55$$

$$T = 45 \cdot 55 - 45 \cdot 10 = 2025$$

\*\*\*\*\*

Now suppose the headquarters requires a \$1000 fixed payment? How does the individual franchise maximize profits?

$$Q = 100 - P \implies P = 100 - Q$$

$$\text{Cost} = 10 \text{ per unit or } TC = 10Q$$

$$\text{max Profit} = TR - TC - 1000 = PQ - 10Q - 1000 = Q(100 - Q) - 10Q - 1000 = 100Q - Q^2 - 10Q - 1000$$

$$dT/dQ = 100 - 2Q - 10 = 0 \implies Q = 45 \implies P = 100 - 45 = 55$$

$$T = 45 \cdot 55 - 45 \cdot 10 = 2025 \quad T(\text{franchisee}) = 2025 - 1000 = 1,025 \quad T(\text{headquarters}) = 1000$$

Good: Joint profits are not affected, simple. Very common in all franchises including sports. Houston Texans paid a \$600 million franchise fee to join league.

Bad: Can't price discriminate between popular and less popular locations.

\*\*\*\*\*

Now suppose the headquarters takes 60% of total profits. How does the individual franchise maximize profits?

$$Q = 100 - P \implies P = 100 - Q$$

$$\text{Cost} = 10 \text{ per unit or } TC = 10Q$$

$$\text{max Profit} = 60\%(TR - TC) = .6PQ - .6 \cdot 10Q = .6Q(100 - Q) - 6Q = 60Q - .6Q^2 - 12Q$$

$$dT/dQ = 60 - 1.2Q - 6 = 0 \implies Q = 45 \implies P = 100 - 45 = 55$$

$$T = 45 \cdot 55 - 45 \cdot 10 = 2025 \quad T(\text{franchisee}) = 810 \quad T(\text{headquarters}) = 1215$$

Good: Joint profits are not affected. Allows for price discrimination.

Bad: Profits difficult to observe and easy to manipulate.

\*\*\*\*\*

Most franchise fees are a percentage of revenues not a percentage of profits. Now suppose the headquarters takes 50% of total revenue. How does the individual franchise maximize profits?

$$Q = 100 - P \implies P = 100 - Q$$

$$\text{Cost} = 10 \text{ per unit or } TC = 10Q$$

$$\text{max Profit} = 50\%TR - TC = .5PQ - 10Q = .5Q(100 - Q) - 10Q = 50Q - .5Q^2 - 10Q$$

$$dT/dQ = 50 - Q - 10 = 0 \implies Q = 40 \implies P = 100 - 40 = 60$$

$$T = 40*60 - 40*10 = 2000 \quad T(\text{franchisee}) = 1200 - 400 = 800 \quad T(\text{headquarters}) = 1200$$

The real key here is that total combined profit for the franchiser and franchisee has fallen by \$25 because of this arrangement which cause the franchisee to act in an inefficient manner.

Good: Allows for price discrimination. Easier to observe.

Bad: Does not maximize joint profit.

Why is this done?

Why is this done? Total revenues are easier to observe than profits. Costs can always be hidden in different ways. (Payments for relatives, for example.)

### **How does this all relate to sports economics?**

Teams are generally operated as franchises. Sports teams tend to share revenues. How they choose to do so can cause unusual incentive problems. In fact, they often only share some revenues like ticket sales (observable) and not concessions (much harder to observe).

NFL: 60-40 gate split, no split of concessions, full split of national media revenue and costs.

Attendance is easy to observe, hot dog sales are not, hot dog costs are really hard.

National media revenue is easy to share because contracts are negotiated at the league level not the local level.

NFL, therefore, has high revenue sharing, but strong incentive to develop forms of revenue that need not be shared. Old Mile High Stadium vs. Investco. Investco is smaller but has more luxury boxes and larger concession concourses.

MLB: 85-15 gate split, no split of concession, full split of national media.

Less revenue sharing because national media is a much smaller portion of total media revenues.

NBA/NHL: No gate sharing, national media sharing, but not as important again. These leagues must need another method of ensuring competitive balance.

## Lecture #10 Friday, February 6

NFL: 60-40 gate split, no split of concessions, full split of national media revenue and costs.

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Why have any type of revenue sharing in the first place?

- Even the Yankees need someone to play.
- Uncertainty and competitive balance in sport is crucial in maximizing joint profits.
- A smaller piece of a bigger pie is perhaps better than a large piece of a small pie.
- Insurance to cover bad times.
- Development of long-term rivalries.

Examples in early NBA and NFL.

The NFL formed in 1920 and between 1920 and 1935 over 50 teams played at least one season in the league, 43 of which folded or relocated by 1935. The teams with the most solid financial bases realized that the long-term survival of the league relied on the success of the other teams in the league as well.

For this reason, the NFL adopted strong revenue sharing. 40% of ticket sales and all broadcast media. (This excludes some forms of local media coverage.)

Similarly, the NBA formed as a merger of two existing leagues in 1949. By 1954 only 8 of original 23 teams remained and four of the remaining teams relocated by 1960. Not as strong, but still.

More competitive balance issues.

The results of a match-fixing investigation in Ghana were announced on Wednesday in the catchy named Ghanaian Zone Three Middle League.

On the final day of the season, FC Nania was tied on points with Great Mariners. With both teams facing poor opposition, goal difference looked to be the likely determinant of who would receive the single promotion place to the national Premier League. At halftime, both Mariners and Nania were leading 1-0. Mariners scored no less than 28 times in the second half to surely, if none too subtly, gain promotion ... only to discover that Nania had won its game 31-0.

Showing Holmesian skills of deduction and Quincyian attention to detail, the Ghanaian FA's investigation concluded that money had changed hands at halftime in both games. The league demoted and fined all four teams and suspended 46 players and officials for a year. All concerned have laughably protested their innocence and vowed to appeal.

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- Insurance to cover bad times.
- Development of long-term rivalries.

How to get competitive balance?

- Revenue sharing.
- Reverse order drafts (only in concert with a reserve clause: 6 years in MLB, 3 years in NBA).
- Restrictions on free agency: Compensation picks for lost free agents in baseball, franchise players (which could work either way)
- Salary caps / luxury taxes. Hard vs. soft caps
- Strength of schedule. (NFL)
- NCAA: academic, scholarships, recruiting rules. NCAA set maximums and individual conferences can set even stricter standards.
- Scheduling (home and away)

Competitive balance also important in individual sports:

- Drug testing.
- Handicapping in horseracing.
- Equipment limits in NASCAR and golf.
- Pairings in golf. (Put best two players on 18<sup>th</sup> green at the same time.)
- Seeding in tennis. (Make competitive balance worse in early rounds but better in later rounds which are more important.)

## Lecture #11 Monday, February 9

Competitive balance also important in individual sports:

- Drug testing.
- Handicapping in horseracing.
- Equipment limits in NASCAR and golf.
- Pairings in golf. (Put best two players on 18<sup>th</sup> green at the same time.)
- Seeding in tennis. (Make competitive balance worse in early rounds but better in later rounds which are more important.)

Discussed issues of competitive balance.

Measuring competitive balance.

Two important issues of within season and between season balance.

It's the same old story again in Europe this year. Last weekend Real Madrid clinched the league title in La Liga, its 31st league title overall and its 25th in the past 50 years. Bayern Munich clinched the Bundesliga league title, its 20th title since the formation of the league in 1964. Lyon and Inter Milan, last year's champions in France and Italy, remained on top of the tables in their respective leagues with two games to go. In England next week's games will determine whether powerhouse Chelsea or powerhouse Man. U, the top two teams in the standings last season, will be crowned champion. Even in the smaller leagues, the traditional powers are on top. In Scotland, the next couple of weeks will tell whether Rangers can overtake Celtic for the lead. No other team outside the Glasgow pair has won the Scottish league since 1985, and only once in the past 13 years has another team even come in second place.

While the annual races for the championship are usually close, at times coming down to the the last minutes of the last game of the season, interseason competitive balance is notoriously absent in European Leagues using promotion and relegation systems.

In England over last 12 years: Chelsea, Arsenal, Manchester United, and Liverpool have all finished in the top 4, 5 times. At least 3 of the four have finished in the top 4 12 out of 12 times. The worst finish for one of these teams is 7<sup>th</sup> (once), 6<sup>th</sup> (twice), 5<sup>th</sup> (four times), 4<sup>th</sup> (5 times).

Within season balance: measuring spread of wins across teams.

- Standard deviation of win percentage. (Compared to optimal.)
- Win percentage Gini coefficient.

Both can be used for comparisons with different sized leagues (as long as the idealized ratio is used.)

Standard deviation of win percentage

$$\text{St. Dev. Win \%} = \sqrt{\sum \frac{(x_i - \bar{x})^2}{N}} \text{ where } N = \text{number of teams.}$$

Ideal St. Dev of Win % =  $.5/G^{.5}$  where G = number of games.

Calculate St. Dev. of Win % Ratio

| League     | St. Dev. Win % | Idealized St. Dev. of Win % | Ideal Win % Ratio |
|------------|----------------|-----------------------------|-------------------|
| MLB        | .075           | .039                        | 2.10              |
| NFL        | .184           | .125                        | 1.56              |
| NBA        | .160           | .056                        | 2.55              |
| NHL        | .121           | .056                        | 1.85              |
| EPL        |                |                             | 1.61              |
| Bundesliga |                |                             | 1.45              |

Lorenz curve/Gini coefficient of wins

Between years

Standard deviation of win % (one team across years, not 1 year across teams)

HHI index

Concentration ratios

Rank correlation index

|      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|
| 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
| NYY  | NYY  | NYY  | NYY  | NYY  | NYY  | NYY  | BOS  | NYY  | BOS  |
| BOS  | BOS  | BOS  | BOS  | BOS  | BOS  | BOS  | NYY  | TOR  | NYY  |
| TOR  | TOR  | TOR  | TOR  | TOR  | TOR  | BAL  | TOR  | BOS  | TOR  |
| BAL  | BAL  | BAL  | BAL  | BAL  | BAL  | TB   | BAL  | BAL  | BAL  |
| TB   | TB   | TB   | TB   | TB   | TB   | TOR  | TB   | TB   | TB   |

(Same standings in 1998-2000 as well so 1.000 rank correlation for 1998-2003.)

