Two Camps of Thought

Advocates

New Stadiums spur so much growth that they are self-financing

Proponents

- A privileged few get rich
- Historical data show losses over the lifetime

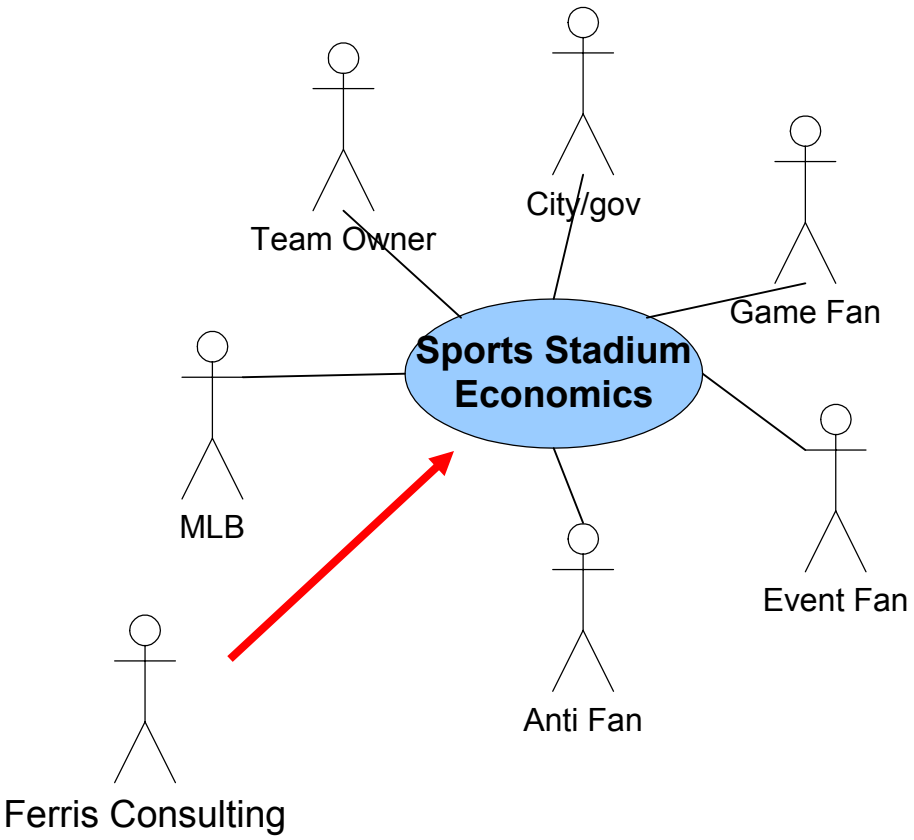
Measuring True Economic Growth

Key Factor: Increased Productivity

1) Trade with other regions

2) local value added
(Must be higher than other uses of local workers, land and investments)

The Stake Holders

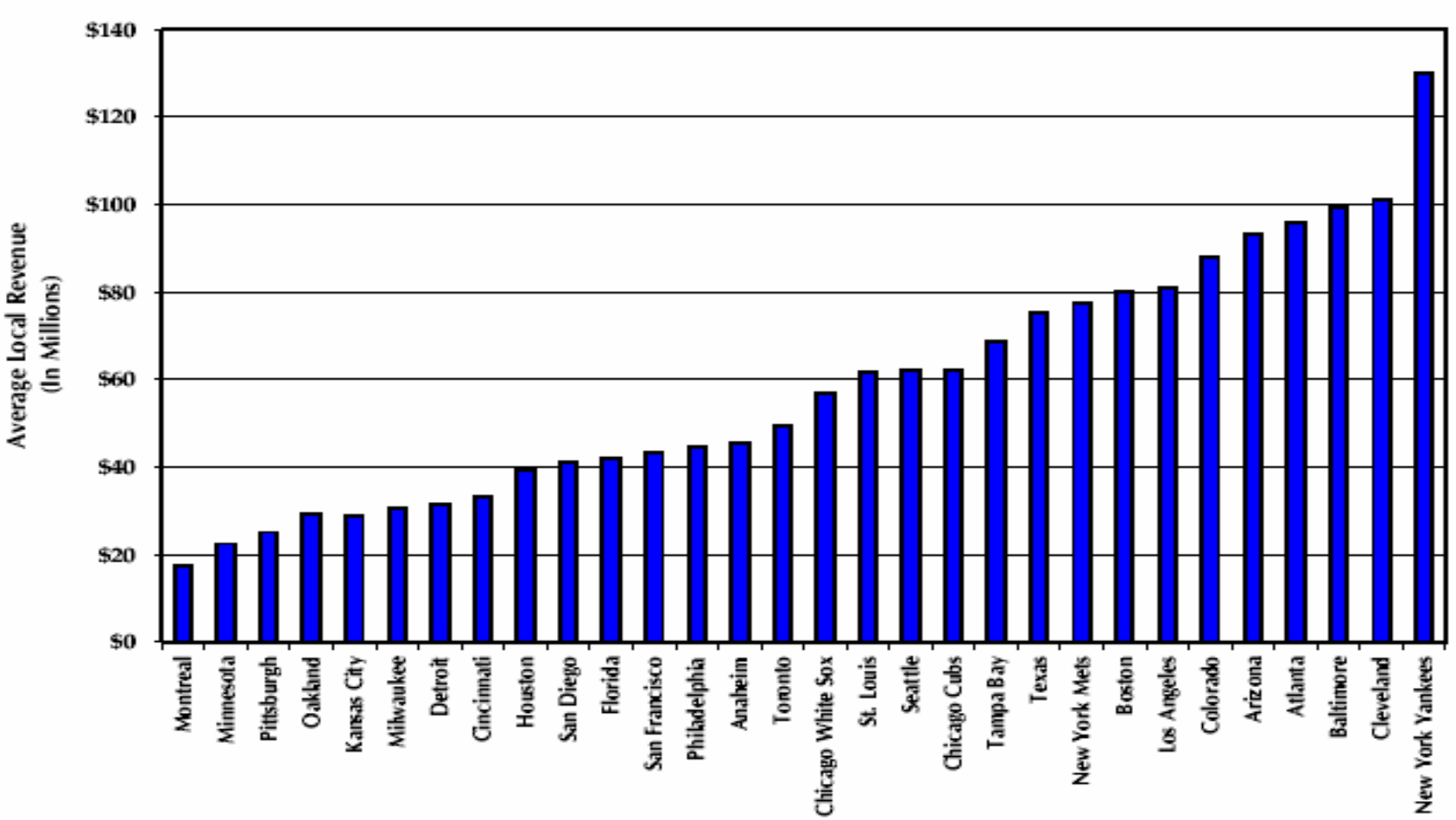


Revenue

1. Regular Ticket Sales
2. Broadcasting Revenue
3. Naming Rights
4. Other Local Operating Revenue (concessions, catering, merchandise, stadium advertising, and luxury seating)

Revenue (cont'd)

