

Mega-Events: Is the Texas-Baylor game to Waco what the Super Bowl is to Houston?

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This Study

- Focuses on sales tax revenues and taxable sales
- Estimate additional net sales tax revenue for additional event
- Allow for different impacts for each sport

This Study

■ Events investigated:

- ▶ MLB - regular season, post season, World Series, All Star Game
- ▶ Football - college and professional regular season, post season
- ▶ NBA basketball - regular season, post season, All Star game
- ▶ NHL - regular season, post season, All Star Game
- ▶ Soccer - MLS regular season, post season, international games, World Cup
- ▶ Auto racing: NASCAR and IRL events

MLB regular season games

- \$21,000 net increase in sales tax revenue per game
 - ▶ Significant at 5% level
 - ▶ About \$1,701,000 in new sales tax revenue over 81 game season
- \$360,000 net increase in taxable sales
 - ▶ Significant at 1% level
 - ▶ About \$29,160,000 in new taxable spending over 81 game season
 - ▶ In Arlington (TX) - about 0.73% of Arlington economy

MLB post-season games

■ MLB Playoff game

- ▶ \$347,000 net increase in sales tax revenue
- ▶ \$5,587,000 net increase in taxable sales
- ▶ Significant at 1% level

■ World Series game

- ▶ \$392,000 net increase in sales tax revenue
- ▶ \$11,606,000 net increase in taxable sales
- ▶ Significant at 1% level

MLB All-Star Game

- Not statistically significant at any conventional level
- \$189,000 net reduction in sales tax revenue
- \$1,897,000 net reduction in taxable sales

The Rest of the Literature

■ General

- ▶ Sports as economic development strategy
- ▶ Focus generally on income and job creation
- ▶ Little evidence of success
 - Events tend to move spending around without increasing it
 - Events tend to move income from high propensity to low propensity to spend individuals

Mega-events Investigated

- Super Bowls
- Olympics
- March Madness (NCAA Basketball Tournament)
- All Star Games

- Baade and Matheson (2001)
 - ▶ Studied all cities that hosted MLB All Star game from 1973 to 1997
 - No effect on employment (annual data)
 - ▶ Studied three California hosts for effect on taxable sales
 - No effect on taxable sales (quarterly data)
 - All estimates negative but insignificant
 - ▶ “Cities would be wise to view with caution the All-Star Game economic impact estimates provided by MLB.”

MLB All Star Game (continued)

■ Coates (2006)

- ▶ No net effect of the 2004 Houston All Star Game on sales tax revenues in Houston proper (monthly data).
- ▶ Estimates negative but not significant

■ Coates and Depken

- ▶ No net effect of either the Houston or the Arlington All Star games on sales tax revenues in actual host city (monthly data).

MLB World Series

- Baade and Matheson (2008)
 - ▶ Not statistically significant
 - ▶ Estimate is about \$6.8 million per home game
- Coates and Humphreys (2002)
 - ▶ Found no effect of playoff or World Series appearance on income per capita in SMSA
- Coates and Depken
 - ▶ See above

Coates and Depken: Econometric Model

$$TaxRev_{it} = \alpha_i + \lambda_i TIME_{it} + \beta EVENTS_{it} + \delta X_{it} + \epsilon_{it}$$

$$\Delta TaxRev_{it} = \lambda_i + \beta \Delta EVENTS_{it} + \delta \Delta X_{it} + v_{it}$$

- Monthly sales tax collections January 1990 through June 2007
- 23 cities in Texas
- Sports events in each city in each month

Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Real Tax Revenue	4504	4,293,735	6,827,497	2,211.097	4.76e+07
Δ Real Tax Revenue	4504	122,397.1	645,043.8	-7,620,600	5,734,830
Taxable Real Activity	4504	5.74e+07	9.29e+07	26801.18	6.44e+08
Δ Real Activity	4504	1211545	8540764	-1.05e+08	7.08e+07
Local Tax Rate	4504	7.62	0.37	7.25	8.25

Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
NCAA Reg. Season	836	1.38	0.99	1.00	8.00
NCAA Bowl	59	1.00	0.00	1.00	1.00
NFL Reg. Season	120	1.96	0.67	1.00	4.00
NFL Playoff	9	1.22	0.44	1.00	2.00
Super Bowl	2	1.00	0.00	1.00	1.00
NBA Reg. Season	320	6.63	1.92	1.00	11.00
NBA Playoff	60	3.06	1.97	1.00	8.00
NBA All Star	2	1.00	0.00	1.00	1.00
NBA Finals	7	2.85	0.89	2.00	4.00

Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
MLB Reg. Season	219	12.72	3.29	1.00	19.00
MLB All Star	2	1.00	0.00	1.00	1.00
MLB Playoff	10	2.10	1.60	1.00	5.00
World Series	1	2.00	0.00	2.00	2.00
NHL Reg. Season	88	5.80	1.98	1.00	9.00
NHL Playoff	17	3.17	1.70	1.00	6.00
NHL Finals	2	3.00	0.00	3.00	3.00
MLS Reg. Season	88	2.20	0.77	1.00	4.00
MLS Playoff	12	1.16	0.39	1.00	2.00
MLS Championship	2	1.00	0.00	1.00	1.00
International Soccer	9	2.77	1.20	1.00	4.00
NASCAR/IRL Races	59	2.00	0.26	1.00	3.00
Political Convention	1	1.00	0.00	1.00	1.00

Estimation Results

Variable	Δ TaxRevenue	Δ TaxRevenue	Δ Activity	Δ Activity
NCAA Reg. Season	52,051**	-26,955	503,694	-296,950
DI-A Conf. \times NCAA Reg. Season		275,138***		2,481,327***
NCAA Bowl Game	-1,091,412***	-1,230,332***	-12,144,626***	-16,050,363***
NFL Reg. Season	-434,960***	-415,078***	-6,456,795***	-6,024,068***
NFL Playoff	-403,689***	-382,614**	-5,796,681***	-5,545,165***
Super Bowl	2,755,508***	2,769,822***	31,392,083***	33,113,485***
NBA Reg. Season	-26,215**	-27,842**	-311,980*	-331,677*
NBA Playoff	-124,384***	-123,925***	-1,707,006***	-1,697,854***
NBA All-star Game	881,866***	834,149***	23,011,340***	19,397,123***
NBA Finals	36,053	48,196	602,977	1,444,976*
MLB Reg. Season	23,241**	21,210**	421,022***	360,074***
MLB Playoff	314,633***	347,134***	5,780,226***	5,587,183***
MLB All-star Game	-176,004	-189,289	-1,496,866	-1,897,295
World Series	651,331***	391,897*	16,239,234***	11,605,842***
NHL Reg. Season	23,463*	23,543*	371,009*	333,104*
NHL Playoff	139,243***	136,605***	2,114,568***	1,903,065***
NHL Finals	364,053***	364,160***	4,757,860**	4,843,056***

Estimation Results

Variable	Δ TaxRevenue	Δ TaxRevenue	Δ Activity	Δ Activity
MLS Reg. Season	230,514***	230,621***	1,827,066***	2,194,186***
MLS Playoff	733,543***	752,388***	8,504,383***	9,049,714***
MLS Championship	24,431	30,878	-1,264,366	-655,845
International Soccer	36,683	28,205	1,244,407*	911,120
NASCAR/IRL Race	126,395**	116,839**	1,690,781**	1,342,977
Political Convention	-1,486,581***	-1,400,471***	-19,909,963***	-19,369,676***
Tax Rate	16032015***	16,576,074***	26,8918,281***	28,6447,140***
DI-A Conf. \times Tax Rate		233,979*		21,568,901***
Tax Rate Squared	-993,062***	-1,021,122***	-17,558,957***	-18,204,983***
DI-A Conf. \times Tax Rate Squared		-33,784**		-2,830,132***
Time Trend	14,513***	16,207***	25,762	140,052**
Houston Time Trend	1,602,298***	1,643,703***	8,050,279***	12,006,683***
Constant	-235,044***	-243,225***	-2,439,875***	-2,673,009***
Observations	4504	4504	4504	4504
Number of cities	23	23	23	23
R^2	0.22	0.23	0.15	0.18

Conclusions

- Regular season, playoff, and World Series games are associated with a net increase in spending and sales tax revenue
- Does new revenue pay for host-city provided services?
 - ▶ Beautification
 - ▶ Police and emergency services
 - ▶ Sanitation

Conclusions

- All Star Games do not correspond to a net increase in spending or sales tax revenues.
- Commissioner Selig recently told St. Petersburg that if a new stadium is built, then an All-Star game will be held there.
- Perhaps the response should be, “Thanks, but we’ll build a stadium and you can keep the All Star Game.”