## Lecture #12 Wednesday, February 11

Measures of intraseason balance

$$\text{St. Dev. Win \%} = \sqrt{\sum \frac{(x_i - \bar{x})^2}{N}} \text{ where } N = \text{number of teams.}$$

Ideal St. Dev of Win % =  $.5/G^{.5}$  where G = number of games.

Lorenz curve/Gini coefficient of wins

Measures of interseason balance

Standard deviation of win % (one team across years, not 1 year across teams)

HHI index

Concentration ratios

Rank correlation index

|      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|
| 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
| NYN  | NYN  | NYN  | NYN  | NYN  | NYN  | NYN  | BOS  | NYN  | BOS  |
| BOS  | BOS  | BOS  | BOS  | BOS  | BOS  | BOS  | NYN  | TOR  | NYN  |
| TOR  | TOR  | TOR  | TOR  | TOR  | TOR  | BAL  | TOR  | BOS  | TOR  |
| BAL  | BAL  | BAL  | BAL  | BAL  | BAL  | TB   | BAL  | BAL  | BAL  |
| TB   | TB   | TB   | TB   | TB   | TB   | TOR  | TB   | TB   | TB   |

(Same standings in 1998-2000 as well so 1.000 rank correlation for 1998-2003.)

Finished measuring competitive balance.

Review of intra and inter season measures.

Did correlation and rank correlation.

Went over annotated bibliographies.

Went over research paper.

Went over Moneyball assignment.

## Lecture #13 Friday, February 13

Finished up interseason competitive balance.

Standard deviation of win % (one team across years, not 1 year across teams)

HHI index

Concentration ratios

Rank correlation index

|      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|
| 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
| NYN  | NYN  | NYN  | NYN  | NYN  | NYN  | NYN  | BOS  | NYN  | BOS  |
| BOS  | BOS  | BOS  | BOS  | BOS  | BOS  | BOS  | NYN  | TOR  | NYN  |
| TOR  | TOR  | TOR  | TOR  | TOR  | TOR  | BAL  | TOR  | BOS  | TOR  |
| BAL  | BAL  | BAL  | BAL  | BAL  | BAL  | TB   | BAL  | BAL  | BAL  |
| TB   | TB   | TB   | TB   | TB   | TB   | TOR  | TB   | TB   | TB   |

(Same standings in 1998-2000 as well so 1.000 rank correlation for 1998-2003.)

Sports and the Law.

Overview of the legal system.

Criminal vs. Civil law.

- Criminal case: State brings case against person or firm for a crime against society. (Done to punish and dissuade.)
- Civil: Person or firm brings case against another person or firm. (Done to compensate.)

Government can engage in some civil cases. EPA suing Exxon for cleanup after an oil spill.

Standard of guilt is higher in criminal cases than in civil cases. (Beyond a reasonable doubt vs. preponderance of the evidence. OJ trial.)

Compensatory vs. punitive damages.

The vast majority of legal actions never go to trial. (Civil suits are settled, criminal cases are plea bargained.)

When cases go to trial it can be done in state or federal court depending on the nature of the action and who is bringing the case to trial.

State and local police/governments vs. federal authorities.

Also depending on the nature of the offense. A handful of criminal offenses are specifically federal in nature. (Mailing a bomb, for example). In particular, when offenses involve more than two states (interstate trade), federal courts generally become involved. States rights.

Nature of courts:

State: county court with an appeal to state court of appeals or a state supreme court.

Federal: District court with an appeal to Circuit Courts of Appeal and the SCOTUS.

Federal judges are all appointed and confirmed while state judges may either be appointed or elected.

Most of our cases are federal cases. District court is a trial court. Can either have a jury or a bench (judge) trial. Defendant may either waive right to a jury or in highly technical cases the standard practice is to omit a jury (bankruptcy and antitrust).

Appeals courts and Supreme court are only review courts. No review evidence, only a review of the court record.

Jury: Innocent, guilty, hung.

- If innocent, case is over.
- If hung, plaintiff/prosecutor can decide whether to retry.
- If guilty, defendant can decide to appeal.

If appealed: Circuit court of 3 judges (out of roughly 15 in any given circuit) reviews case.

- Affirm. (Now can appeal to en banc or Supreme Court.)
- Reverse.
- Reverse and remand. (New trial.)

Appeals court can only decide whether precedent was correctly applied and whether trial judge made errors in law.

If appealed: writ of certiorari to Supreme Court.

- Refuse to hear the case (deny writ). Need at least three of the Supremes. Essentially affirms the circuit court decision. SCOTUS takes only few cases. Most often when there is a real question in the law (when Circuit Courts have come to opposite conclusions.)
- Affirm.
- Reverse.
- Reverse and remand.

Supreme court can either decide whether precedent was correctly applied and whether trial judge made errors in law.

Supreme Court also has the unique ability to overturn previous precedent. Alito/Roberts. Very reluctant to do this? Why? Adds uncertainty to society. Congress/people can always change decision. Stare decisis. Brown v. Board (1954) overturned Plessey v. Ferguson (1898).

Stays: how do they work? Make no changes until a decision is made.

Impossible not to have activist judges because laws are almost never written so specifically as to apply to every possible situation.

Important issues of Constitutionality. Bill of Rights is very broad and basic. What does freedom of speech mean. (Fire in theater, exhortations to violence (GB), flag burning, Islamic cartoons, Abu-grahib prison photos, pornography, child pornography, Muir woods, etc.)

## Lecture #14 Monday, February 16

Appeals court can only decide whether precedent was correctly applied and whether trial judge made errors in law.

If appealed: writ of certiorari to Supreme Court.

- Refuse to hear the case (deny writ). Need at least three of the Supremes. Essentially affirms the circuit court decision. SCOTUS takes only few cases. Most often when there is a real question in the law (when Circuit Courts have come to opposite conclusions.)
- Affirm.
- Reverse.
- Reverse and remand.

Supreme court can either decide whether precedent was correctly applied and whether trial judge made errors in law.

Supreme Court also has the unique ability to overturn previous precedent. Alito/Roberts. Very reluctant to do this? Why? Adds uncertainty to society. Congress/people can always change decision. Stare decisis. *Brown v. Board* (1954) overturned *Plessey v. Ferguson* (1898).

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Impossible not to have activist judges because laws are almost never written so specifically as to apply to every possible situation.

Important issues of Constitutionality. Bill of Rights is very broad and basic. What does freedom of speech mean. (Fire in theater, exhortations to violence (GB), flag burning, Islamic cartoons, Abu-grahib prison photos, pornography, child pornography, Muir woods, etc.)

Several roles of judges:

- Trial judges are finders of fact.
- Appellate judges determine how existing laws should be interpreted. If Congress disagrees they change the law to be more specific. (No call list for telemarketing.)
- Appellate judges determine whether existing laws are constitutional. If Congress and the people disagree they change the Constitution to be more specific. (Abortion)

1890 Sherman Antitrust act. Designed to prevent monopolies as a response to the robber baron era of the late 1800s. Vanderbilt, Stanford, Gould, Morgan, Carnegie, Rockefeller. First huge test of the Sherman Act was 1911: *U.S. v. Standard Oil*.

1911 *U.S. v. Standard Oil*

- Beginning in 1870, John Rockefeller actively engaged in a series of mergers and acquisitions that ultimately resulted in the Standard Oil company controlling 90% of petroleum refining as well as large parts of crude oil production and retailing.

- Court devised the “rule of reason” by claiming that monopolies should be judged illegal by the Sherman Act only if they were guilty in intent and effect. Other monopoly activities would be judged illegal per se. Since both the intent of Standard Oil’s actions were to create a monopoly with true monopoly prices, the court ruled in favor of the U.S.
- Important dissent by Justice Harlan was that all monopolies should be illegal, not just “bad” monopolies.
- Standard Oil was broken into smaller companies: Standard Oil of New Jersey (Exxon), Standard Oil of N.Y. (Socony/Vacuum became Mobil), Prairie Oil (Sinclair), Standard of Indiana (Amoco/Standard), Standard of Ohio (Sohio), Ohio Oil (Marathon), Atlantic Richfield (ARCO), South Penn (Pennzoil), Continental (Conoco), Standard Oil of California (Chevron)

Good decision. Standard Oil was a predatory monopolist and took full advantage of its position.

In *Federal Club vs. National League* (1922), was Major League Baseball (MLB) found guilty by the Supreme Court of violating the Sherman Anti-Trust Act by conspiring to drive a potential competitor (the Federal League) out of business? What reasoning did the Court use in finding MLB guilty or not guilty? What is your opinion of the Court’s reasoning?

The Court found Major League Baseball not guilty. The Court ruled that Major League Baseball was not in the business of engaging in interstate commerce and therefore was not subject to federal anti-trust statutes. This ruling established baseball’s so-called “anti-trust exemption.”

Of course, you are free to express whatever opinion you wish on the subject. Most objective observers, however, have difficulty understanding how the Court could possibly decide that a business whose sole activity is traveling across state lines to sell tickets could possibly not be interstate commerce. Subsequent Court decisions regarding baseball and other sports clearly show that later Courts also believe that this was an ill-conceived ruling.

*Toolson v. NYY* (1953). Per Curiam. (By the court) Toolson was a minor league player in the Yankee’s system held captive by the reserve clause. Court upheld Federal due to stare decisis (not necessarily because they agree with the original decision). Dissent by Burton and Reed would overturn. Badly decided in 1922. Furthermore, even if MLB was not interstate commerce in 1922, with the expansion of national media (especially radio but soon to be television), it was certainly interstate by 1953.