Average Local Revenue for each MLB market between 1995 & 1999



Revenue (cont'd)

- Average Revenue between 1995-1999

Increased by 17.4% annually

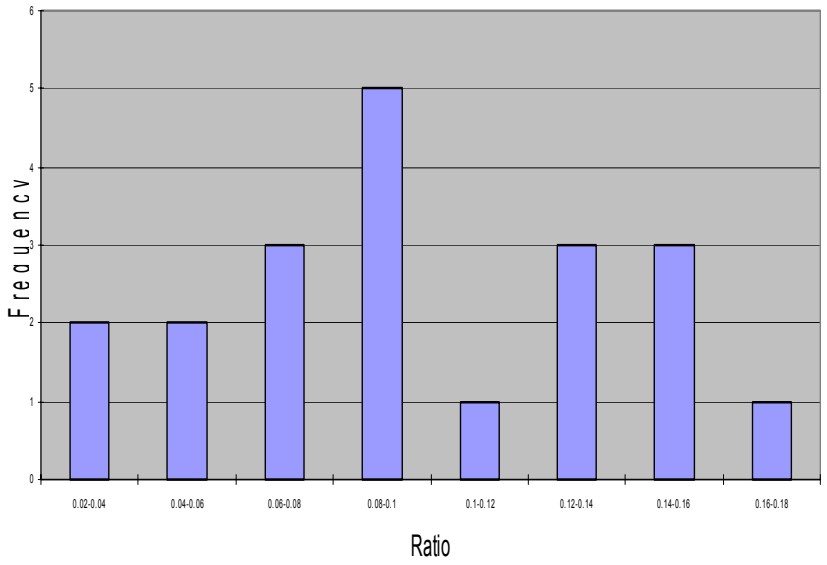
- The average revenue maintain 13.6% annually after 1999

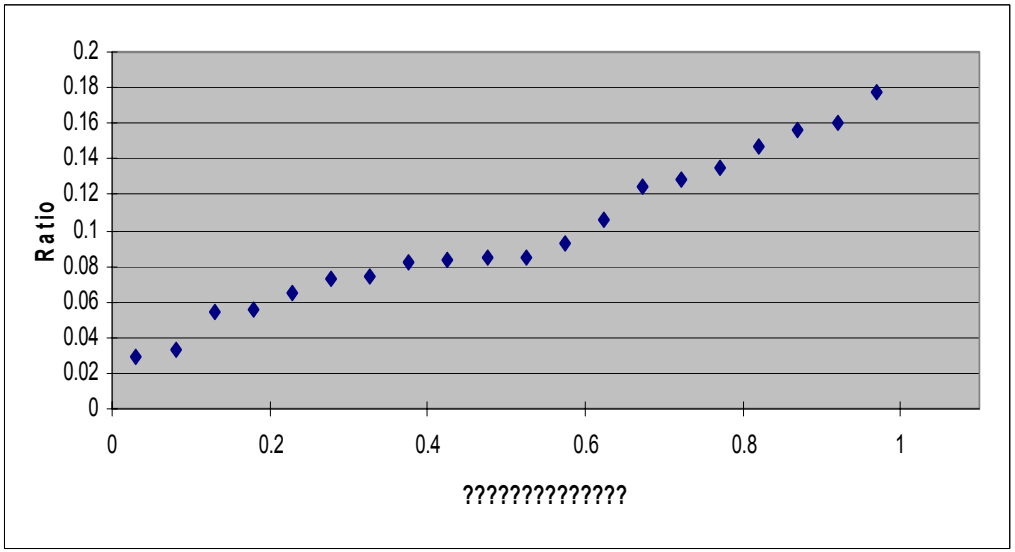
- The total revenue in 2001 was $2.8 billion

Regular Ticket Sales

- **Estimate for Portland**

Distribution of proportion





Ticket sale receipts for Portland will be between $18.630 million and $28.305 million with 90% confidence.

Broadcasting Revenue

Historical Data

Broadcast deals between TV Networks and MLB between 1995 and 2005.

Network	Years Covered	Ave Cost Per Year	Total Cost
CBS	1990 - 1993	$265 million	$1.06 billion
ESPN	1990 - 1993	$100 million	$400 million
ABC/NBC	1994 - 1999	$0-revenue sharing	$0-revenue sharing
ESPN	1994 - 1999	$42.5 million	$255 million
FOX	1996 - 2000	$115 million	$575 million
NBC	1996 - 2000	$80 million	$400 million
ESPN	1996 - 2000	$87 million	$435 million
FOX Cable	1997 - 2000	$40.5 million	$162 million
FOX	2001 - 2006	$417 million	$2.5 billion
ESPN	2000 - 2005	$141.8 million	$851 million

Broadcasting Revenue

Local Media Revenue and population in various MLB markets

Pittsburgh	2.36	9.10
Cincinnati	1.98	7.90
Minneapolis	2.97	7.20
Kansas City	1.78	6.50
Milwaukee	1.69	5.90
Portland	2.26	

•Above have similar sized populations to Portland,
we will use their local media broadcasting revenues to estimate Portland's.
• For five cities:
- Average population :2.156 million
- Average revenue : $7.32
•Broadcasting revenue estimation for Portland :$ 24.401 (Based on historical data)

Naming Rights

- Bank One will pay $2.2M/year to the Arizona Diamondbacks (30 years)
- Pacific Bell paid $2.1M/year to the Giants (24 years)
- Average revenue :$2.136M

