
Valuing Sports Talent

Module 5, Chapters 17, 22, 23

Salary Determination: Competition and Monopsony

Chapter 17

Lesson: Valuing Sports Talent

Objectives:

- ❑ Apply marginal revenue product theory to sports
 - ❑ Analyze and describe why some players paid below their marginal revenue product
 - ❑ Recognize and explain why pay is different between professions
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Lesson Direction

Scarcity



Rationing



Competition

	ACT	START	INFO	WK 17	PTS
QB	(M)	T Brady NE QB		SD F	23
RB	(M)	C Johnson Ten RB		TB F	31
RB	(M)	F Jackson Buf RB		Dal F	1
WR	(M)	L Fitzgerald Ari WR		Wsh F	16
WR	(M)	B Marshall Chi WR		NYJ F	5
TE	(M)	J Graham NO TE		@NYG F	6
D	(M)	Jets D/ST D/ST		Wsh F	8
ST	(M)				
K	(M)	M Prater Den K		TB F	9

Week 1 Matchups	
Big Red Machine 105.90 PROJECTED	
All Out Blitz 98.58 PROJECTED	
PREVIEW	
Big Red Machine	All Out Blitz
QB: 17.92 A. Rodgers QB - GB NO Sun 1:15 pm	QB: 12.60 T. Romo QB - DAL @NYJ Sun 12:20 pm
RB: 12.00 J. Stewart RB - CAR @ARI Sun 10:00 am	RB: 27.70 D. McFadden RB - OAK @DEN Sun 10:00 am
RB: 1.60	RB: 17.60



Forbes
Highest Paid
Athletes

Forbes
Celebrity 100

Sports Illustrated Fortunate 50 - Big changes this year!

How would YOU value sports talent?

If you ran a sports team, what would you consider when valuing sports talent?

Are there any problems that you can think of that might make valuing sports talent (or talent in general) particularly difficult?

Marginal Revenue Product

Common measure of an athlete valuation

MRP – how much revenue (in \$) is contributed by a player to the team.

Calculated as a product of the number of wins produced by a player (Marginal Product) and how much each win is worth (Marginal Revenue)

The Barry Bonds Show

Barry Bonds was paid \$10.3 Million in 2001

That year, he hit 73 home runs, setting a MLB record

In 1999 and 2001, the Giants placed 2nd in their division.

1999 Attendance: 2,078,365

2001 Attendance: 3,311,958

A 1,233,603 person difference!

The Barry Bonds Show

FCI for the Giants suggests that the additional attendance was worth at LEAST \$23.7 Million and possibly up to \$50.5 Million

In a single series with the Padres, Bonds' participation was estimated to be worth up to \$2.87 Million!

Production function of a firm: $Q = Q(L, K)$

Q – quantity of good produced; L – quantity of labor; K – quantity of capital

Suppose capital is fixed at level \bar{K} .

Profit function of a firm: $\pi = P(Q)Q(L, \bar{K}) - wL - r\bar{K}$

To maximize profit, we take the derivative of Profit wrt Labor, set it to 0:

$$\frac{d\pi}{dL} = \frac{dP(Q) \cdot Q}{dQ} \times \frac{dQ}{dL} - w = 0$$

$$\boxed{\frac{dP(Q) \cdot Q}{dQ}} \times \boxed{\frac{dQ}{dL}} = w$$

$$\boxed{MR} \times \boxed{MP_L} = w$$

$$MRP_L = w$$

Marginal Revenue Product Explanation

A Numerical Example

- Suppose the supply of linebackers is:
$$w = \$100,000 + 5,000L$$

where w – wage; L – number of linebackers
- The Marginal Revenue Product of linebackers (demand for linebackers) is:
$$MRP_L = \$1,000,000 - 4,000L$$
- What is the equilibrium number of linebackers that will be employed?
$$MRP_L = w$$
$$\$1,000,000 - 4,000L = \$100,000 + 5,000L$$
$$L = 100$$
- What is the equilibrium wage?
$$w = 1,000,000 - 4,000(100) = \$600,000$$
- But players are typically paid a wage that is lower than the Marginal Revenue Product that they contribute. Why is that?