## Lecture #15 Wednesday, February 18

Radovich v. NFL (1957) confirmed that the exemption only applied to baseball. Apparently football teams (and boxers and basketball teams) who travel across state lines to play games for money is interstate commerce while baseball teams who travel across state line to play games for money is not interstate commerce. Radovich was a top level OL from Detroit who wished to move to California due to an illness in his family. Since the NFL had no California teams at the time, he left the league and joined a minor league team. NFL blacklisted him and any team that would hire him.

Flood v. Kuhn (1972). Last hurrah for Federal Baseball. Again back to Reserve Clause. Flood “not a piece of property to be bought and sold irrespective of my wishes.” Echoing Dred Scott case of 1854.

- Decided once and for all that the “business of baseball” is exempt from antitrust.
- Declared the exemption unique (*sui generis*). Federal Baseball cannot be used to exempt other sports or business activities from antitrust.
- Finally, acknowledges that the original case was incorrect but that *stare decisis* took precedent over correcting a past wrong.

The dissent is interesting.

- Who is Thurgood Marshall? First black Supreme Court Justice. Also prominent civil rights lawyer who argued *Brown v. Board*. No surprise that he is sympathetic to Flood and no surprise that he supports correcting past wrongs over respecting precedent.
- Also joined by Brennan. Example of justice changing views over time. Brennan voted with minority in *Radovich* and would have extended exemption to football. Now votes with minority to rid baseball of its exemption.

Differences of opinion: *Piazza v. MLB*

Franchise moves since Flood (1973).

## Lecture #16 Friday, February 20

What professional franchises in have moved cities over past 30 years?

Teams that have moved cities:

| Sport | Year | From                  | To                           |
|-------|------|-----------------------|------------------------------|
| MLB   | 1972 | Washington Senators   | Texas Rangers                |
| NBA   | 1972 | Cincinnati Royals     | Kansas City Kings            |
| NBA   | 1973 | Baltimore Bullets     | Washington Bullets           |
| NHL   | 1976 | Kansas City Scouts    | Colorado Rockies             |
| NHL   | 1976 | California Seals      | Cleveland Barons             |
| NBA   | 1978 | Buffalo Braves        | San Diego Clippers           |
| NHL   | 1978 | Cleveland Barons      | Minnesota North Stars        |
| NBA   | 1979 | New Orleans Jazz      | Utah Jazz                    |
| NHL   | 1979 | New England Whalers   | Hartford Whalers             |
| NHL   | 1980 | Atlanta Flames        | Calgary Flames               |
| NFL   | 1982 | Oakland Raiders       | Los Angeles Raiders          |
| NHL   | 1982 | Colorado Rockies      | New Jersey Devils            |
| NBA   | 1984 | San Diego Clippers    | Los Angeles Clippers         |
| NFL   | 1984 | Baltimore Colts       | Indianapolis Colts           |
| NBA   | 1985 | Kansas City Kings     | Sacramento Kings             |
| NFL   | 1988 | St. Louis Cardinals   | Arizona Cardinals            |
| NHL   | 1993 | Minnesota North Stars | Dallas Stars                 |
| NFL   | 1994 | Los Angeles Rams      | St. Louis Rams               |
| NFL   | 1995 | Los Angeles Raiders   | Oakland Raiders              |
| NHL   | 1995 | Quebec Nordiques      | Colorado Avalanche           |
| NFL   | 1996 | Cleveland Browns      | Baltimore Ravens             |
| NHL   | 1996 | Winnipeg Jets         | Phoenix Coyotes              |
| NFL   | 1997 | Houston Oilers        | Tennessee Titans             |
| NHL   | 1997 | Hartford Whalers      | Carolina Hurricanes          |
| NBA   | 2001 | Vancouver Grizzlies   | Memphis Grizzlies            |
| NBA   | 2002 | Charlotte Hornets     | New Orleans Hornets          |
| MLB   | 2005 | Montreal Expos        | Washington Nationals         |
| NBA   | 2005 | New Orleans Hornets   | OKC Hornets(***)             |
| NFL   | 2005 | New Orleans Saints    | San Antonio/Baton Rouge(***) |
| NBA   | 2008 | Seattle Supersonics   | OKC Thunder                  |
| NFL   | 2008 | Buffalo Bills         | Toronto/Buffalo Bills        |

NFL 8

NBA 7

NHL 10

MLB 1

Why are there so few franchise moves in baseball?

Multiple reasons:

- Age of league. Less established teams move more often. KC to COL to NJ (NHL); CAL to CLE to MN (NHL); CIN to KC to SAC (NBA); BUF to SD to LA (NBA)
- Expansion rather than moves. However, the pace of expansion has been just as rapid or even faster in the other sports. Furthermore, for a franchise owner, expansion does nothing to expand profits, only allows another future owner to profit from an expanding local economy.
- Baseball is more dependent on large population bases and gate receipts, and therefore the economics does not favor teams moving to smaller metropolitan areas. With shorter seasons and more revenue sharing, there are more suitable expansion site for other leagues, especially in NFL.
- Baseball can prevent moves if it wishes. The NFL cannot prevent a move due to their lack of an anti-trust exemption. The NFL tried to prevent a move by Al Davis of the Raiders from Oakland to Los Angeles and the court ruled that they could not do such a thing. MLB can block moves, however.
- In hockey there was a conscious decision to expand from being a northern U.S./Canadian league to having a national footprint including the expanding south. (Perhaps a mistake in retrospect.)

Four primary ways established leagues have dealt with rivals:

- Competition/Predation (Federal League, USFL, Negro Leagues)
- Merger (AL/NL, AFL/NFL, NBA/ABA, NHL/WHL, NFL/AAFC)
- Coexistence: Need product differentiation (NASCAR/Indy/Formula 1, Indoor/Outdoor, College/Pro, Womens/Mens, Weight classes, fighting styles, others)
- Expansion (MLB/Continental League, NFL/AFL)

## Lecture #17 Monday, February 23

Four primary ways established leagues have dealt with rivals:

- Competition/Predation (Federal League, USFL, Negro Leagues)
- Merger (AL/NL, AFL/NFL, NBA/ABA, NHL/WHL, NFL/AAFC)
- Coexistence: Need product differentiation (NASCAR/Indy/Formula 1, Indoor/Outdoor, College/Pro, Womens/Mens, Weight classes, fighting styles, others)
- Expansion (MLB/Continental League, NFL/AFL)

AFL vs. NFL (1960). Said that NFL expanded into the good markets just enough to prevent a rival league from being able to succeed.

Rival leagues also led MLB to expand its national footprint. Prior to 1950, no Major League teams existed west of St. Louis or south of Washington, D.C., and no team had moved to a new market since the early days of the AL/NL merger. While the 1950s witnessed the first franchise moves since 1903, with the Boston Braves heading to Milwaukee, the Philadelphia Athletics moving to Kansas City, and the Brooklyn Dodgers and New York Giants leaving for the West Coast, the league remained at 16 teams, the same as immediately after the 1901 merger. In 1959, the formation of the Continental League was announced. This 8-team league was designed to expand top-level professional baseball to 8 new cities, primarily in the west and south, and to eventually join the AL and NL in Major League Baseball. While the plan for the Continental League never came to fruition, it is generally accepted that MLB expansion in the 1960s from 16 to 24 teams was as a direct response to this proposed league. Indeed, by 1971 Major League Baseball had come to 5 of the 8 cities proposed by the Continental League either through expansion or relocation. Additional rounds of expansion in 1977, 1993 and 1998 added two teams each year, bringing the total to 30 teams in United States and Canada.

Rival leagues.

The first sport in the U.S. to give rise to fully professional athletes was baseball. Following codification of the rules of the sport in 1845 by Alexander Cartwright, baseball grew in popularity both as a spectator and participatory sport. While some players on certain teams received compensation for their play, it was not until 1869 that the Cincinnati Red Stockings formed the first team comprised entirely of professional players. Their success on the field led other teams to adopt their strategy, and by 1871 the National Association was formed with 9 teams including the Boston Braves, the forerunner of today's modern Atlanta Braves.

The first two decades of professional baseball saw a proliferation of teams and leagues. The National Association collapsed four years after its formation and was replaced in 1876 by the modern National League (NL). Other upstart leagues included the American Association in 1882, the Union Association in 1884, and the Players League in 1890. Competition drove each of these rival leagues out of business, and led to consolidation of the four strongest teams of the American Association into the National League in 1890.

The biggest challenge to the established National League came in 1901 with the formation of the American League (AL) which raided many of the top players from the "senior

circuit.” Agreements between the leagues to honor the other league’s player contracts allowed them to peacefully co-exist and led to the creation in 1903 of the World Series, pitting the champion from each league against one another. The popularity of Major League Baseball (MLB), the moniker for the united American and National Leagues, has risen steadily since its formation as has the level of cooperation between the Leagues with the formation of the All-Star Game in 1933, the first amateur draft in 1965, and ultimately with inter-league play in 1997.

While competition from rival leagues has lessened since its early days, at least three rival leagues have served to fundamentally change the nature of professional baseball. In 1914, the Federal League formed to challenge Major League Baseball and took the novel approach of suing the established leagues for anti-trust violations. Sports leagues present an usual problem to anti-trust experts since for a game to take place, the two competitors must agree to play each other, and in order for a sports league to run smoothly, a great deal of cooperation between teams, who are nominally competitors, must occur. While the Federal League was driven out of business well before the court issued a ruling, in *Federal Base Ball Club of Baltimore, Inc. v. National League of Professional Base Ball Clubs et al*, 259 U.S. 200 (1922), the Supreme Court ruled that baseball did not qualify as interstate commerce as the interstate travel was a “mere incident, not the essential thing.” Since the federal antitrust statutes only apply to interstate commerce, as opposed to “purely state affairs,” this ruling established the infamous “antitrust exemption” enjoyed by MLB since that time.