Other Local Operating Revenue

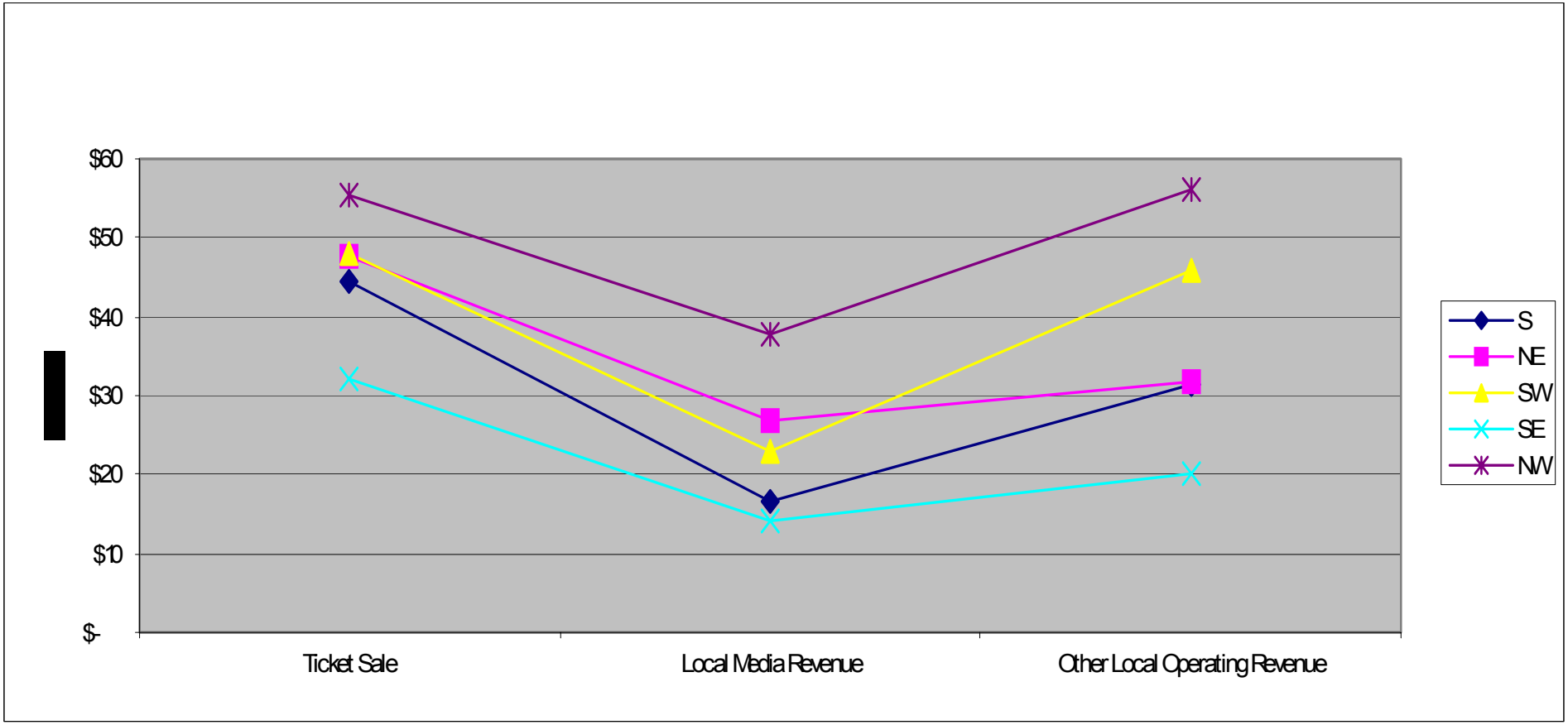
(concessions, catering, merchandise, stadium advertising and luxury seating)

Estimations for Portland

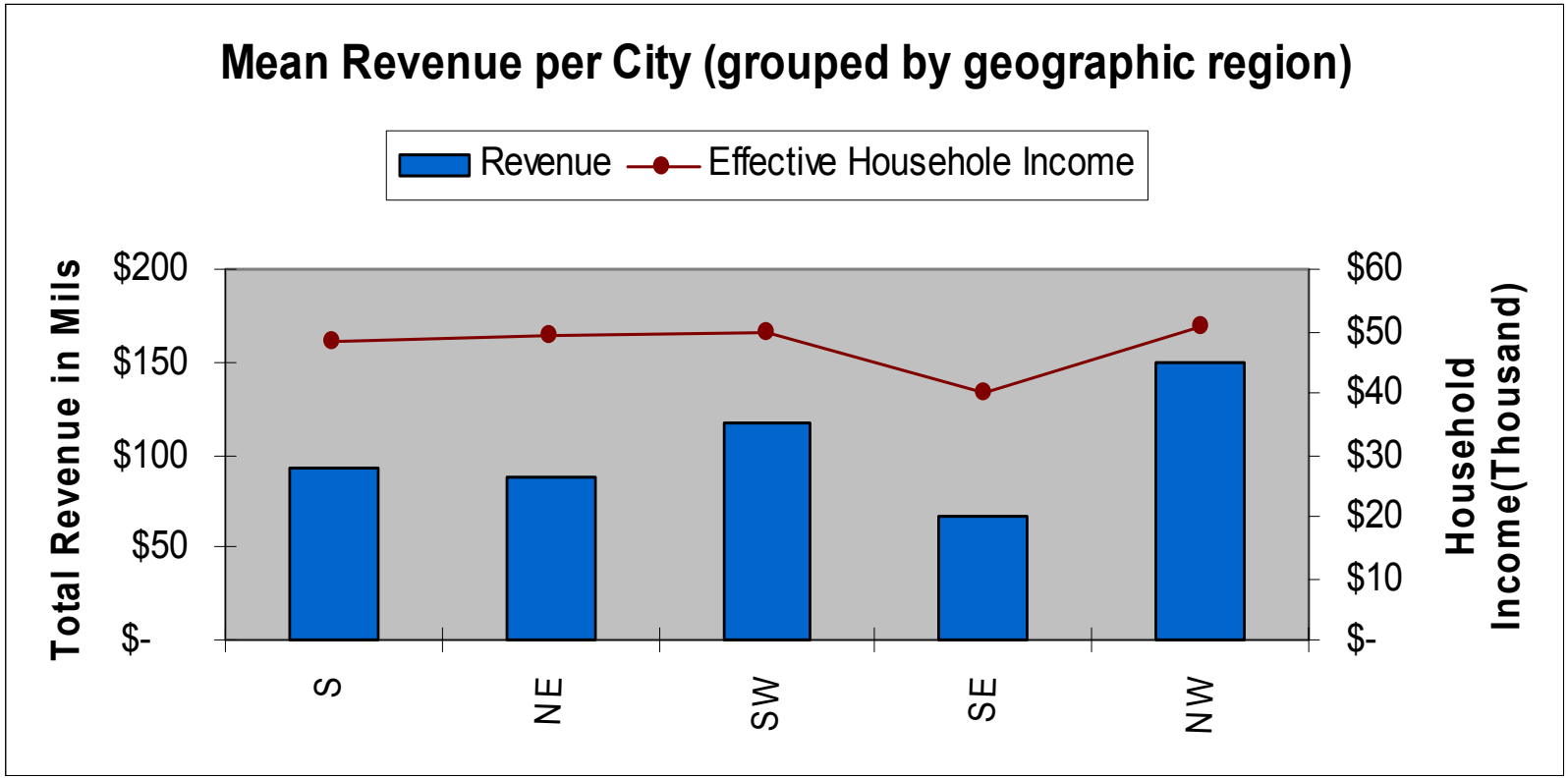
- Concessions and catering: $10M
- Merchandise and stadium advertising: $10M and $6M respectively
- 70 Luxury seats at $85.710 each (6M total)
- 3000 Club Seats at $2.500 each (7.5M total)

Revenue Analysis (Observation)

