

WHERE THE FUN RUNS DEEP



RIVERFEST 2009

**STUDY OF RIVERFEST IMPACTS
ON GROSS TAX RECEIPTS OF
RESTAURANTS AND LODGING
ESTABLISHMENTS**



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COLLEGE OF BUSINESS

Study of Riverfest Impacts on Gross Tax Receipts of Restaurants and
Lodging Establishments: 1998-2008

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By

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Abstract: Local residents may forego spending at local businesses during Riverfest. While out of town visitors to Riverfest inject expenditures into the Little Rock economy. The net gain or loss of business revenues derived from these expenditures is at the core of the question of whether Riverfest has a positive or negative effect on local business activities. This study analyzes ten years of restaurant and lodging gross tax receipts to determine how Riverfest affects these tax flows. This study did not find evidence that June's restaurant or lodging gross tax receipts were relatively lower than other months. What it found was a seasonality pattern in the tax data. June's gross tax receipts were among the highest of all month's tax receipts for both restaurants and lodging establishments.

Riverfest Incorporated asked the Institute for Economic Advancement (IEA) to investigate the effects of Riverfest on business activities in Little Rock. Many businesses in the Little Rock area have expressed concerns that Riverfest activities hurt their businesses, especially the food and drink establishments that compete with the many food and drink vendors at Riverfest.

Riverfest attracts a lot of people to the three days of events. For the 2009 Riverfest, admissions totaled 82,040.¹ Many of these attendees live in Little Rock, but many come from outside the Little Rock area. In survey of visitors to Riverfest 2009 by IEA it was found that from the 82,040 admission, 6,153 came from other states, 43,317 were residents of Pulaski County, and 32,570 lived in Arkansas but not in Pulaski County.

These people spend a lot of money during Riverfest. The Riverfest survey of 2009 enquired about the spending plans of out of town visitors. The survey findings are shown in the accompanying table. Out of town visitors indicated that they intended to spend \$1.6 million during Riverfest. A substantial amount of this intended spending is for lodging (\$454 thousand) and at restaurants (\$349 thousand). Since these figures are based on the intention of the attendees as they entered Riverfest, actual spending at the

¹ G. Hamilton, M. Halebic, and A. Wiley. Riverfest 2009, Survey Findings and Economic Impact Study, Institute for Economic Advancement, University of Arkansas at Little Rock, December 2009, #09-10.

event could be substantially different. Nevertheless, out of town visitors bring a potentially substantial revenue flow to local businesses when they attend Riverfest.

Table 6: Estimated Spending by Out of Town Visitors							
Visitors from Arkansas Outside Pulaski County							
	Restaurants	Grocery Stores	Retail Stores	Merchandise	Fuel	Hotel/Motel	Total
Survey Finding	\$5,228	\$617	\$3,261	\$3,884	\$6,653	\$5,247	\$24,890
Average Spending Per Group	\$22.15	\$2.61	\$13.82	\$16.46	\$28.19	\$22.23	\$105.47
Number of Groups	28,486	28,486	28,486	28,486	28,486	28,486	170,917
% Groups from AR outside Pulaski County	38%	38%	38%	38%	38%	38%	
Estimated Intended Expenditure	\$239,795	\$28,300	\$149,574	\$178,149	\$305,156	\$240,667	\$1,141,641
Visitors from Outside Arkansas							
	Restaurants	Grocery Stores	Retail Stores	Merchandise	Fuel	Hotel/Motel	Total
Survey Finding	\$2,421	\$490	\$696	\$407	\$2,840	\$4,728	\$11,582
Average Spending Per Group	\$29.52	\$5.98	\$8.49	\$4.96	\$34.63	\$57.66	\$141.24
Number of Groups	28,486	28,486	28,486	28,486	28,486	28,486	170,917
% Groups from Outside AR	13%	13%	13%	13%	13%	13%	
Estimated Intended Expenditure	\$109,335	\$22,129	\$31,432	\$18,380	\$128,257	\$213,521	\$523,054
Out of Town Visitors							
	Restaurants	Grocery Stores	Retail Stores	Merchandise	Fuel	Hotel/Motel	Total
Total	\$349,130	\$50,429	\$181,006	\$196,530	\$433,413	\$454,187	\$1,664,695

Riverfest Inc. vendor fees are based on vendor's gross receipts. Therefore, they have accurate records of Vendor's revenues. The accompanying table shows three years of actual vendor revenues as provided by Riverfest Inc.² As can be seen they do not match precisely the intended expenditure amounts.