For the first eighty years of professional baseball, African Americans were prohibited from playing in the Major Leagues. Instead, talented black athletes played in the Negro Leagues which competed concurrently with MLB. In 1947 team owner Branch Rickey signed Negro League star Jackie Robinson to MLB’s Brooklyn Dodgers. The success of the Robinson and other black players on the field quickly led all MLB teams to integrate, and faced with the loss of their best players to MLB, the Negro Leagues largely disappeared by the late 1950s.

NFL: As in baseball, rival leagues surfaced periodically to challenge the NFL’s dominance which often resulted in mergers or acquisitions. In 1950, the NFL absorbed three franchises of the All-America Football Conference formed four years earlier. Similarly, the American Football Conference, a 1960 start-up, merged with the NFL in 1966 leading to the first Super Bowl in January, 1967. A notable exception to this trend was the case of the United States Football League (USFL). For three seasons from 1982 through 1985, the USFL challenged the NFL for players, fans, and media attention and filed an antitrust suit against the established league. In July of 1986, a month before the league was to begin its first fall season, the USFL won its suit against the NFL but was awarded just one dollar in damages. Faced with mounting debts, the league folded soon after.

NBA: Like in other sports, the NBA faced competition from rival leagues, most notably the American Basketball Association (ABA), which was formed in 1967. The ABA competed somewhat successfully with the NBA for 9 years, attracting many of the top stars such as Julius “Dr. J.” Erving. Ultimately the league folded in 1976 with the NBA agreeing to accept four of the top ABA franchises.

NHL: Five Canadian-based teams formed the National Hockey League in 1917 as a reorganization of an existing league. American teams were added to the league in the 1920s, and

by 1946, the NHL consisted of the Boston Bruins, Chicago Blackhawks, Detroit Red Wings, Montreal Canadiens, New York Rangers, and Toronto Maple Leafs, also known as the “Original Six.” The number of teams in the league increased through major expansion in 1967 and through a merger with the rival World Hockey Association in 1979.

Fraser v. MLS.

MLS found not guilty.

- Single-entity. One WalMart franchise is not compelled to compete with another branch.
- No league existed before. Hard to say MLS was reducing competition when no competition at all existed previously.
- Relevant market. Did MLS have monopoly power in the professional soccer players market? No. There were minor leagues such as the A-League/USL. There were numerous foreign leagues. Dozens of American players in Europe as well as some in Latin America or other countries.

## Lecture #18 Wednesday, February 25

84 percent of executives polled by Robert Half International said it takes just one or two typographical errors on a resume to remove a candidate from consideration for a job opening; 47 percent said a single typo can be the deciding factor.

Monopoly issues.

What is the relevant market?

Tastykake vs. Continental Baking (Hostess) (1987)

Hostess (maker of the Twinkie, Chocodile, Ding Dong, Ho-Ho, and Snoball) proposed to purchase Drake (maker of the Ring Ding). They were sued by Taskykake (maker of the Krimpet, and Tastykake) to block the merger.

**Question 1:** What is the correct geographical market? While firms may or may not have large nationwide market shares, in distinct markets, notably Boston and New York, Drake and Hostess were #1 and #2. (Boston  $47.7 + 29.3 = 77.0$ ; NYC  $54.5 + 18.0 = 72.5$ )

**Question 2:** What is the relevant product market? Is it “food,” “snacks,” “sweet snacks,” “sweet, baked snack goods,” “snack cakes,” or “premium snack cakes?”

By some market definitions (“food” for example), the merger causes no real increase in market power. By other market definitions (“premium snack cakes”) this merger causes a huge increase in market power.

### **Relationship to Sports Economics:**

What is the relevant market for sports? Does the NFL have a monopoly? Is the market “entertainment,” “live entertainment,” “sports entertainment,” “football,” or “professional football?”

What is relevant market in international boxing #2? Championship boxing matches, not boxing overall or sports in general. Therefore, IBC had monopoly power.

NASL v. NFL. NFL banned NFL owners from owning other sports franchises. (Didn’t want competition for their own product.) NFL owners had nowhere near market power in the capital market, but if there is a special “sports capital market” this is monopolistic. NFL lost and changed its ownership rules. What are some examples of NFL owners who own other teams?

Paul Allen: Seahawks, Trailblazers

Malcolm Glazer: Bucs, Man U.

Krafts: Pats, Revs

Lamar Hunt: Chiefs, Wizards

## Lecture #19 Friday, February 27

No lecture. Midterm exam.

## Lecture #20 Monday, March 9

Went over exam.

Mean = Median = 75

|     |   |    |
|-----|---|----|
| 90s | 2 | A  |
| 80s | 6 | A- |
| 70s | 7 | B  |
| 60s | 8 | C  |

Figure out what went right and what went wrong.

Answer key online.

### **Section I: Multiple choice questions.**

1. D As income falls, demand decreases lowering equilibrium prices. Economists refer to goods whose demand decreases as income decreases as normal goods.
2. A Concession revenue is much harder to observe than attendance. It is true that concessions vary widely from location to location, but so do ticket sales, and that doesn't keep gate revenue from being shared. Concessions are a large portion of game day revenue.
3. D Marginal revenue is the additional revenue a team gains by selling one more unit of the good. Marginal revenue product is the additional revenue an individual players brings to a team.
4. C Since there are only limited number of potential sites for professional franchises, the league can easily assess locales. Capital requirements for franchises are very high, over \$600 million for the last NFL expansion team. Thus, we are left with C.
5. B Teams have less incentive to "tank" during the season in order to get a better draft pick, increasing intraseason competitive balance. Bad teams don't necessarily get the best picks, however, decreasing interseason competitive balance.
6. B Sports teams need strong competitors to be able to produce their product. This is referred to as the Louis-Schmelling Paradox. Both the Dolphins and Blockbuster were owned by Wayne Huizinga at one time.
7. A The idealized win % =  $.5 / G^{.5}$  where G is the number of games played.
8. B Dividing the standard deviation of win % by the idealized win % results in the win % ratio. The win % ratio for MLB is 1.426. The win % ratio for the NFL is 1.672. Since MLB has a lower win % ratio, it has the better within season balance. The win % ratio tells nothing about inter-season competitive balance, and using the ratio method allows us to compare leagues of both different sizes and season lengths.
9. B A, C, and D are all examples of absolute advantage. People's activities are based on comparative advantage.
10. D 3-firm concentration ratio = proportion of championship won by the three best teams. In the NBA the three best teams are San Antonio, Chicago, and the Lakers who have

won 11 out of the last 16 championships or 0.688. In the EPL, the three best teams, Arsenal, Man. U. and Chelsea, have won 15 out of the last 16 championships or 0.938.

11. E In a 20-team league like the EPL, one would naturally expect championships to be more concentrated than in a 32-team league like the NBA. Thus, the n-firm concentration numbers are not directly comparable.
12. C A is the reasoning applied to MLB in Federal Baseball. B and D relate to NFL v. AFL.
13. B While MLS is a single entity structure, multiple team ownership within MLS is known as syndicate ownership. There is nothing illegal about this.

## **Section II: Short answer/Essay questions**

1. First, the court ruled in *Fraser v. MLS* that single entity sports leagues are not necessarily illegal, so the NHL merger may have passed muster. However, in part the court found MLS not guilty of reducing competition because no league existed prior to MLS. In the case of the NHL, a league was in existence, and the merger of all 30 franchises would clearly reduce competition; therefore, the NHL would have a much harder time than MLS convincing the court that their actions were legal. Finally, MLS was found not guilty of monopolizing the market for soccer talent in the U.S. because players had many opportunities to play outside the country. Hockey leagues do exist in Europe but the question is whether they are comparable. If they are not as well funded as the NHL then they provide less of an outlet for hockey talent than the European soccer leagues.
2. Houston revenues:  $\max \pi = PQ = Q(200 - Q/1000) \implies 200 - Q/500 = 0 \implies Q = 100,000$   
 Since profit maximizing quantity is above capacity,  $Q = 80,000$ ,  $P = \$120$ .  
 Total revenue for the owner is  $(80,000)(120)/2 + (20)(20,000) = 4,800,000 + 400,000$   
 Total revenue for the league is  $(80,000)(120)/2 = 4,800,000$   
  
 Nashville revenues:  $\max \pi = PQ = Q(200 - Q/500) \implies 200 - Q/250 = 0 \implies Q = 50,000$   
 Since profit maximizing quantity is below capacity,  $Q = 50,000$ ,  $P = \$100$ .  
 Total revenue for the owner is  $(50,000)(100)/2 + (135)(20,000) = 2,500,000 + 2,700,000$   
 Total revenue for the league is  $(50,000)(100)/2 = 2,500,000$   
  
 The team owner makes the same profit in either city, but the NFL makes significantly more in Houston.
3. This system probably helps intra-season competitive balance for several reasons. First, poorly managed teams or teams in areas that do not have the fan base to support a team get removed from the league through relegation. Furthermore, mediocre teams have a strong incentive to play hard and provide a competitive team to avoid relegation. In promotion/relegation leagues, teams out of the running do not tank at the end of the season in order to get a higher draft pick. If there is too large a disparity between the major and minor leagues, this system may cause intra-season competitive balance to widen.

On the other hand, this system probably hurts inter-season competitive balance. Rich teams in

this system have less reason to promote revenue sharing or other methods of promoting balance for fear of being relegated. Furthermore, only top teams with little fear of being demoted can make long-run investments in their team. For this reason we see

4. Not the usual support for Queen, “Sweet Caroline” by Neil Diamond, and “Enter Sandman” by Metallica, but high marks for “Thunderstruck” (AC-DC) and “Crazy Train” (Ozzy Osbourne). My personal favorites remain “Rock and Roll, Part 2” by Gary Glitter and AC-DC’s “Hell’s Bells”.

## Lecture #21 Wednesday, March 11

Melanoma: results in about 8,000 deaths per year. While the 5-year survival rate is good if you catch the disease early (98%), survival rates for regional and distant stage diseases are 60% and 14%, respectively. About 83% of melanomas are diagnosed at a localized stage. (91% 5-year overall survival rate.)