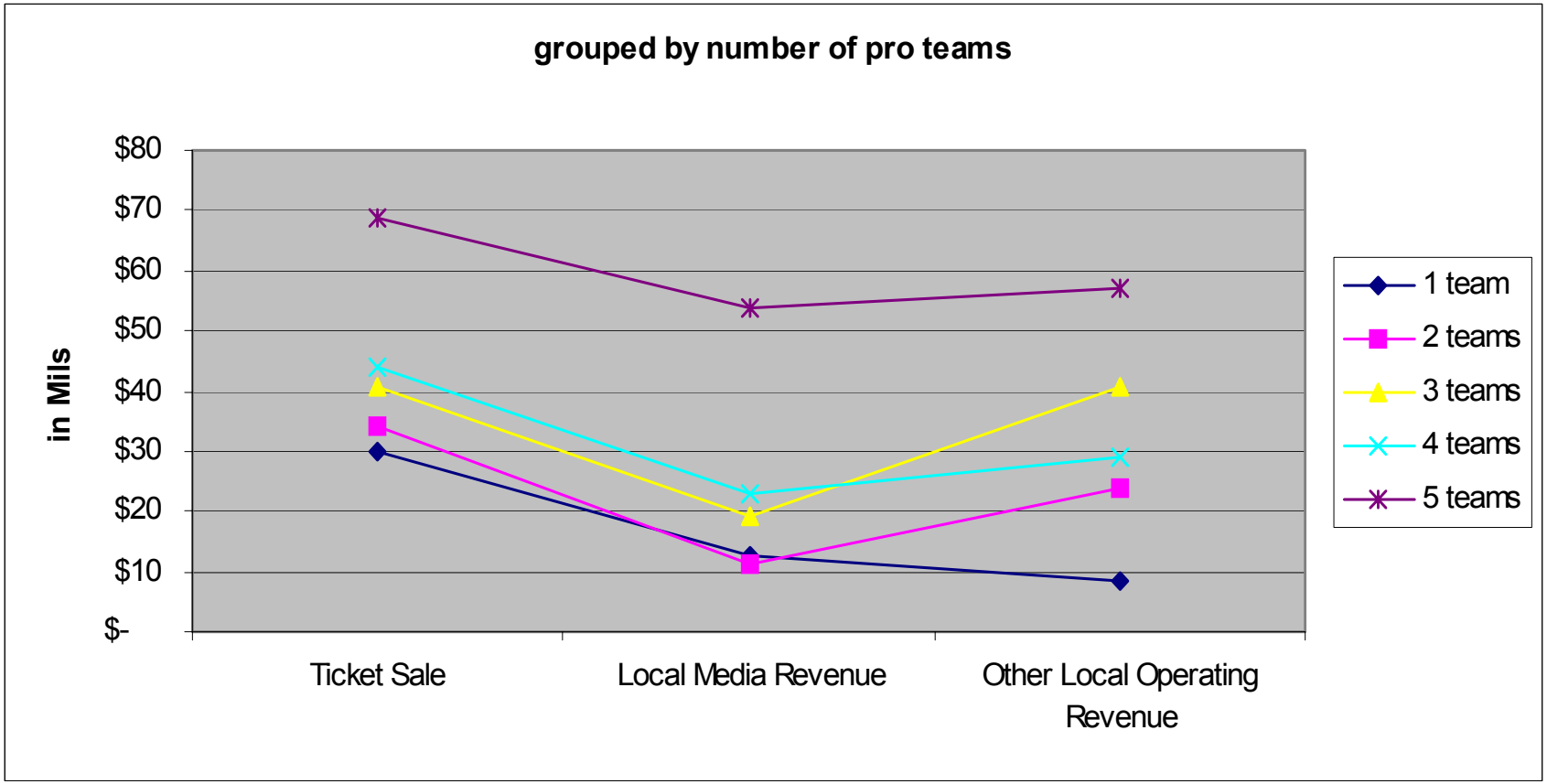
Correlations between Baseball Revenue and Geographic Regions



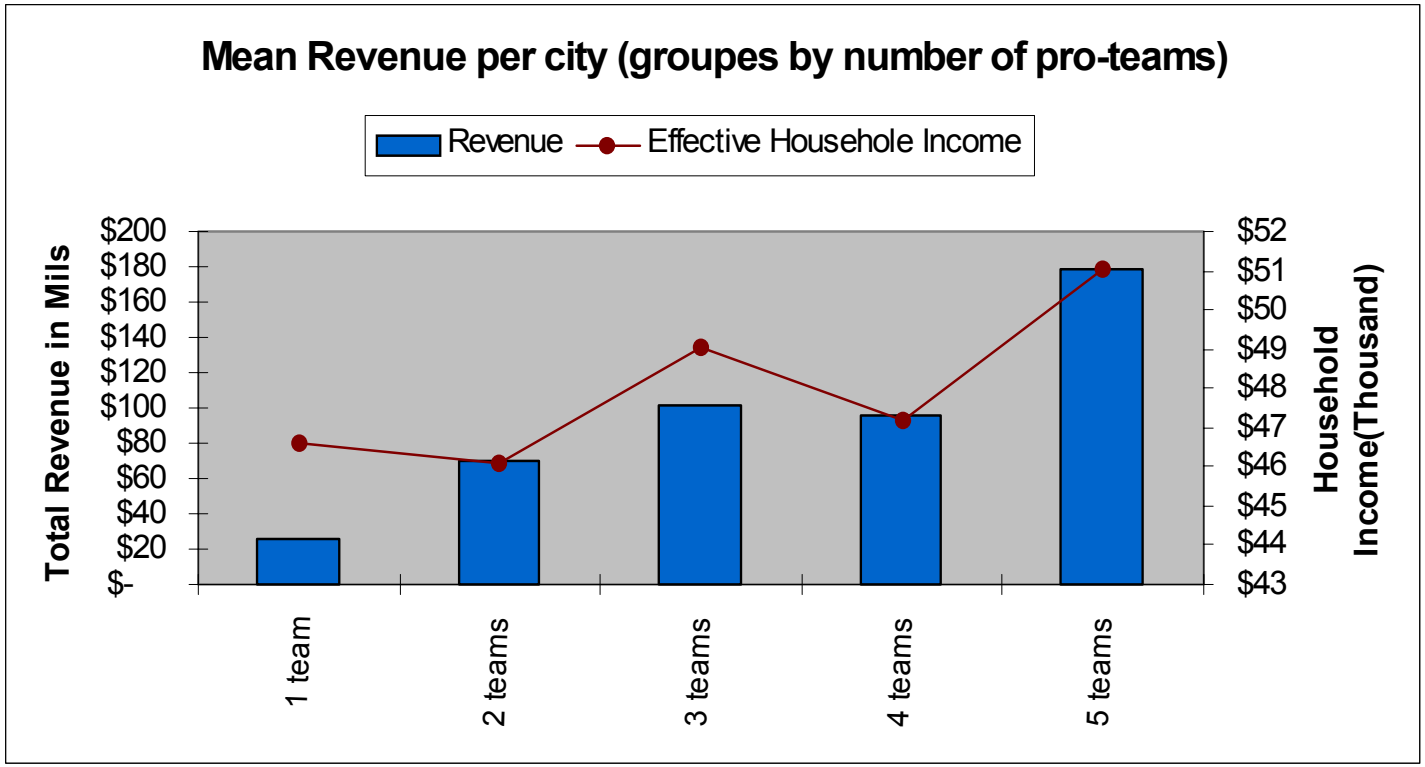
Correlations between Average Total Baseball Revenue and the Median Household income



Correlations between the Baseball Revenues and the Number of Teams in a City



Correlations between Total Baseball Revenue and Median Household Income for Each Geographic Region



Regression Analysis

- Identify the mathematical equation which describes the relationship between the variables in order to predict the revenues
- How?
  - Variables selections from demographics
    - Variables should be independent
    - Variables and predictor variables should be dependent
  - Find the linear equation such that the distance between data and the line will be minimized.