Monopsonistic Exploitation

- In a competitive labor market, a player's wage would be exactly equal to the player's contribution to the team (Marginal Product of Labor)
 - However, it is not.
 - In fact, wage is lower than the marginal product of labor contributed by the player.
 - Why is that?
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- Answer: The labor market is not competitive. It is a monopsony.
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Monopsonistic Exploitation

- Monopoly: One seller, many buyers
 - Monopsony: One buyer, many sellers
 - Professional sports may be characterized as a Monopsony in the labor market. One buyer (league) buys the product (labor) from many sellers (players).
 - Result: Player Exploitation, where
Wage < Marginal Revenue Product of Labor
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Monopsonistic Exploitation

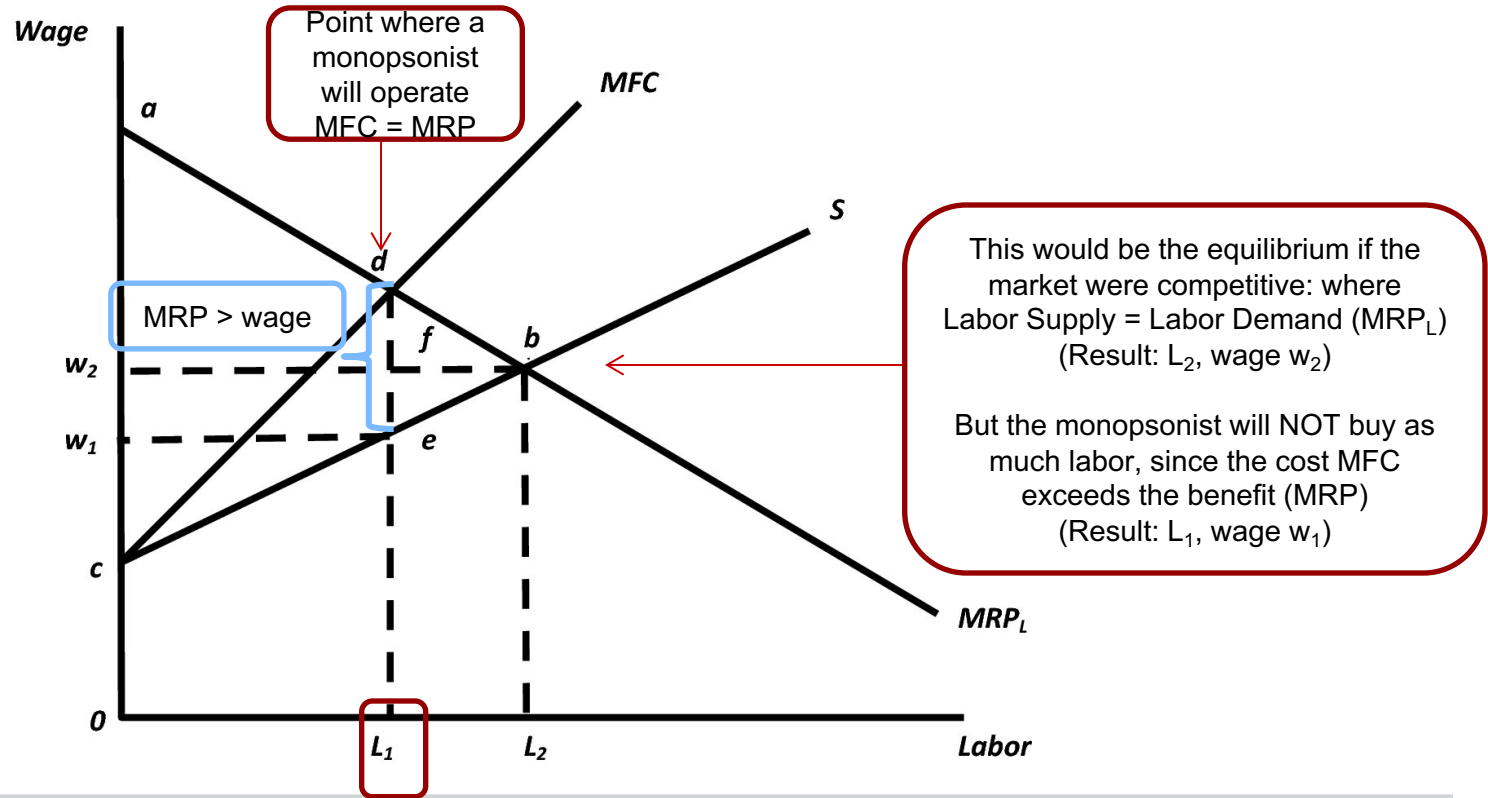
- Why is Wage < Marginal Revenue Product of Labor?
- Explanation:
 - A monopsonist employer knows that employing more people, each player will be paid a higher wage (since Supply of Labor is upward-sloping). This increase in wage is called Marginal Factor Cost:

$$MFC = w + \frac{dw}{dL} \cdot L$$

$$dw/dL > 0 \rightarrow MFC > \text{wage}$$

- A monopsonist will expand labor until marginal benefit = marginal cost. Thus a monopsonist will operate where
$$MRP_L = MFC$$
 - But at that point $MRP_L > \text{wage}$ (see the graph at the next slide)
 - This is called Player Exploitation
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Monopsonistic Exploitation



Monopsonistic Exploitation

- Numerical Example:
 - Suppose the supply of NFL quarterbacks is given by:
$$w = \$1,000,000 + 600,000 (QB)$$

where w – wage, QB – number of quarterbacks
 - Marginal Revenue Product of quarterbacks is:
$$MRP = \$10,000,000 - 300,000 (QB)$$
 - **If the market were competitive**, the wage and employment would be determined by the equilibrium: Labor Supply = Labor Demand:
$$w = MRP$$
$$\$1,000,000 + 600,000 (QB) = \$10,000,000 - 300,000 (QB)$$
$$QB^* = 10, Wage^* = \$7,000,000$$
-

Monopsonistic Exploitation

- Numerical Example:
 - Suppose the supply of NFL quarterbacks is given by:
 $w = \$1,000,000 + 600,000 (QB)$
where w – wage, QB – number of quarterbacks
 - Marginal Revenue Product of quarterbacks is:
 $MRP = \$10,000,000 - 300,000 (QB)$
 - Marginal Factor Cost: $MFC = \$1,000,000 + 1,200,000 (QB)$
 - **In a monopsony**, the wage and employment are determined by the point where Marginal Factor Cost = Marginal Revenue Product:
$$MFC = MRP$$
$$\$1,000,000 + 1,200,000 (QB) = \$10,000,000 - 300,000 (QB)$$
$$QB^* = 6, \text{ Wage}^* = \$4,600,000$$
-

Monopsonistic Exploitation

- Result:
 - We see that a monopsonistic buyer (team or league) would
 - 1) employ fewer players than in the competitive equilibrium, and
 - 2) pay a wage that is lower than the player's contribution to the team.
-

Player Exploitation - Our term for how much of a player's MRP is kept by the owner.

$$PE = (MRP - \text{salary}) / MRP$$

Scully (1974) determined player exploitation before Free Agency:

- 79-88% for hitters
- 80-90% for pitchers

That means owners keep almost six times as much money as players receive!

Willie Mays was paid \$13.9 Million during his career, but he was worth \$79.2 Million to his teams!



Willie Mays and Player Exploitation

Sources of Monopsony Power

- **Reserve Clause**
 - Used to be included in the standard player contract
 - Bound a player to one team, as long as the team wanted to employ the player's services (provided they pay the player no less than in the previous contract)
 - No other teams would bid on the player
 - The player's only alternative – to retire from the league and change occupation (e.g. Michael Jordan tried baseball, unsuccessfully)
- **Reverse-Order Player Drafts**
 - Players entering the league are chosen by the teams in the following order: The team with the worst record picks first, the next worst team picks second, etc.
 - The goal is to help the weaker teams improve the quality of their roster & competitive balance
 - In practice, draft choices are often traded. Result: strong teams get to move up in the draft
 - Why that increases monopsony power: the draft eliminates competition for the best young players (no reason to bid up their wages)
- **Collusion among the Clubs**
 - Reserve Clause was discontinued around 1975.
 - Free agents – players who are eligible to sign with any club or franchise. They should be able to have the clubs compete for their services – which would lead to higher wages
 - But owners of clubs have colluded (agreed not to bid competitively in free agent markets), thus reducing players' options and maintaining each club's monopsony power