Suppose benefit of a tan is \$20. (Revealed preference.)

Suppose cost of death is \$3 million. (How can we determine this? Wage premiums, consumer choices.)

First, sun tan happens with certainty, cancer only happens by chance.

$$EV = \sum (pr(x)x)$$

EV of a bet in a March Madness pool.

$$EV = .9(0) + .1(50) = 5 \text{ (fair bet) (bets among friends are a zero sum game)}$$

So, how can you come out ahead. Social value of gambling. Also ask idiots to join the pool (which raise your probability of winning compared to the rest.)

At casinos EV is always less than \$1 per \$1 gambled.

Blackjack (perfect player) = .99

Craps = .98

Roulette (Europe) = .97

Roulette (US) = .94

Slots = .95

Horse/Sports = .9

Lotto = .5 (But high social value)

$$EV(\text{tan}) = 1(20) - 3000000(.001)(.1) = 20 - 300$$

Benefits from sun tan are received now but costs come later.

$$NPV = \sum (EV/(1+r)^t)$$

$$NPV = 20/(1.1)^0 - 300/(1.1^{40}) = 20 - 6.6 = 13.4$$

Also young persons tend to have high discount rates. Things like marriage and kids tends to lower discount rates as people think more about the future.

$$1/(1.1)^{40} = 0.022$$

$$1/(1.15)^{40} = 0.0037$$

$$1/(1.05)^{40} = 0.1420$$

Similar to compounding. Social Security problems. Manhattan for \$22.

Discounting: Example of A Rod and naming rights.

Citi Field: 20 years, \$400 million. Do Excel example of nominal vs. NPV.

## Lecture #22 Friday, March 13

Discounting: Example of A Rod and naming rights.

Citi Field: 20 years, \$300 million. Do Excel example of nominal vs. NPV.

Grammar. "Too much emphasis on grammar." "The idea in Moneyball is to get to first base without making out."

What did Billy Beane "discover"?

The baseball players market was inefficient.

First Bear Stearns meltdown and Moneyball.

Investment vs. leveraged investment (bank or investment bank) vs. mortgage

Effects of a 10% or 20% drop in asset value. (30-1 leveraged)

Bear Stearns went from having \$17 billion in net assets in January 2007 to about \$6 billion in assets Thursday to \$250 million in assets on Sunday.

Efficient Markets Hypothesis. Markets incorporate information and price assets accurately. When information is not available, assets can be inaccurately priced. (Problem today.) When information is deliberately hidden, inaccurately priced. (Enron) When information is not used, assets can be inaccurately priced (Moneyball). There are many things the eye cannot see, and you need statistics to identify it. The difference between a .300 hitter and a .275 hitter is roughly 15 hits over the course of a season or one hit every 2 weeks.

Fed designed to help out illiquid but solvent banks. What happens to illiquid and insolvent banks?

If markets are efficient, never believe a good story

## Lecture #23 Monday, March 16

Finish a bit of efficient markets hypothesis.

- Bubbles
- Information

Do labor/leisure decision on indifference curves.

Tiger is traditionally the best paid golfer in terms of earnings per tournament but also plays in the fewest tournaments.

Backwards bending supply curve in sports violates basic law of supply. Tiger Woods, Rickey Williams, Barry Sanders, Michael Jordan, Lance Armstrong. (Tom Brady not playing on special teams?)

Last year through this point in the season, Tiger had the highest earnings per tournament of any player. He was making \$400,000 per tournament. Yet, he has only played in 5 tournaments. Only 4 of the top 120 players in the world have played in fewer tournaments. Why? (Super model wife might help.)

Did forensic economics test case.

Arbitration: two parties agreeing to allow a neutral 3<sup>rd</sup> party to solve a dispute. (Binding.)

Final offer arbitration eliminates incentive to high-ball or low-ball offers in order to take advantage of starting point bias issues. In final offer arbitration, the arbitrator must choose either one side or the other but cannot compromise.

## Lecture #24 Wednesday, March 18

Did forensic economics test case.

Arbitration: two parties agreeing to allow a neutral 3<sup>rd</sup> party to solve a dispute. (Binding.)

Final offer arbitration eliminates incentive to high-ball or low-ball offers in order to take advantage of starting point bias issues. In final offer arbitration, the arbitrator must choose either one side or the other but cannot compromise.

Dividing the cookie is another efficient preference revealing device.

Do labor/leisure decision on indifference curves.

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Backwards bending supply curve in sports violates basic law of supply. Tiger Woods, Rickey Williams, Barry Sanders, Michael Jordan, Lance Armstrong. (Tom Brady not playing on special teams?)

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Talk about Haywood.

Star basketball player who joined ABA out of high school. Became dissatisfied with current team and wanted to join NBA (Seattle). NBA rules prohibited players not at least 4 years out of high school from joining league. Prohibited any team from signing him. Court ruled that these were unfair exclusionary tactics and allowed Haywood to play.

Also important issues about when or when not to issue a stay.

Who is Maurice Clarrett? Why did court find in Haywood's favor but not in Clarrett's favor?  
Two important pieces: expected value and net present value.

## Lecture #25 Friday, March 20

Talk about Haywood.

Star basketball player who joined ABA out of high school. Became dissatisfied with current team and wanted to join NBA (Seattle). NBA rules prohibited players not at least 4 years out of high school from joining league. Prohibited any team from signing him. Court ruled that these were unfair exclusionary tactics and allowed Haywood to play.

Also important issues about when or when not to issue a stay.

Who is Maurice Clarrett? Why did court find in Haywood's favor but not in Clarrett's favor?

Players (with exception of baseball) have won most of the court cases but lost most of the strikes.

Think of things they agree to.

- Draft. (Restricts marketability of young players. Declared illegal by courts.)
- Reserve clause for 4-6 years. (Restricts marketability of young players. Declared illegal by courts.)
- Rozelle Rule (or the equivalent in NHL). (Declared illegal by courts.)
- Right of last refusal.
- Age limits.
- Salary caps.
- Franchise tag.
- Minor league or practice squad salaries.

After winning Radovich in 1957, all the NFLPA got was health insurance. (And the Rozelle Rule.)

After winning Smith (striking down Rozelle Rule), they still didn't get free agency. (Due to collusion in part. Sweetness didn't get a single offer as a free agent.) Between 1977 and 1988 about 1400 players filed for free agency. Only 2 changed teams.

After two strikes in 1982 and 1987, they lost salary but didn't gain much back.

Didn't get free agency until McNeill in 1993 which only worked because they decertified the union.

Radovich: Reserve clause - illegal.

Mackey: Rozelle rule - illegal (same as reserve clause if compensation is set high enough. Also same as European soccer before the Bosman ruling.)

Smith: Draft - illegal.

Wood: Draft and salary cap - legal.

Non-statutory labor exemption. (Means not written in the laws anywhere.)

So, why do I claim players won the war.

|      | MLB       | NFL       | NHL       | NBA       |
|------|-----------|-----------|-----------|-----------|
| 1970 | 29,303    | 41,000    | 25,000    |           |
| 1978 | 99,876    | 100,000   | 92,000    | 139,000   |
| 2002 | 2,295,694 | 1,300,000 | 1,790,000 | 4,500,000 |

How does this happen. At least in part due to winner's curse. The winning bidder in any auction is likely to be the team who most over-estimated the ability of a player.

## Lecture #26 Monday, March 23

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Unions and DWL.

Strikes and work stoppages in professional sports.

At least 8 strikes/lockouts in the big four leagues that have resulted in the loss of a significant number of games.

MLB: 1994-95 (Last portion of season plus WS plus first month of next season), 1981 (50 games or so in middle of season), 1972 (Red Sox 85-70 ended season ½ game behind 86-70 Detroit Tigers.)

NFL: 1982 (7 games), 1987 (1 game, plus 3 replacement players games)

NBA: 1998-99 (First half of season)

NHL: 1994-95 (First half of season), 2004-05 (Entire season plus Stanley Cup)

Strikes about 100x more common in sports leagues than other unionized industries. Why?

Strikes/lockouts are likely to be effective when one side can hurt the other and can survive a prolonged stoppage.

NHL vs. WalMart. (Easy to get replacement workers vs. specialized skills (pilots). Also, Walmart workers are likely to have less financial security to survive the loss of a paycheck.)

Why do owners win? More resources, longer “careers.” While NFL has average 3-year careers, and MLB has an average of 140 game careers, Steinbrenner has owned Yankees since 1973. Also, few other options that pay nearly so much.

So, why do I claim players won the war.

|      | MLB       | NFL       | NHL       | NBA       |
|------|-----------|-----------|-----------|-----------|
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| 2002 | 2,295,694 | 1,300,000 | 1,790,000 | 4,500,000 |

## Lecture #27 Wednesday, March 25

So, why do I claim players won the war.

|      | MLB       | NFL       | NHL       | NBA       |
|------|-----------|-----------|-----------|-----------|
| 1970 | 29,303    | 41,000    | 25,000    |           |
| 1978 | 99,876    | 100,000   | 92,000    | 139,000   |
| 2002 | 2,295,694 | 1,300,000 | 1,790,000 | 4,500,000 |

NCAA issues.

For next time, read Haywood v. NBA.

Game Theory

One way of examining concept of strategic behavior.

A Nash equilibrium (named after John Nash from the movie A Beautiful Mind with Russell Crowe and Jennifer Connelly) is any set of strategies of all players such that each player's strategy is a best response to the strategy of the other player.

Do prisoner's dilemma. (Single dominant strategy Nash equilibrium.)

- Drug testing.
- Cartels (NCAA)

Do battle of the sexes. (Two Nash equilibria.)

Do rock, paper, scissors. (Only strategy is a randomized/mixed strategy.)

- Football: pass or run.
- Baseball pitching (stealing signals)

Handouts.

What is the easiest pitch to hit in baseball? The one you know is coming.

Greg Maddox: hitters can't figure him out.