Variable Selection – Correlation Matrix

- Let data itself decide which variables will be selected to predict the revenues
  - Rain fall (x1)
  - Effective population (x2)
  - Percentage of graduating from high school or above (x3)
  - Median household income (x4)
  - Art, entertainment, recreation receipts in 1997 (x5)
  - Stadium age (x6)
  - The number of households with more than $100,000 income (x7)
  - Regular ticket sales revenue (Y1)
  - Local media revenue(Y2)
  - Other local operating revenue(Y3)

Correlation Matrix

	x1	x2	x3	x4	X5	x6	x7	Y1	Y2	Y3
x1	1.00	(0.17)	0.04	(0.28)	(0.42)	0.18	(0.15)	(0.26)	(0.10)	(0.40)
x2		1.00	(0.49)	0.16	0.91	0.24	0.95	0.75	0.85	0.69
x3			1.00	0.42	(0.53)	0.01	(0.32)	(0.13)	(0.25)	(0.18)
x4				1.00	0.11	0.13	0.29	0.20	0.08	0.23
x5					1.00	0.17	0.79	0.44	0.58	0.53
x6						1.00	0.22	0.26	0.29	(0.07)
x7							1.00	0.80	0.86	0.71
Y1								1.00	0.88	0.86
Y2									1.00	0.74
Y3										1.00

Correlation Matrix

- Effective population (x2), Art, entertainment, recreation receipts in 1997 (x5), and The number of households with more than $100,000 income (x7) are highly dependent. That means we just need to choose one if more than 2 of them are the variables for the revenue.
- Percentages of graduating from high school or above (x3) and Art, entertainment, recreation receipts in 1997 (x5) are negative correlated.
- Rain fall (x1), Median household income (x4), and Stadium age (x6) are less correlated to other variables.
- The correlations between rain fall (x1) and revenues (Y1, Y2, and Y3) are all negative. That means the more the city rains, the less the city earns in revenue.
- High percentage of graduating from high school or above (x3) lead to the low revenues (Y1, Y2, and Y3).
- The number of households with more than $100,000 income (x7) or the effective population (x2) affects the revenues (Y1, Y2, and Y3) a lot.

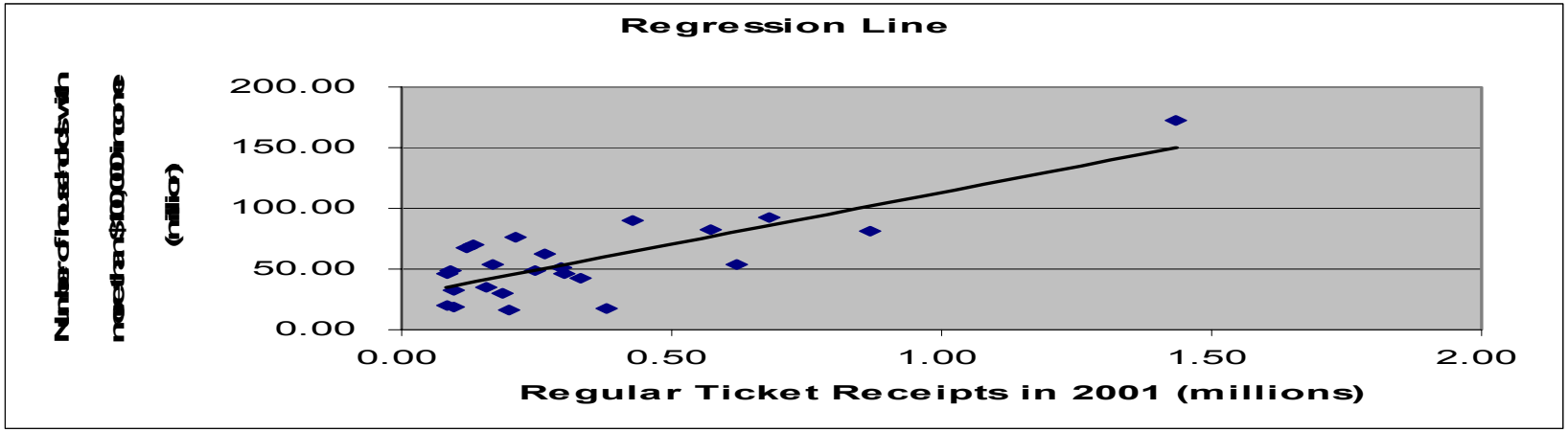
Regression Analysis – Regular Ticket Sales Revenue

- Select variables from correlation matrix
- Do the regression analysis, and divest some variables which are not fit well.
- Do the regression analysis again until all selected variables are fit well.
- Decide the equation by using coefficient for each variable
- Estimate Portland's

Regression Analysis – Regular Ticket Sales Revenue

	df	*SS*	*MS*	*F*	*Significance F*
Regression	**1**	**16689.2**	**16689.2**	**39.6619148**	**2.44638E-06**
Residual	**22**	**9257.303**	**420.7865**		
Total	**23**	**25946.5**			

	Coefficients	*SE*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95 %*
Intercept	**27.59**	**6.20**	**4.45**	**0.0002**	**14.74**	**40.43**
x7	**85.629**	**13.60**	**6.30**	**2.4464E-06**	**57.43**	**113.8**



Regression Analysis – Regular Ticket Sales Revenue

- Significance F in F test is very small. It means that there is almost no chance to reject this model.
- P-value for the variable, x7, in T test, is 0.00000245. We accept that this variable is the factor for the regular ticket sales revenue.
- Regular ticket sales revenue increases when the number of households with more than $100,000 income increases.
- Linear equation: $Y1 = 27.59 + 85.62x7$
- $38.24 million for Portland's (x7=0.12)

Regression Analysis – Local Media Revenue and Other Local Operating Revenue

$$Y2 = 1.91 + 18.873x2$$

$$Y3 = 31.64 + (-0.66011)x1 + 46.03715x7$$

- **$11.26 million for Portland's local media revenue (x2=0.50)**
- **$33.35 million for Portland's other local operating revenue (x1=6.09, x7=0.12)**

Local Economy

Portland Baseball Group

- Cost of the stadium would be provided from income taxes
- Income taxes from the jobs will provide $53M
- The visitors from out of state will increase the revenue
- 200 full-time and more than 1400 part-time jobs

Local Economy

Economists

- Many players do not live locally
- Professional baseball players save more than most people
- Decline on the other activities
- Increase the trade on subsidize businesses in the city