	MLB	NFL	MLS
Year Instituted	1965	1936	2000
Most #1 Picks	New York Mets San Diego (FIVE)	Indianapolis (SEVEN)	DC United New York Philadelphia (TWO)
Least #1 Picks	8 Teams (ZERO)	4 Teams (ZERO)	4 Teams* (ZERO)

Running the Lottery Treadmill

18 teams have had lottery picks 5+ seasons in a row since 1984

LA Clippers:

1984 - 1990 (7)

1997 - 2004 (8)

2006 - 2010 (5)

Reverse Order Draft: Restricting Competition for Incoming Talent

History of Player Pay: Reserve Clause

*“After 12 years of being in the majors, I do not feel I am a piece of property to be **bought and sold** irrespective of my wishes”*

--Player

*“I certainly agree with you that you, as a human being, are not a piece of property to be bought and sold. This is fundamental to our society, and I think, obvious... [but] **I cannot see its applicability to the situation at hand.**”*

--MLB Commissioner

*“It is further understood and agreed that the party of the first part **[the team]** shall have the right to ‘reserve’ the said party of the second part **[the player]** for the season next ensuing... [subject to the condition that] the said party of the second part shall **not be reserved at a salary less than that [paid in the present season].**”*

Justice Oliver Wendell Holmes ruled baseball exempt from Sherman Antitrust Act (1890)

*“If prior to March 1,... **the player and the club have not agreed** upon the terms of such contract [for the next playing season], then on or before ten days after said March 1, **the club shall have the right to renew this contract for the period of one year on the same terms**, except that the amount payable to the player shall be as the club shall fix in said notice.”*

The Reserve Clause of 1889 & 1922

Over the time that Free Agency was instituted, average growth of wages was 1.6% in the US.

In baseball, the growth rate was 17.8%.

Does this mean the difference between wages and MRP was large or small previously?



After Free Agency

Before FA, owners had the reserve clause to guarantee long-term contracts whenever they wanted one.

After FA, long-term contracts became beneficial to both owners and players.

1. Performance
Risk (owners)

2. Injury Risk
(players)

Of course, the owners tried to cheat...

Collusion I (1985)

Commish Peter Ueberroth scolded owners for negotiating with free agents when other teams were doing the same.

Arbitrator Tom Roberts finds owners guilty

Collusion II & III (1986-87)

Owners created an “information bank” so that each owner could see what other owners were offering free agents.

Scully (our economist friend) found that the percentage of revenues paid to players decreased, costing over \$100 Million to players

Arbitrator George Nicolau finds owners guilty, they must pay \$525.5 Million in interest and lost salary to players (in 2009 dollars).



Mike Leach's Contract Incentives:

#1 public school
graduation rates in Pac-
12 = \$25,000

Unique incentives &
bonuses for football
coaches
(USA TODAY)