NCAA vs. University of Oklahoma

## Lecture #28 Friday, March 27

What is role of NCAA? Governing body for intercollegiate sports.

Not the only governing body.

- Other national organizations (NAIA, NJCAA, NCCAA)
- Conferences
- Schools

What does NCAA do?

- Sets playing rules. (Rugby vs. Association football in England.)

Example of a natural monopoly. Do sports benefit from a single set of rules? Yes and no. Differing rules allow for innovation that makes sports better (Rugby vs. Soccer, DH rules). On the other hand, creating competition is easy if rules are uniform.

- Administrative rules

Eligibility. (HS grad, SAT/GPA scores, drugs, age, amateur status, 4 years (out of 6), enrolled and academic status)

Recruiting and scholarships. (Number of visits, start times, practice times, number of scholarships, transferring)

- Championships

Natural monopoly? Yes. Who is current heavyweight boxing champ?

WBA: Nikolay Valuev

IBF: March 27, 2009

WBC: Oleg Maskaev

WBO: Vitali Klitschko

IBO: Wladimir Klitschko (computerized ranking)

On September 5, 2002, Lennox Lewis relinquished his IBF title upon receiving payment of \$1 million (US) by promoter Don King, who wished to stage a bout between Chris Byrd and Evander Holyfield for the vacant title.

Probably remember names like Tyson, Holyfield, Lewis, Ali, Foreman, Frazier because they were really undisputed. Now, who cares?

NCAA runs most collegiate playoffs (NAIA, NCCAA, NJCAA). Some sports it does not sponsor (squash, rugby, bowling, etc.)

One big sport it does not sponsor. D1 football. Bowl system run by conferences/sponsors rather than NCAA. (Most fans would prefer a monopoly on championship which is why BCS was started. Imperfect monopoly, however.)

NCAA earns most of its money from these playoffs. Good microcosm of athletics overall. Men's basketball highly profitable. BB, hockey, lacrosse slightly profitable. No women's sports profitable. Women's BB is by far most profitable and by far most expensive due to travel.

Game day revenues cover expenses overall in championships.

The rest of the NCAA budget comes from NCAA March Madness television. (CBS currently in the middle of an 11-year, \$6 billion contract). Covers all of the rest of NCAA budget.

Money is split among NCAA teams/conferences at least in part based on size of program. Also each team directly receives about \$185,000 for each game appearance in big dance.

Source of funds for NCAA.

NCAA vs. University of Oklahoma

Went through the finances of the NCAA.

Many items are equally distributed among teams: Academics, conferences, special assistance, about 30% goes to small conferences in total.

NCAA earns most of its money from these playoffs. Good microcosm of athletics overall. Men's basketball highly profitable. BB, hockey, lacrosse slightly profitable. No women's sports profitable. Women's BB is by far most profitable and by far most expensive due to travel.

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[www2.indystar.com/NCAA\\_financial\\_reports/](http://www2.indystar.com/NCAA_financial_reports/)

Good things to look at: U-Mass (big losses paid for by fees and taxes), U-Conn and TN (women's basketball), Ohio State (breaks even exactly - spend what you earn)

## Lecture #29 Monday, March 30

Three types of discrimination:

- Employer discrimination
- Employee discrimination
- Customer/consumer discrimination.

Identify which is occurring in each paper.

No additional lecture. Jigsaw reading.

## Lecture #30 Wednesday, April 1

Tournament, Day 1/2: few upsets, average margin of victory 16, 6 games 25 or more, 2 games less than 9. On the other hand, absolute talent remains for later rounds.

Day 3/4: Much closer games, better competition.

Economics of tournaments

- Want competitive balance- seeding issues.
- Want to provide incentives.

Money earnings between #1 and #2 in golf (about 2-1)

Money earnings between #1 and #2 in NASCAR. (Who is Paul Dana or Dale Earnhardt?)

Risky play in golf is exciting and failure only results in a lost ball. \$500K on last hole, Cinderella story, tears in his eyes... Tin Cup

But risky play in racing is potentially fatal. Don't need to add significant financial incentives to cloud decision making.

Why do MLB, NBA, and NHL play multi-game series? (Obviously the money.)

Also a better way to determine best team (25-75====>7% in 7 game series)

Tournament design also important in corporate business. Why are CEOs so highly paid? Perhaps it is simple corruption. Perhaps it is as an incentive to "win the tournament." Circuit City Stores' Philip Schoonover

Continued with NCAA economics.

Theory of the bureaucracy.

[www2.indystar.com/NCAA\\_financial\\_reports/](http://www2.indystar.com/NCAA_financial_reports/)

Good things to look at: U-Mass (big losses paid for by fees and taxes), U-Conn and TN (women's basketball), Ohio State (breaks even exactly - spend what you earn)

Who are the "starting lineup" of civil rights leaders of the 20<sup>th</sup> century.

- Dr. King, Malcom X, Susan B. Anthony, Jesse Jackson, Rosa Parks, Truman, Thurgood Marshall? If foreign countries are included you would have Gandhi and Mandela.

Tons of examples, obviously.

## Lecture #31 Friday, April 3

Economics of discrimination.

Why do we care whether 3,000 pro athletes (.002% of all workers in country) who are already paid \$1.5-\$4.5 million/year, are being discriminated against?

- Sports may reflect society as a whole. If black (or Latino) sports heroes like LeBron James, Michael Vick, or A-Rod are systematically discriminated against in the labor market, what chance does a black office worker or Hispanic construction worker have?
- Sports provide an excellent laboratory in which to test propositions about society. In order to test whether blacks are discriminated against in regular labor markets, we need measures of pay and measures of productivity. These may be hard to get. For example, the average income for whites for worked full-time year-round in 2004 was \$48,824, but for blacks was \$35,493 and \$32,633 for Hispanics. Does this show prejudice in the labor market?

| Education    | Whites | Blacks | Hispanics |
|--------------|--------|--------|-----------|
| Less than HS | 10.8%  | 12.0%  | 35.8%     |
| HS           | 30.2%  | 36.7%  | 29.5%     |
| Some college | 29.6%  | 31.3%  | 22.8%     |
| BA           | 19.5%  | 14.5%  | 8.8%      |
| Masters +    | 10.0%  | 5.4%   | 3.1%      |

Finally, sports has an important symbolic role beyond its relatively minor economic role.

Who are the “starting lineup” of civil rights leaders of the 20<sup>th</sup> century.

- Dr. King, Malcom X, Susan B. Anthony, Jesse Jackson, Rosa Parks, Truman, Thurgood Marshall? If foreign countries are included you would have Gandhi and Mandela.

Tons of examples, obviously.

The second-tier, however includes many historical figures from sports including:

- Jackie Robinson (and Branch Rickey, 1947, number 42 retired)
- Jesse Owens in Berlin, 1936. (4 gold medals in track against backdrop of Hitler’s Aryan nation.)
- Joe “The Brown Bomber” Louis (first black sports hero). Heavyweight boxing champ from 1937-1949. Defeated Max Schmeling, the German boxer, in 1938 to capture American hearts, both white and black.
- Cassius Clay/Muhammad Ali (great boxer and among the first national voices against Vietnam. Why should black kids go to Vietnam to die when they are treated poorly at home. “I got nothing against no Viet Cong. No Vietnamese ever called me a 'nigger'.” “Why should they ask me to put on a uniform and go 10,000 miles from home and drop bombs and bullets on brown people while so-called Negro people in Louisville are treated like dogs?” (Similar to Rev. Wright and “God damn America.”)

- Doug Williams (1988-89) (first black Super Bowl quarterback)
- Frank Robinson (first black manager in MLB in 1975)
- Art Shell. How many black coaches in NCAA D1 or NFL? (4/117 in 2003, although MS St. added one in December.)
- Arthur Ashe (won U.S. Open in 1968, applied to play in South African Open in 1969)
- Althea Gibson (won Wimbledon in 1956 and 1957)
- Western Texas v. Kentucky (Adolph Rupp vs. Don Haskins)
- And my personal favorite, Nelson Mandela and Francois Peinaar

## Lecture #32 Monday, April 6

Basic civil rights laws.

- Government can't discriminate. Dawson v. Baltimore (1955). Publically owned facilities cannot discriminate. Dawson v. Baltimore about beaches and pools. Holmes v. Atlanta was about golf courses. (Also later disallowed tricks to get around this like privatizing public beaches.)
- 1964 Civil Rights Act stated that public accommodations can't discriminate. If you are routinely open to the white public, you must be open to the black public.
- Daniel v. Paul (1969), Lake Nixon is a public accommodation so cannot exclude blacks. Augusta, which only let in its first black member in the last 10 years, and has not let in a women member yet, is truly private. So they can discriminate. They can decide to let whoever they want in. (But not with tickets to the Masters.)

What are protected classes?

- Today, according to the *U. S. Government Manual of 1998-99*, the EEOC enforces laws that prohibit discrimination based on race, color, religion, sex, national origin, disability, or age in hiring, promoting, firing, setting wages, testing, training, apprenticeship, and all other terms and conditions of employment. Race, color, sex, creed, and age are now protected classes. Note: also add veteran's status, familial status, and sexual orientation in some states.

What classes are not protected: economic (Augusta costs \$250-\$500K for initiation), sexual preference, age (at least in general)

Start with the Masters Golf Tournament at Augusta.

Should Augusta be required to admit women as members? Hootie Johnson v. Martha Burk. (Or a black member for that matter? The first was admitted in only 1990.)

Discuss Daniel v. Paul and Dawson v. Baltimore.

### **Pop Quiz #4: Economics of Sports 229**

1. In Daniel v. Paul (1969), was the Lake Nixon Club a privately owned facility?
2. Was the Lake Nixon Club a "private club" in the legal sense of the term? Why or why not?
3. Based on the precedent set in Daniel v. Paul, could (irrespective of whether this would be a profit-maximizing decision) Costco or Sam's Club deny memberships to patrons of a protected class? Explain.
4. Don't you want to kick asses of the Pauls, these little racist bastards?