Vendor's Revenues	Riverfest 2009	Riverfest 2005	Riverfest 2000
Beer	\$452,490	\$464,416	\$193,586
Soft Drinks	\$130,728	\$127,708	\$75,038
Food Income	\$436,126	\$75,038	\$315,300
Total Food and Beverages	\$1,019,344	\$667,162	\$583,924
Merchandise	\$38,154	\$17,000	\$28,201
Misc. Vendors	\$38,800	\$132,777	
Total	\$1,096,297	\$816,939	\$612,125

Local residents who attend Riverfest may forego spending at local businesses and instead trade with the Riverfest vendors. Locals residents may also seek to avoid the crowds at Riverfest and forego expenditures during the event. In either case, local businesses lose some local resident's business because of Riverfest. Whether this loss of expenditures offsets the gains of expenditures from out of town visitors is an empirical matter. The net gain or loss of business revenues is at the core of the question of whether Riverfest has a positive or negative effect on local business activities. That is, do the

² Riverfest, Inc. 500 President Clinton Avenue, Suite 217, Little Rock, AR 72201.

expenditures at local businesses by the out of town visitors to Riverfest offset the loss of expenditures by local residents at local businesses because of Riverfest?

Data and Method

Currently, there are no direct ways to access the revenue gains and revenue losses to local businesses because of Riverfest. This requires a survey of local businesses that would enable a comparison of revenue during the Riverfest to revenue flows at other times. Tax receipts provide an alternative indirect means to access the revenue impacts of Riverfest.

The Little Rock Convention and Visitors Bureau provided IEA with 10 years of monthly gross taxable receipts data for fast food and other restaurants, plus lodging gross taxable receipts.³ This data are collected monthly from establishments in Little Rock. The reporting period for the gross tax receipts period follows a month after collection of the taxes by the restaurants and lodging establishment. That is, there is a month delay between the collections of the taxes and the reported amount in the data set. Taxes from the Riverfest activities are collected in separate accounts and are not included in the gross tax receipts of restaurants and lodging establishments.

The availability of the gross taxable receipts data limits this study. Instead of investigating net effects of Riverfest on local business revenues, the availability of the data restricts the analysis to lodging establishments and restaurant types of businesses. If Riverfest adversely affected local business activities by reducing their revenues, gross taxable receipts would decline. Monthly gross taxable receipts should then dip in June to reflect the reduced activities in May, the month of Riverfest.

Several caveats need to be made for this to be true. There may be seasonal patterns in the data and if this is true, the data need to be adjusted to account for this factor. Over the ten years of data, prices have risen for lodging and at restaurants and these increases have affected gross taxable receipts.

To account for seasonality and rising prices, the data used in the study were converted into index numbers. This index was constructed by dividing each year's monthly data point by June's gross taxable receipts and then multiplying by 100. This adjustment converted the data to a June base (June = 100) and made changes relative to the June values. Month to month changes would then be relative to June. For example, if October's index number for Lodging was 105.9 in 2008, then lodging gross taxable receipts were 5.9% ($= (105.9 - 100) / 100\%$) higher than the June number.

For Riverfest to adversely effect local businesses, gross taxable receipts should dip in June. This would reflect a reduction in taxable restaurant and lodging expenditures in May. In terms of the index numbers, the other index numbers should then be relatively

³ Little Rock Convention and Visitors Bureau. 426 West Markham, Little Rock, 72201.