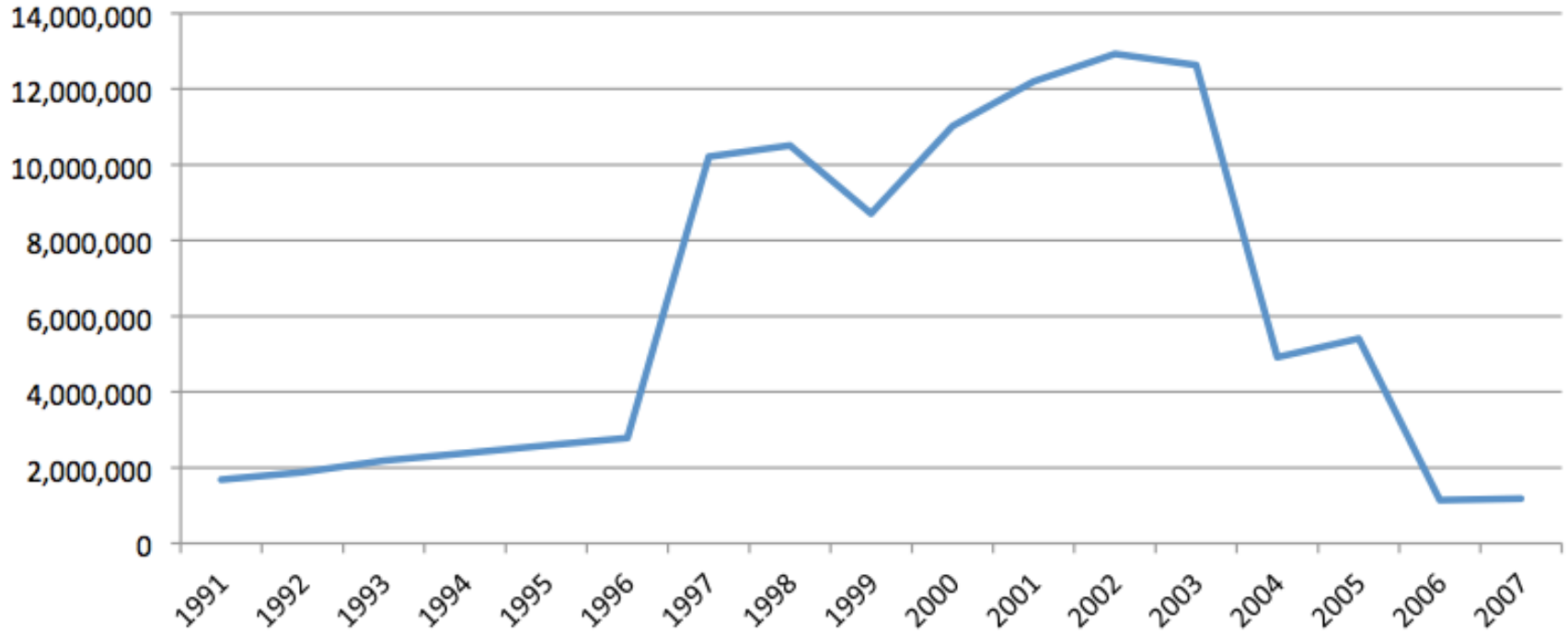
<https://youtu.be/eGDBR2L5kzI>

Strategic Player Effort & Incentive Compatibility Mechanisms (ICMs)

Earnings-Experience Profile

- Perhaps we earn different amounts throughout our careers.
 - What would an E-E Profile look like?
 - What would cause the changes we might expect?
 - Does this theory contradict MRP earnings?
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Gary Payton - Yearly Salary



Experience Earning Profile

Average NFL Salary by Age (2013)



The Value of Athletes: Special Cases

- Winner's Curse

- Owners are bidders, players are the prize. The “uninformed” owners may bid well below/above the player's MRP.
- This theory implies that owners and GMs do not understand the value of players and so bid too much for some players.
- This has to be SYSTEMATIC. We have no reason to believe that there is systematic misunderstanding of talent that leads to overpayment for poor talent very often.

