# Impact of Casinos on Retail Sales in Mid-Size Iowa Cities

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Casinos have long been promoted as engines of economic development.  This paper seeks to test this claim by comparing the growth rate in taxable retail sales between mid-size Iowa cities with a casino and those without a casino.

To best isolate the impact of the variable being studied, the presence or absence of a casino, the authors limited their study to mid-size, stand-alone (non-suburban) cities.  Iowa was chosen because, as the first state to allow widespread casino operations in recent history, it offers the longest study period for analysis.

Taxable retail sales were selected as a proxy measure of overall economic activity because they are reliably collected and easily available by city for analysis.  The data for this study came from Iowa Department of Revenue and Finance, Office of Social and Economic Trend Analysis, available on-line at http://www.seta.iastate.edu/select/geography.aspx?limit= 1&level=city&loc=/retail/retail_city.aspx?].

Table I provides the basic data for the years 1996 - 2004, with the cities grouped by whether or not they have a casino as of 2004.

Table 2 presents the average of the annual rate of growth of retail sales for each mid-size Iowa city (population 20,000 to 50,000) for the entire period, which was used to test the

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following hypothesis: Having a casino in a city improves the rate of growth of retail sales in general and therefore positively impacts the economic development of the city.

While this is a small sample, the mean annual rate of growth of retail sales from 1996 to 2004 in the four cities with a casino, 0.6%, is strikingly lower than that of the six cities without a casino, 3.4%. This result is also seen in subsets of the period: 1996 to 2000 shows a difference of 1.4% growth for casino cities versus 5.0% growth for non-casino cities; 2001 to 2004 shows a difference of −1.0% growth for casino cities versus 1.9% growth for non-casino cities.

Using a two-tailed t-test on the difference between the means, the difference between the two groups is significant at the one percent level (0.66 percent), over the entire period. In other words, such a difference could be expected to happen by chance less than one time in a hundred, meeting the highest standard of statistical significance common in social science research. The 0.66 percent significance level appears unequivocal regarding the negative impact of a casino on retail sales in the city. Therefore, this study concludes that the operation of a casino in a mid-size city, far from contributing to economic development, creates a measurable drain on the economy of the city.

Within the sample data, Ottumwa provides a mini-sample verification of the study result. Unlike the other cities, where casinos opened in the mid-1990's, the casino in Ottumwa did not open until 2001. The average growth in retail sales in Ottumwa from 1996 to 2001, 2.9%, dropped to −0.9%, from 2001 to 2004, after the opening of a casino.

Issues for future research:

Would similar results be found if the study were extended to mid-size cities in other states?

How can the impact of a casino on retail sales within a larger metropolitan area (like Omaha-Council Bluffs or Des Moines and its suburbs) be isolated for study when a broader array of other economic forces enters the picture and the data may be divided by city or state borders, while the retail area can be considered the total urban/suburban region?

What other factors in each mid-size city may contribute to its retail sales growth rate? Can any generalizations be made that might provide alternate explanations? (For example, the impact of 'having a major university' is so different for Ames and Iowa City; and casino cities Clinton and Burlington are on the Mississippi River but so is non-casino city Muscatine.)

What other data could be used to measure the impact of casinos on economic development in a specific region?