### **Answer Key: Pop Quiz #4**

1. The Lake Nixon Club was a private facility owned by Mr. and Mrs. Paul.
2. The court ruled that this was not a true "Private Club" because membership was routinely

offered to all white patrons, and the “members” have none of the attributes of self-government and member-ownership associated with private clubs. The 25 cent membership fee was simply a ruse to get around existing segregation laws.

3. Costco could not deny memberships to black customers if Costco memberships are routinely offered to all white patrons, and the if “members” have none of the attributes of self-government and member-ownership associated with private clubs. Furthermore, Costco is covered by the 1964 Civil Rights Act because it sells goods transported across state lines and because its operations affect commerce.
4. While it is tempting to want their asses kicked, this is wrong for 3 reasons. First, in pursuit of the Holy Cross mission of service for others, it should be noted that the Jesuits would prefer non-violent methods of conflict resolution (like a lawsuit). Furthermore, the Pauls are now certainly at least in their 80s and beating up the elderly is just not that cool. Finally, there is one economic ground on which their actions can be defended. It may be that the Pauls are not racist but their clientele is in which case excluding blacks may be a profit-maximizing decision. This is known as customer discrimination.

Also did the random coin flip.

What is more random

HH

or

HT

22-7 on the coin flip (13-7 on the bet) in 2004  
10-6 and 17-5 in 2005 (27-11).  
11-5 and 15-4 in 2006 (26-9).  
15-5 in 2009

Probability of 27 or more out of 38 is XXX

So how did I do it? Choose the column with the longest streaks.  
22-7 on the coin flip. (Only 13-7 on the bet.)

Prob of 22 or more out of 29 is 0.41% if I am just guessing. That is within most acceptable significance levels.

People have a difficult time understanding randomness.

In 25 random coin flips:

| Longest Streak | Chance |
|----------------|--------|
| 1              | 0.0%   |

|            |       |      |
|------------|-------|------|
| 2          | 0.7%  |      |
| 3          | 14.5% |      |
| 4          | 29.7% |      |
| 5          | 25.0% |      |
| 6          | 14.8% |      |
| 7          | 7.8%  |      |
| 8          | 3.8%  |      |
| 9          | 1.8%  |      |
| 10 or more |       | 1.8% |

So are athletes streaky or are streaks simply the product of random chance?

Joe DiMaggio's 56 game streak? There have been roughly 2,000,000 chances for players to start a 56-game streak. A great hitter has about an 80% chance to get a hit in a given game. The chance of hitting safely in 56 games is then .0000037. Still, given 2,000,000 chances, we should expect this to happen every once in a blue moon.

Do players "catch fire"? If Paul Pierce takes 25 shots a game, he should make or miss at least 6 in a row in about 1/3 of the games he plays.

Streaks v. serial correlation. Statistical analysis suggests streaks are random.

People have a difficult time understanding randomness.

What is the easiest way to write a series.

H...  
HT...

A truly random series will take as many letters to write as are in the series itself.

So, I had an advantage in the odds.

How do I guarantee I make money? I make sure I bet a lot. Do the Casinos beat everybody? No. But the more they play, the more they win.

## Lecture #33 Wednesday, April 8

Why aren't there more black quarterbacks or coaches in the NFL?

- Blacks are as not good at the position. (Madden suggests that this is, in fact, not true.)
- Comparative advantage: perhaps blacks are simply better at RB or WR (or announcing rather than coaching).
- Racist owners/coaches don't want to hire them.  
Overt: no blacks      Covert: "no gangstas"
- Racist fans don't want to watch them.
- Pipeline issues. (How many black D1 coaches, black coordinators, and black assistant coordinators.)
- Media.
- Socio-economic factors. Few blacks in golf (expensive) or ice hockey (expensive and geographic factors). Many blacks in basketball but fewer in baseball (fields vs. courts). Baseball not popular in the south due to heat, football (fall sport) instead?
  
- Babe Dedrickson Zaharias (Pro golfer, tennis player and track athlete)
- Annika Sorenstam and Michelle Wie
- Williams sisters
- Pat Summit, UConn
- 1999 Women's World Cup, Brandi Chastain, Mia Hamm
- WNBA/WUSA
- Billy Jean King and Bobby Riggs

It was billed as the Battle of the Sexes, a tennis match between Billie Jean King, one of the top female players of her day, and Bobby Riggs, a tennis champion of yore who said "women belong in the kitchen and the bedroom, not on the tennis court." The women's liberation movement had gained tremendous momentum in the early 1970s, and gifted female athletes like Billie Jean King were struggling for equal recognition and pay in sports. It was into this environment that Bobby Riggs, a tennis star from the 1940s, emerged to dare King and other top woman players to take on an old, male champion well past his prime. Riggs, always the hustler, played his role as defender of male chauvinism to the hilt, and Margaret Court, the number one female player at the time, agreed to meet him for a match. Riggs made short work of Court in May 1974, beating her 6-2, 6-1, and declared himself the greatest women's tennis player in the world. King had been reluctant to play Riggs, but after Court's defeat she decided to meet him as a matter of principle. On September 20, 1973, the Battle of the Sexes--a \$100,000 winner-take-all match--was held at the Houston Astrodome before 30,000 spectators and 50 million television viewers. As a brass band played marching music, King entered on an Egyptian litter held aloft by four muscular men. Next came Riggs, who was wheeled out in a rickshaw pulled by a harem of six showgirls. The opponents exchanged gifts: Riggs gave King a gigantic Sugar Daddy, and she gave him a live baby pig. Riggs had insisted on a best-of-five match rather than the best-of-three that women usually play, and King agreed, realizing that at 27 years of age and at the top of her abilities she was more likely to wear down a 55-year-old man than the other way around. She was right; her training paid off and she dominated the match, trouncing Riggs 6-4, 6-3, 6-3. Her victory was

hailed as a great triumph for the women's movement, and in its aftermath there was a marked increase in the attention the media devoted to women's sports. King had an illustrious tennis career, winning a total of 39 Grand Slam tournament championships, including Wimbledon six times. She later grew close to Riggs and spoke to him the day before his death from prostate cancer in 1995. One of the last things he said to her was, "We really made a difference, didn't we?"

Start with the Masters Golf Tournament at Augusta.

Should Augusta be required to admit women as members? Hootie Johnson v. Martha Burk.  
(Or a black member for that matter? The first was admitted in only 1990.)

In what sports do men and women compete on equal footing?

- Men have an advantage in sports requiring strength, size, or speed.
- Women have an advantage in sports requiring flexibility or small stature.
- In sports requiring none of these abilities, should be no difference.

In Olympics: equestrian and some sailing are mixed events. (In sailing, most crew have advantage to men.) Gymnastics require different events of men and women that play to strengths. In diving and figure skating, men and women are judged by different standards. (Bridge is a potential Olympic sport.)

In NCAA: rifle and fencing are potentially mixed events. (Only one mixed team in fencing.) Women have won about 1/3 of national championships in rifle.

In other sports, many female jockeys (Julie Krone is all-time winningest and has ridden twice in Kentucky Derby), dog mushers (Iditarod won 4 times by Susan Butcher), pool, Indy racing (Danica), very rare in golf (Babe Zaharias Didrickson, Michelle Wie, Annika), wrestling (high school wrestling)

In long distance, open water swimming, most records are held by women. Fastest English Channel time is male, but female is in third, and females have often held the record, and do hold the record for the fastest back and forth plus many others. (This is an example of physical differences.)

Should Annika Sorenstam be allowed to play in PGA events?  
Should Vijay Singh be allowed to play in LPGA events?

In NCAA: rifle and fencing are potentially mixed events. (Only one mixed team in fencing.)

- West Virginia (13 titles), Alaska-Fairbanks (7 titles), Marsha Beasley was the coach for 8 of WV's titles. Rare to have female coach of men's (or mixed team).
- Roughly 1/3 of national individual champions have been female.

In HS: Girls can compete on boys teams if no comparable girls team exists. (Handful of girls on HS boys football teams, a few more wrestlers, soccer in small districts.)

- About 1,600 girls play football and 4,000 compete in wrestling (0.15% and 2% of total).
- About 200 boys play field hockey.

For a girl to compete on a boys team. Need no comparable sport, history of lack of athletic opportunities. Automatic. Note: a girls basketball teams is a comparable sport to boys basketball even if the skill level is not as high.

For a boy to compete on a girls teams. Need no comparable sport, history of lack of athletic opportunity, non-contact sport.

Grove City case.

## Lecture #34 Wednesday, April 15

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**Section 901(a) of Title IX of the Education Amendments of 1972 provides:**

No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance.

The Federal courts have consistently stated that a lack of gender specific sports is actually discriminatory. In volleyball, for example, a gender neutral team could actually lead to an all-male team because of the advantage of height and strength. Because of this, federal courts have routinely allowed girls to play on boys teams but not the other way around.

For a girl to compete on a boys team. Need no comparable sport, history of lack of athletic opportunities. Automatic. Note: a girls basketball teams

Some state courts have found the other way around, however, such as MA in 1979 (also NY and some parts of PA). Courts interpret athletic opportunities specific to the sport. In order to ensure gender equity, a limit on the number/size of boys can be imposed. Title IX

**Section 844 of the Education Amendments of 1974 further provides:**

The Secretary of Health, Education, and Welfare shall prepare and publish proposed regulations implementing the provisions of Title IX of the Education Amendments of 1972 relating to the prohibition of sex discrimination in federally assisted education programs which shall include with respect to intercollegiate athletic activities reasonable provisions considering the nature of particular sports.

[Institutions] must provide reasonable opportunities for such award (of financial assistance) for members of each sex in proportion to the number of students of each sex participating in !!! inter-collegiate athletics.

The regulation requires institutions to accommodate effectively the interests and abilities of students to the extent necessary to provide equal opportunity in the selection of sports and levels of competition available to members of both sexes.