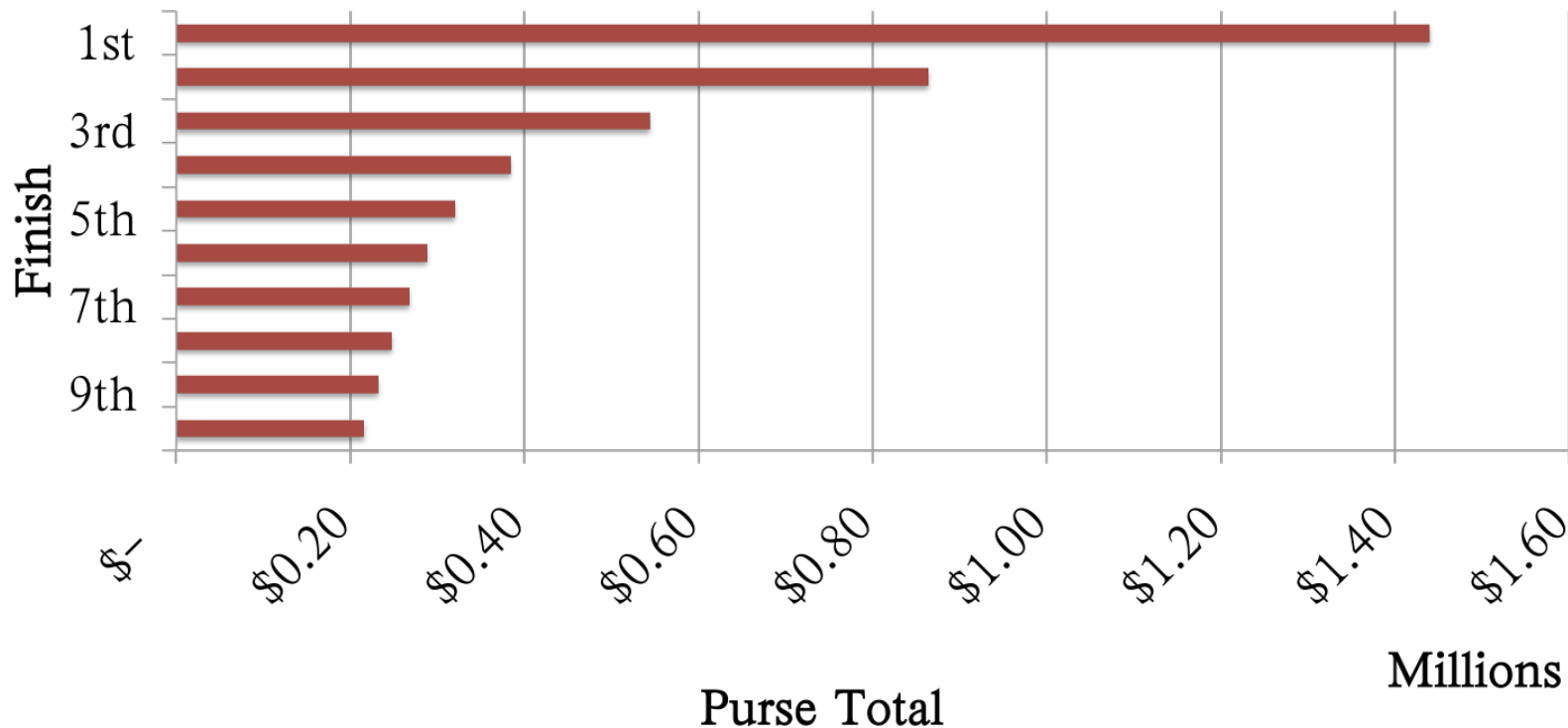
- Bidding Wars

- When taking second place is very costly. Example: season is closing in on the playoffs and two teams need just one player to clinch a playoff and its reward. Coming in second when bidding for a player is very costly.
- In this situation the player's ability did not change. What changed is the marginal revenue (during the playoffs)

- Winner-Take-All Tournaments

- Mostly in individual sports
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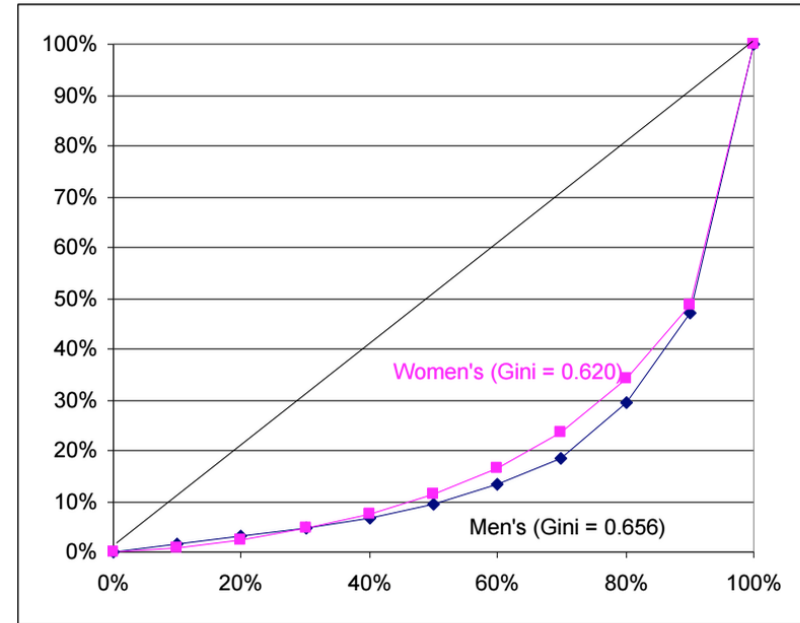
2012 Masters Tournament Purse



The Value of Athletes: Bidding Wars

- In individual sports, this is very common, since fans want to see only the best performances.
- The top 10% of players in men's and women's golf (and often tennis) win over 50% of the total purse for any given tournament.

Men's and Women's Golf Lorenz Curve



The Value of Athletes: Winner-Take-All Tournaments