# Figure 1

# Table 1

## Taxable Retail Sales of Iowa Cities 20,000-50,000 population
## 1996-2004

| Casino? | City | _____Retail sales ($000,000)_____ | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
| No | Ames | $438.28 | $475.21 | $517.59 | $565.74 | $600.70 | $585.01 | $597.33 | $624.23 | $636.84 |
| No | Muscatine | $216.36 | $227.18 | $244.99 | $264.09 | $272.54 | $286.76 | $285.41 | $291.64 | $309.22 |
| No | Fort Dodge | $360.74 | $367.71 | $389.18 | $440.20 | $438.23 | $441.35 | $432.82 | $413.50 | $422.91 |
| No | Cedar Falls | $293.81 | $305.67 | $326.76 | $320.33 | $341.77 | $352.83 | $364.35 | $390.86 | $396.58 |
| No | Iowa City | $657.68 | $677.73 | $701.14 | $733.40 | $756.05 | $780.59 | $766.90 | $776.69 | $854.16 |
| No | Mason City | $417.85 | $442.06 | $450.86 | $464.21 | $474.90 | $473.22 | $462.93 | $463.59 | $474.82 |
| **Yes** | **Ottumwa** | $255.46 | $263.12 | $280.48 | $279.53 | $285.90 | $292.53 | $285.93 | $288.22 | $284.74 |
| **Yes** | **Marshalltown (near)** | $298.89 | $299.55 | $310.14 | $321.77 | $323.78 | $309.65 | $333.74 | $326.68 | $315.71 |
| **Yes** | **Clinton** | $263.47 | $272.74 | $268.68 | $279.79 | $280.30 | $316.73 | $301.04 | $284.79 | $286.45 |
| **Yes** | **Burlington** | $275.48 | $282.77 | $259.56 | $269.41 | $270.70 | $266.96 | $253.67 | $262.30 | $264.14 |

Data Source: Iowa Department of Revenue and Finance
Office of Social and Economic Trend Analysis
http://www.seta.iastate.edu/select/geography.aspx?limit=1&level=city&loc=/retail/retail_
city.aspx?

**Table 2**

**Average Annual Rate of Growth of Taxable Retail Sales,
Iowa Cities 20,000 to 50,000 population**

| City | 1996-2004 | 1996-2000 | 2001-2004 |
|---|---|---|---|
| Non-Casino | | | |
| Ames | 4.8% | 8.2% | 2.9% |
| Muscatine | 4.6% | 5.9% | 2.5% |
| Fort Dodge | 2.0% | 5.0% | -1.4% |
| Cedar Falls | 3.8% | 3.9% | 4.0% |
| Iowa City | 3.3% | 3.5% | 3.0% |
| Mason City | 1.6% | 3.3% | 0.1% |
| Average | 3.4% | 5.0% | 1.9% |
| Casino | | | |
| Ottumwa | 1.4% | 2.9% | -0.9% |
| Marshalltown | 0.7% | 2.0% | 0.6% |
| Clinton | 1.1% | 1.6% | -3.3% |
| Burlington | -0.5% | -0.4% | -0.4% |
| Average | 0.6% | 1.5% | -1.0% |
| t-Test | 0.0066 | 0.0140 | 0.0519 |

## Annual Increase in Retail Sales

| City | 1996-97 | 1997-98 | 1998-99 | 1999-00 | 2000-01 | 2001-02 | 2002-03 | 2003-04 | Average % Increase |
|---|---|---|---|---|---|---|---|---|---|
| Non-Casino | | | | | | | | | |
| Ames | 8.4% | 8.9% | 9.3% | 6.2% | -2.6% | 2.1% | 4.5% | 2.0% | 4.9% |
| Muscatine | 5.0% | 7.8% | 7.8% | 3.2% | 5.2% | -0.5% | 2.2% | 6.0% | 4.6% |
| Fort Dodge | 1.9% | 5.8% | 13.1% | -0.4% | 0.7% | -1.9% | -4.5% | 2.3% | 2.1% |
| Cedar Falls | 4.0% | 6.9% | -2.0% | 6.7% | 3.2% | 3.3% | 7.3% | 1.5% | 3.9% |
| Iowa City | 3.0% | 3.5% | 4.6% | 3.1% | 3.2% | -1.8% | 1.3% | 10.0% | 3.4% |
| Mason City | 5.8% | 2.0% | 3.0% | 2.3% | -0.4% | -2.2% | 0.1% | 2.4% | 1.6% |
| **Casino** | | | | | | | | | |
| **Ottumwa** | 3.0% | 6.6% | -0.3% | 2.3% | 2.3% | -2.3% | 0.8% | -1.2% | 1.4% |
| **Marshalltown** | 0.2% | 3.5% | 3.7% | 0.6% | -4.4% | 7.8% | -2.1% | -3.4% | 0.8% |
| **Clinton** | 3.5% | -1.5% | 4.1% | 0.2% | 13.0% | -5.0% | -5.4% | 0.6% | 1.2% |
| **Burlington** | 2.6% | -8.2% | 3.8% | 0.5% | -1.4% | -5.0% | 3.4% | 0.7% | -0.4% |