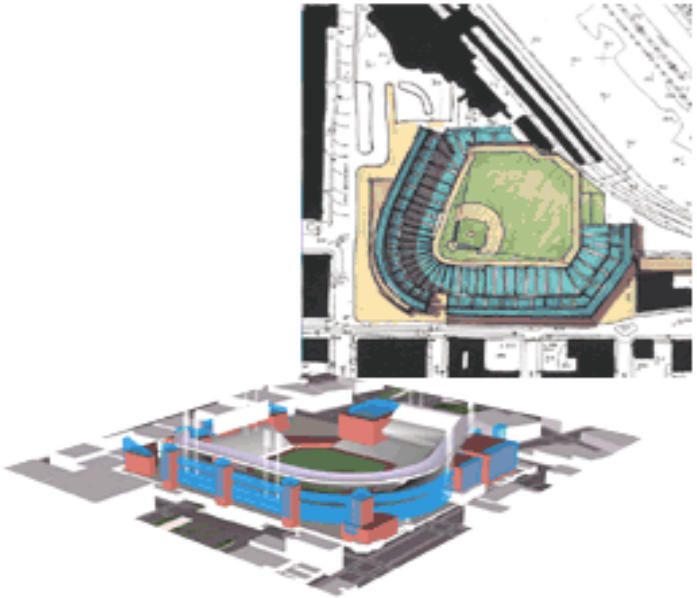
Expenses

Expense Item	Amount (Million $)
1. Stadium Construction Expense	350
2. Event Day Stadium Expense and Stadium Maintenance Cost	11 per year
3. Players Salaries and Benefits	46.8 per year
4. Team Marketing Expense	3 per year
5. Team Operation Cost	14 per year

Expenses

- **Stadium Construction Expense**

 - The total estimated cost for the new stadium, 40,000 seats, including 70 skybox seats and 5,000 fan club seats, is $350 million



Proposed Sites
-North Broadway Site
-Rose Quarter Site
-Post Office Site
-Union Station Site
-Burnside- I405 Site
-Civic Stadium
-Central East Side Site

Expenses (cont'd)

- **Event Day Stadium Expense and Stadium Maintenance Cost**

- The average event day stadium expense and stadium maintenance cost per year is $11 million. It also includes stadium operation cost such as electricity, water and stadium staff salary. Base on MLB statistic in 2002,

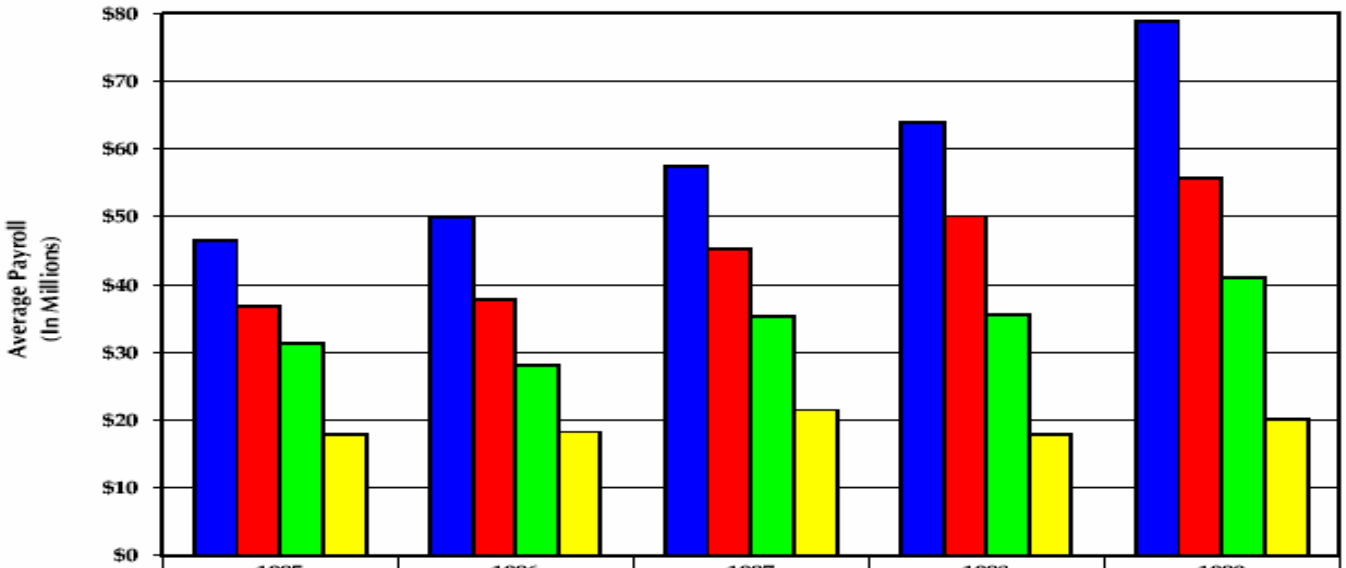
- **Player Salaries and Benefits.**

- The average major league player salary in 2002 season is $67.5 million and $2.4 million per player (from ESPN analysis report April 2002).

Expenses

- The increasing rate of player salaries.

Assume that the payroll of Portland's baseball team will be in the quartile III. The increasing rate for quartile III in this period was 30.8%, from $31.37 million in 1995 to $41.04 million in 1999. The payroll expense increased average 7.7% annually in this quartile.



	1995	1996	1997	1998	1999
Quartile I	$46.40	$49.97	$57.38	$63.96	$78.83
Quartile II	$36.90	$37.86	$45.29	$50.08	$55.67
Quartile III	$31.37	$28.11	$35.37	$35.45	$41.03
Quartile IV	$17.80	$18.24	$21.49	$17.97	$20.21

Annual Average Payroll for each quartile from 1995 to 1999

Who Will Pay for the Facility?

- **The franchise pays**.
- This in essence has the fans and users of the facility pay.
- **The general public pays**
- The general public is forced to pay when a new tax is imposed or if general fund revenues are used to fund the stadium
- **Some combination of public and private money**
- It used to pay for sports facilities. The most acceptable financing strategies are designed to use a mix of various funding sources

What are the total costs?