In effectively accommodating the interests and abilities of male and female athletes, institutions must provide both the opportunity for individuals of each sex to participate in intercollegiate competition, and for athletes of each sex to have competitive team schedules which equally reflect their abilities.

Compliance will be assessed in any one of the following ways:

- Whether intercollegiate level participation opportunities for male and female students are provided in numbers substantially proportionate to their respective enrollments; or
- Where the members of one sex have been and are underrepresented among intercollegiate athletes, whether the institution can show a history and continuing practice of program expansion which is demonstrably responsive to the developing interest and abilities of the members of that sex; or
- Where the members of one sex are underrepresented among intercollegiate athletes, and the institution cannot show a continuing practice of program expansion such as that cited above,

whether it can be demonstrated that the interests and abilities of the members of that sex have been fully and effectively accommodated by the present program.

The Regulation requires that recipients that operate or sponsor interscholastic, intercollegiate, club or intramural athletics. “provide equal athletic opportunities for members of both sexes.” In determining whether an institution is providing equal opportunity in intercollegiate athletics the regulation requires the Department to consider, among others, the following factors:

- (1) Whether the selection of sports and levels of competition effectively accommodate the interests and abilities of members of both sexes;
- (2) Provision and maintenance of equipment and supplies;
- (3) Scheduling of games and practice times;
- (4) Travel and per diem expenses;
- (5) Opportunity to receive coaching and academic tutoring;
- (6) Assignment and compensation of coaches and tutors;
- (7) Provision of locker rooms, practice and competitive facilities;
- (8) Provision of medical and training services and facilities;
- (9) Provision of housing and dining services and facilities; and
- (10) Publicity

Achieving compliance:

Kelly v. Illinois (1994) Can you drop men’s sports to achieve compliance? Yes. Proportionality assures compliance no matter how it is achieved. This is a tough way to go given men’s reluctance to go to college and football. HC 56-44 W/M

Brown v. Cohen

Brown wants to drop a number of athletic programs for financial reasons (men’s and women’s). Court determines that it is not permissible to drop sports when women are already under represented.

Is the econ department sexist?

Proportionality

Progress

Full accommodation

## Lecture #35 Friday, April 17

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Title III of ADA

"No individual shall be discriminated against on the basis of disability in the full and equal enjoyment of the goods, services, facilities, privileges, advantages, or accommodations of any place of public accommodation by any person who owns, leases (or leases to), or operates a place of public accommodation." given petitioner's suggested limitation, any less broadly.

The question whether petitioner has violated that rule depends on a proper construction of the term "discrimination," which is defined by Title III to include:

"a failure to make reasonable modifications in policies, practices, or procedures, when such modifications are necessary to afford such goods, services, facilities, privileges, advantages, or accommodations to individuals with disabilities, unless the entity can demonstrate that making

such modifications would fundamentally alter the nature of such goods, services, facilities, privileges, advantages, or accommodations.”

What is a reasonable modification?

What is fundamentally altering the nature of a good.

## Lecture #36 Monday, April 20

Title III of ADA

“No individual shall be discriminated against on the basis of disability in the full and equal enjoyment of the goods, services, facilities, privileges, advantages, or accommodations of any place of public accommodation by any person who owns, leases (or leases to), or operates a place of public accommodation.” given petitioner’s suggested limitation, any less broadly.

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What is a reasonable modification?

What is fundamentally altering the nature of a good.

Is poor eyesight a disability? Yes.

Is allowing eyeglasses a reasonable modification? Yes.

Does it fundamentally alter the nature of the good? I am testing you on sports economics not on eyesight, so no.

What about in sports? Baseball hitters have exceptional eyesight. (Even more so than strength or speed.) A little strange that we allow them to augmented their eyesight but not their biceps through steroids.

Safety of players could obviously mean that wire-rimmed glasses are not a reasonable accommodation.

Learning disabilities: Extra time on exams and quiet spaces.

As long as a regular person doesn’t have difficulty finishing in time, then allowing extra time to others isn’t unfair. Similarly, for those who are easily distracted, a quiet space allows for decent performance while still allowing others to do the best they can. Again, I am not testing for speed or ability to work in noisy environments.

Of course, extra time or quiet work environments may not be a reasonable accommodation for some jobs. Manufacturing floors, bomb disposal, etc.

Costs of compliance

Cheap for new buildings. Expensive for retrofitting.

Should firms be allowed to pay fine rather than retrofitting. Economically, yes.

Go through Coase Theorem and trains and farms. Compare to ADA.

The Coase Theorem says that individual bargaining should lead to the efficient outcome w/o government intervention. Assignment of property rights also not important (except for who pays.)

Problem comes with identifying costs to disabled.

Other problem is when transaction costs become high as is the case when there are many parties involved.

Martin v. PGA: Martin is professional golfer with serious disability.

Martin v. PGA: Martin is an individual with a disability as defined in the Americans with Disabilities Act of 1990 (ADA or Act). Since birth he has been afflicted with Klippel-Trenaunay-Weber Syndrome, a degenerative circulatory disorder that obstructs the flow of blood from his right leg back to his heart. This makes it very difficult for him to walk.

What did court decide?

- First, the PGA tour is a public accommodation. Open to all who qualify. While there are high standards to be employed, there are high standards to be employed as a professor at Harvard and Holy Cross as well, so these places need to make reasonable accommodations for disabled. Can't discriminate by race/gender either.
- Obviously, the events are public accommodations. Augusta can keep out blacks and women from its membership but not from the Masters events.
- Cart is a reasonable accommodation.

Do you agree with the Court?

What about the Olympic runner? (Amputee with Cheetah legs.)

## Lecture #37 Wednesday, April 22

Huge change in sports infrastructure in past 15 years.

Since 1987, 78 major league stadiums and arenas have been constructed at a cost of \$22.6 billion (in 2005 dollars), of which \$16.0 billion was financed with public funds (Baade and Matheson, 2006).

Median age of arenas in all sports is less than 15 years. In some cases these stadiums are for expansion (Jacksonville, Memphis, etc.) In most cases, however, stadiums are built to replace existing facilities. In most cases the existing facilities are only economically obsolete, not structurally obsolete (except Kingdome, English stadiums, Superdome, Yankee stadium in 1970s).

What make something economically obsolete?

- Wrong size (too big or too small).
- Inadequate concessions.
- Wrong location within metropolitan area.
- Lack of luxury boxes.
- Bad lease.
- Parking.
- Poor amenities.
- Poor seating (esp. multi-use stadiums)
- Novelty effect.
- Sports arms race: zero-sum game.

Essentially no stadiums built between 1920-1950.

Late 60s and 70s “cookie cutter” era.

Articles to read for Friday:

Carlino and Coulson

Baade, Baumann, and Matheson

Both are on-line.

## Lecture #38 Friday, April 24

### Administration

- Final exam - talk about on Monday
- Annotated Bibliography for Monday: 9 court cases, 2 articles, optional for studying include 5 jigsaw articles, Moneyball, Hakes/Sauer Moneyball article.

What possible positive impact might stadiums/franchises/events have on cities rather than teams?

- Jobs
- Higher income
- Tax revenues
- Civic pride
- Cultural amenity
- Big-league city
- Advertising.
- Urban redevelopment. Anchor for a downtown area.

What possible negative impact might stadiums/franchises/events have on cities?

- Crowds/congestion
- Substitution away from other goods
- Lower recirculated spending
- Higher taxes
- Negative association with “bad” teams

### Cities

Become a “Big-League” city. Pride issue.

- In leagues without revenue sharing, may become an also ran.
- Little evidence that this leads to measurable improvements. Attitudes are difficult to measure. Income/employment/growth are not correlated with presence of a team.

Employment/Economic growth.

- Common claims that a team leads to \$100s of million/year in benefits.
- Employment issues are tiny. A typical team will employ roughly 100 local workers in front office positions. Another 1,000-1,500 gameday in NFL. (Players are never local.)
- Substitution effects. Local vs. visitor. Casual visitor vs. sports dedicated.
- Leakages from sports are big. Mostly to athletes who live outside metro area.

Museums vs. Sports?

- Residual claimant on monies. (City or non-profit organization.)
- Education externality.

Consumer surplus?

- Distribution of income of sports users.
- Television doesn't require expensive stadiums.

Coates and Humphrey and Baade, Baumann and Matheson don't find these effects.

Carlino and Coulson: 8%, 4%.

Sports may serve as a selling point or city. Raise rents, lower wages.

## Lecture #39 Monday, April 27

### Urban revitalization

- Generally not very good. Stadiums are usually not very good neighbors.
- Wall-fortresses. Newer stadiums are worse than older ones.
- Limited use. 82 days/year 10 days/year
- Cub/ Wrigley works for mixed use.

### Why give stadiums instead of money?

- Misperception about economic effects. At least you get something tangible. (False.)
- In-kind transfers.
- Permanence.
- Edifice complex. Nigerian stadium.

### Paid for by out-of-towners

- Ignores risk to taxpayers.
- Ignores fungibility and tax incidence.

### Why do they win elections?

- Standard political economy argument.

### Case of Los Angeles. Why not two expansion teams?

### Case of paying for stadium with naming rights. PSL.

### How to pay for stadiums

- Private funds - good source
- Naming rights - good source (assuming it goes to construction rather than owner's pocket)
- PSLs - good source - user pays
- Tax increment financing - ok except we don't apply this to other businesses
- Excise taxes - other people pay but ignores fungibility
- General taxes - worst of the bunch

### Discuss grades, office hours, final

- Tuesday 10-12, 1-3
- Wednesday 10-12, 1-3
- Friday 10-12, 1-3
- Monday 10-12, 1-3
- Tuesday 1-3

### Three cautions on grades:

- Bibliography (11 points), final (150 points)
- Unlikely to be much of a curve.

- Remaining points are statistically “harder.” Tests tend to be about 10-15 points lower on average than other work. 40% of previous work is tests, 60% of remaining work is tests. Probably is 2-3% change or roughly  $\frac{1}{2}$  grade.

Class notes, homework and chapter answer keys will be posted shortly.