**Chart 1**

# Average Annual Growth in Taxable Retail Sales, 1996-2004



Without casino, 3.40%

With casino, 0.60%
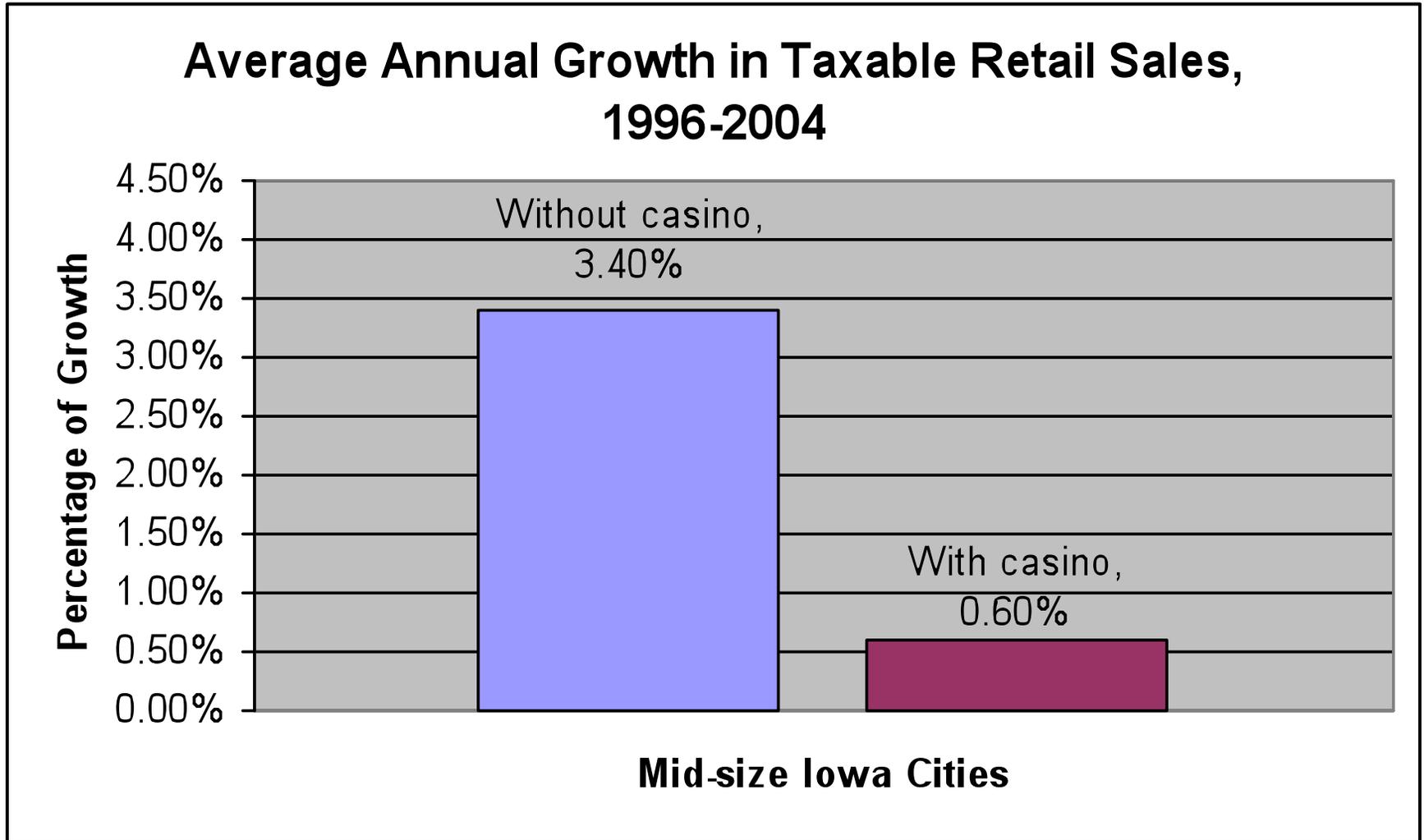
Percentage of Growth

Mid-size Iowa Cities

# Chart 2

## Average Annual Growth in Taxable Retail Sales, Iowa Cities population 20,000 to 50,000



*City with a casino

**1996-2004**

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