- **Equal Annual Payment Analysis**

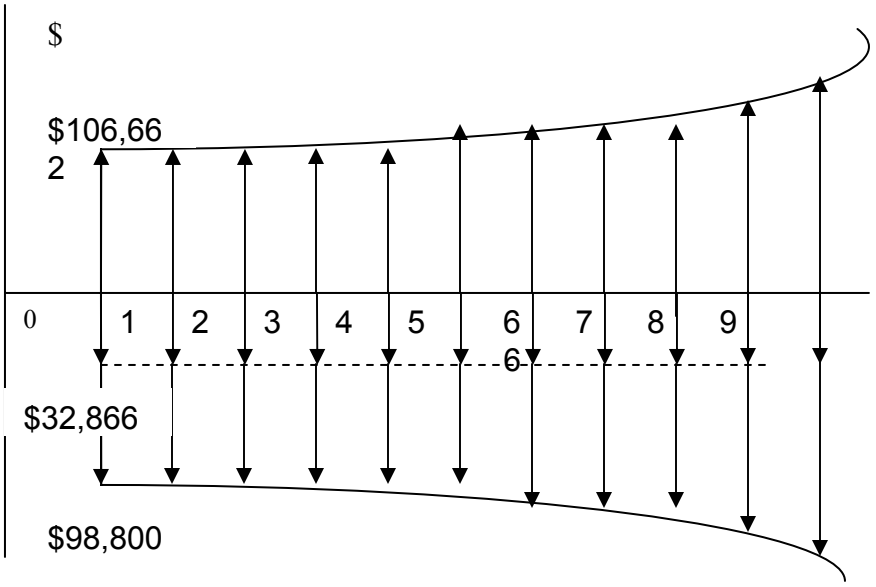
Infrastructure costs	$ 20,000,000
Stadium Construction Loan	$ 350,000,000
Subtotal	$ 370,000,000
Interest rate	8.00%
Loan length (years)	30
Annual Principal & Interest payment	$ 32,866,150
Average annual interest payment	

Potential Annual Revenues & Expenses in a New Ballpark in 2003

	Projected Revenues/Costs (000s)	Data found in section:
Team Revenues		
Ticket Sales	$28,305	3.1.2
Luxury Suites	$6,000	3.4.2
Club Seats	$7,500	3.4.2
Local Media	$7,320	3.2.2
Concession, Catering	$10,000	3.4.2
Merchandise	$10,000	3.4.2
National broadcast revenue	$24,401	3.2.2
Other*	$5,000	
Naming Rights	$2,136	3.3.2
Advertising	$6,000	3.4.2
SUBTOTAL	**$106,662**	
Annual Operations		
Team Operations (salaries)	$46,800	5.3
Minor Leagues	$13,000	
Stadium Operations	$11,000	5.2
Major League Central Fund	$6,000	
Team Administration*	$14,000	
Advertising*	$3,000	
Signing Bonuses*	$5,000	
Ballpark Construction Loan	$32,866	6.1
SUBTOTAL	**$131,666**	
AVAILABLE ANNUAL REVENUE	($25,004)	

Return on Investment Analysis

- Assumptions:
- MARR = i1 = 8%
- Inflation rate = g1 = 2%
- Rate of revenue increase = g2 = 13%



Return on Investment Analysis

- The construction loan will be a constant annual expense of $32,866 for the stadiums 30-year life.
- The first year's revenues (A1) are: $106,662.
- The first year's expenses excluding the loan (A1) are: $ 98,800.
- We calculate for year 5 (2009) using the geometric gradient series present worth formula:

REVENUE **EXPENSES**

- **NPV** = A x (P/A1, g2, i1, N) – A x (P/A1, g1, i1, N) – AE x (P/A, i1, N)

= $106,662 x (P/A1, 13%, 8%, 5) – $9,880 x (P/A1, 2%, 8%, 5) – $32,866 x (P/A1, 8%, 5)

= $1,139.83 > 0

Return on Investment Analysis

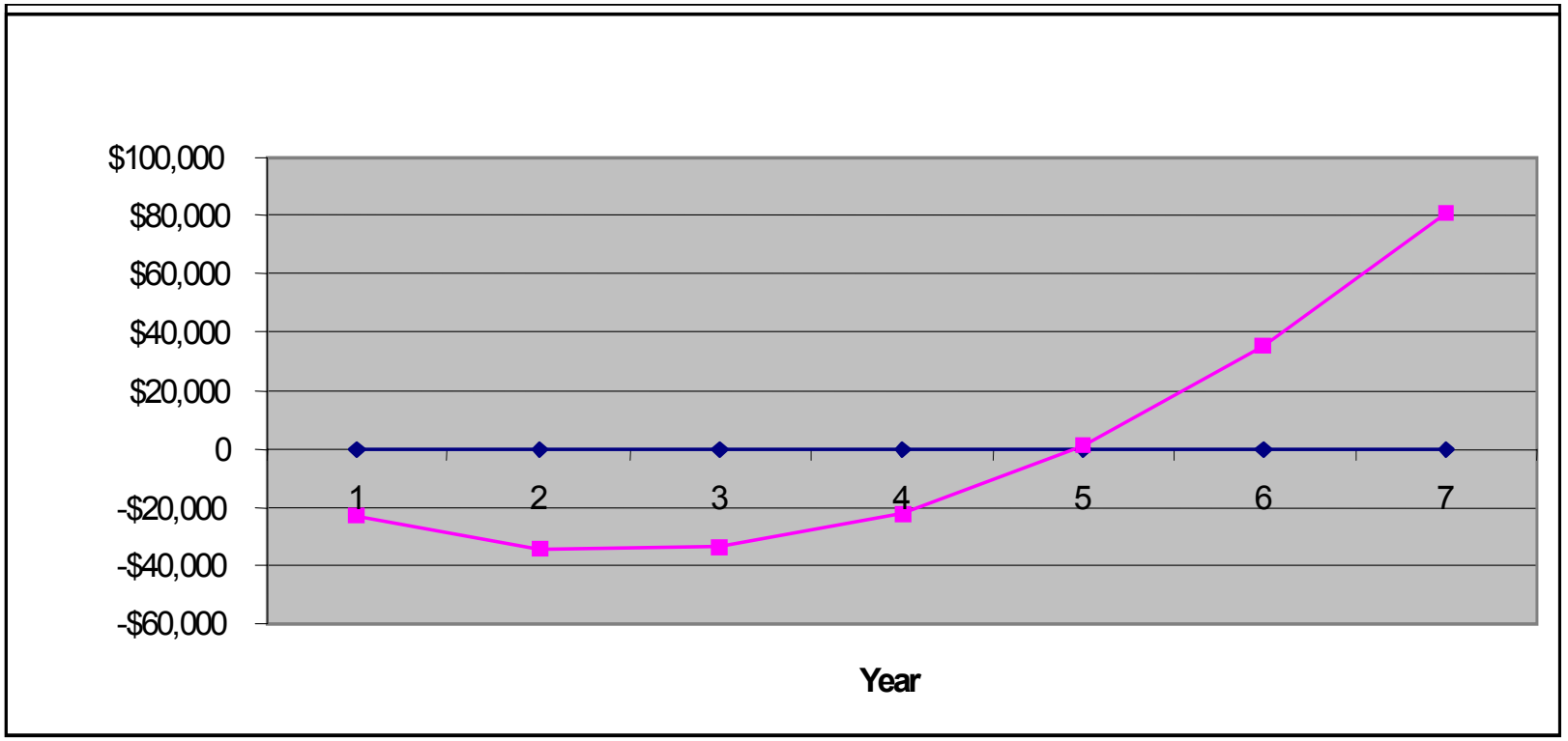
- The NPV is greater than 0 in 2009, so after 2009 the project will return profit.

Year	2004	2005	2006	2007	2008	2009	2010
NPV($,000)	-$23,151	-$34,394	-$33,966	-$22,067	$1,140	$35,527	$81,001

If we use an MARR of 20%, NPV turns positive ($10,154) at year 6 (2010).

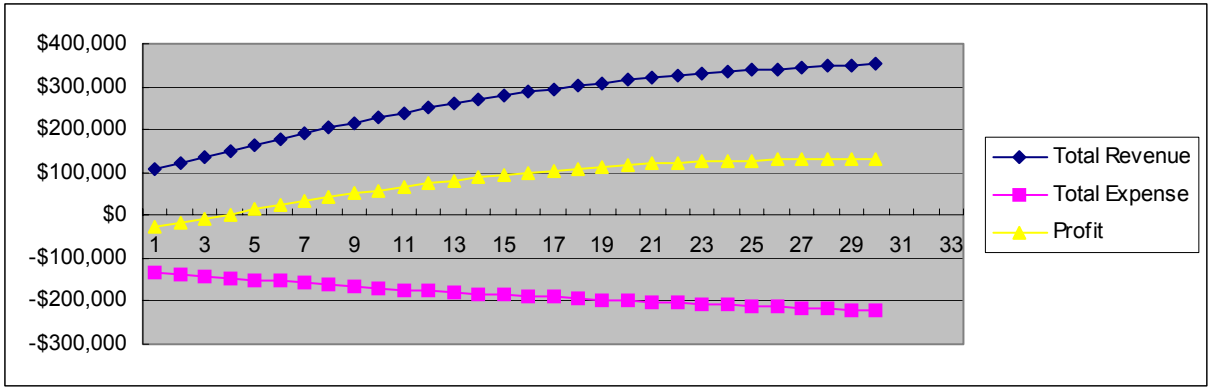
Return on Investment Analysis

- **NPV based on constant revenue growth rate of 13%, constant inflation rate of 2%, MARR = 8%,**

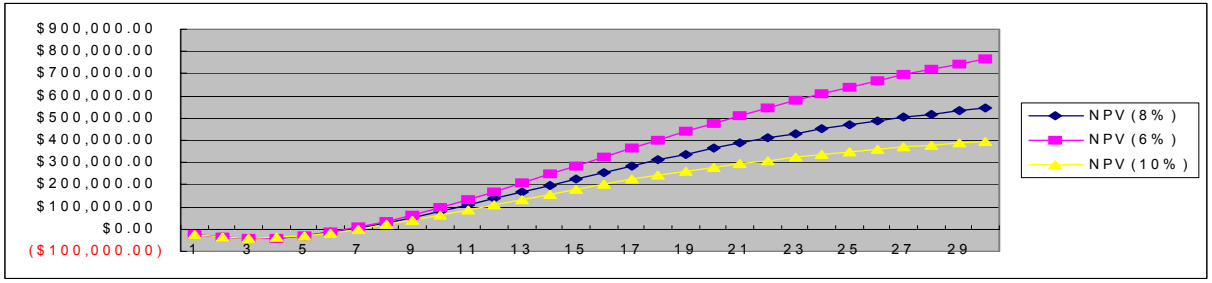


Return on Investment Analysis

- **Total Revenue, Total Expense and Profit based on decreasing revenue growth rate, decreasing salary growth rate**



Net Present Values with MARR 6%, 8%, and 10% based on decreasing revenue growth rate, decreasing salary growth rate



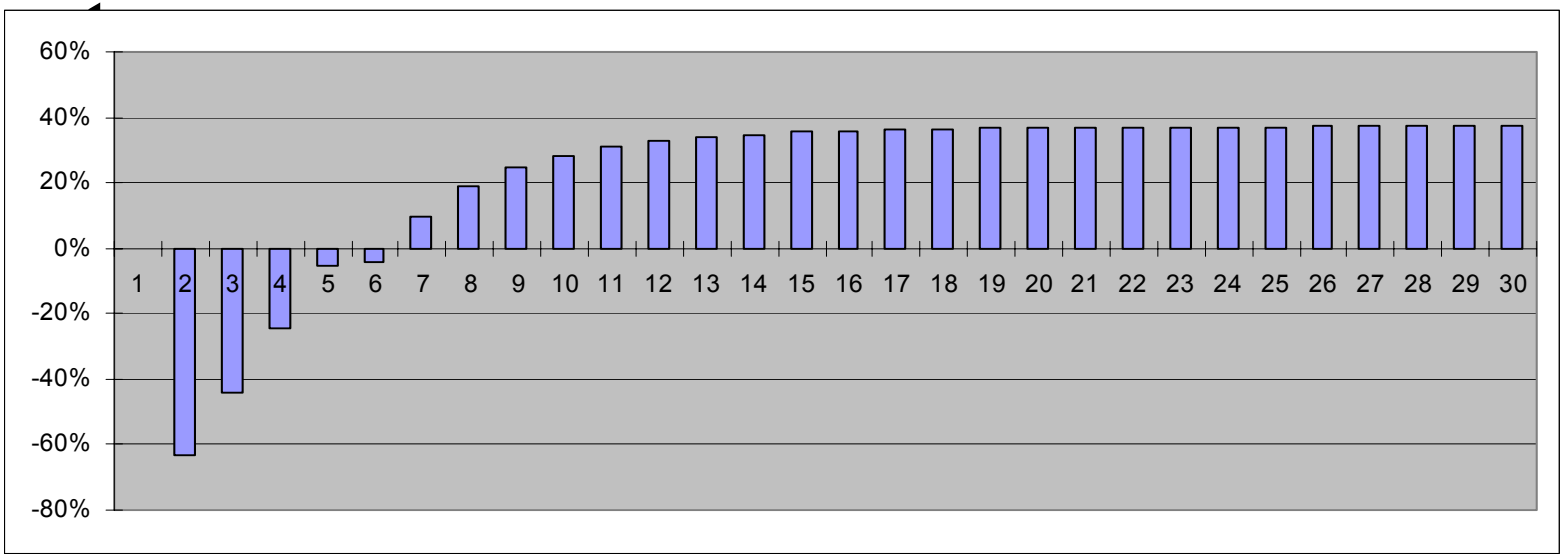
Return on Investment Analysis

- In order to generate a more realistic forecast, we modify our assumptions:

1. As a result of market maturation, the revenue growth rate diminishes by 10% per year.
2. We assume a 10% yearly decrease in the growth rate of the players' salaries that has been increasing by an average of 7.7% annually.
3. Other expenses except loan will experience 2% inflation

Return on Investment Analysis

- **IRR based on decreasing revenue growth rate, decreasing salary growth**



The Franchise Pays

- Is it so hard for team owner to find investors?
- Example is the $345-million Pacific Bell Park in San Francisco, home of the MLB Giants. This stadium is owned by the Giants organization.

The General Public Pays

- Publicly Owned, Publicly Financed Stadium
- Privately Owned, Publicly Funded Stadiums
- Some combination of public and private money