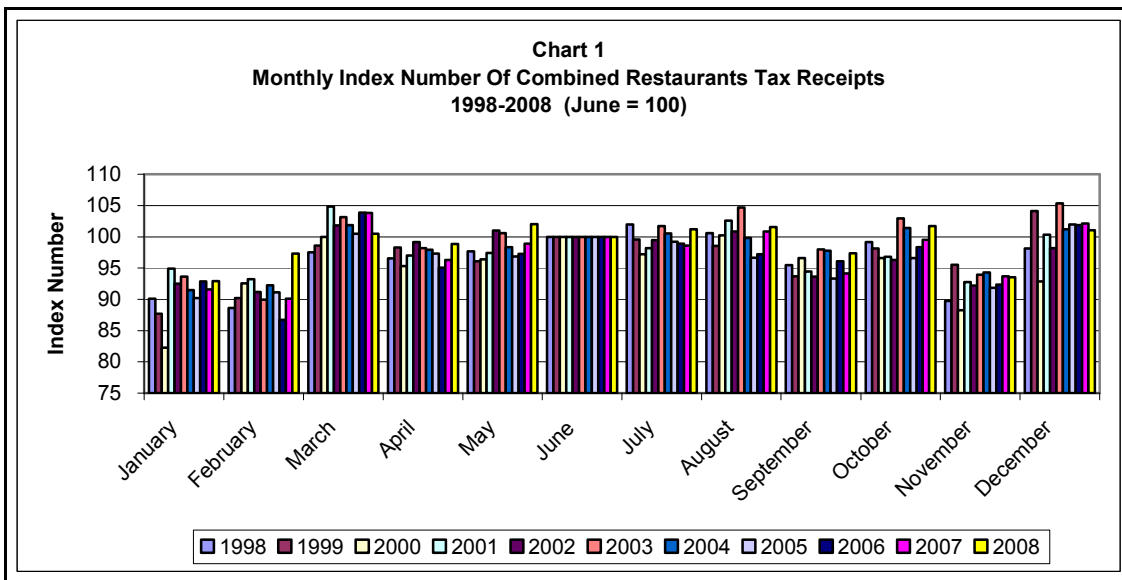
higher than the June number. On the other hand, if the June index number proved higher than other months this would indicate increase lodging and restaurants revenues in May. Presumably, these would be consequences of Riverfest activities in May.

Findings

This study analyzed combined restaurant gross tax receipts and lodging gross tax receipts separately. The month to month index numbers were tested to discover whether there were meaningful differences between the values relative to the June value. The idea of the test was that if no significant differences were found between the monthly index numbers then there were no significant differences in monthly gross tax receipts. This would mean that monthly gross tax receipts data did not indicate that Riverfest had an effect on revenue flows to local restaurants and lodging businesses. The findings from these tests are summarized below.

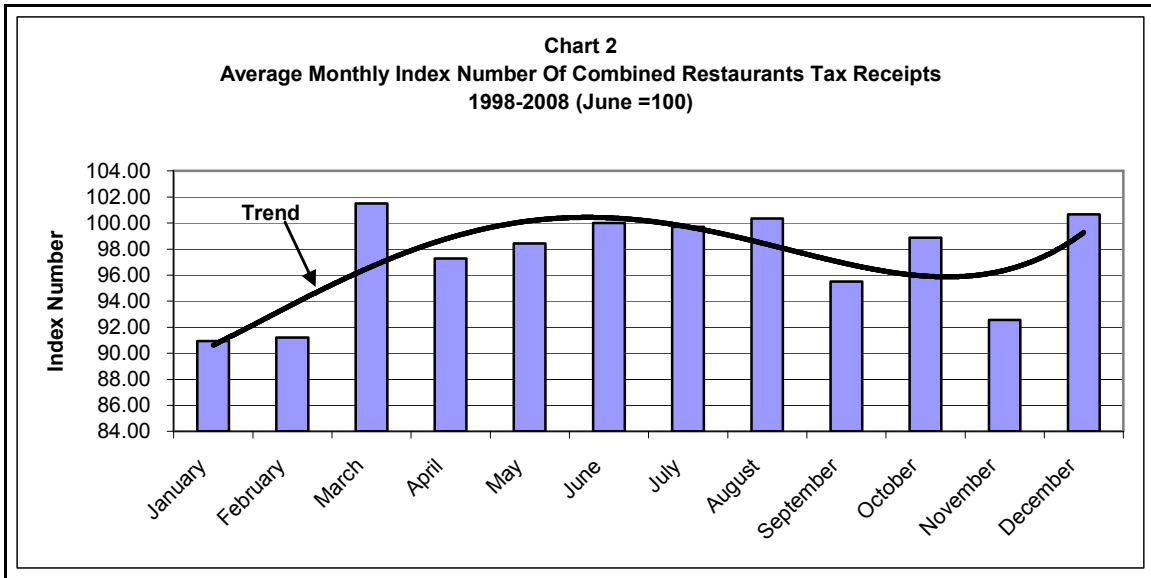
Findings for Combined Restaurant Gross Tax Receipts

Chart 1 shows the ten years of monthly index numbers computed from the combined restaurants gross tax receipts. June's index numbers are always 100, and the values of the other monthly index numbers are relative to the June number. A month that has an index number greater than 100 has gross tax receipts in excess of the June number, and months with index numbers less than 100 have gross receipts less than the June number.



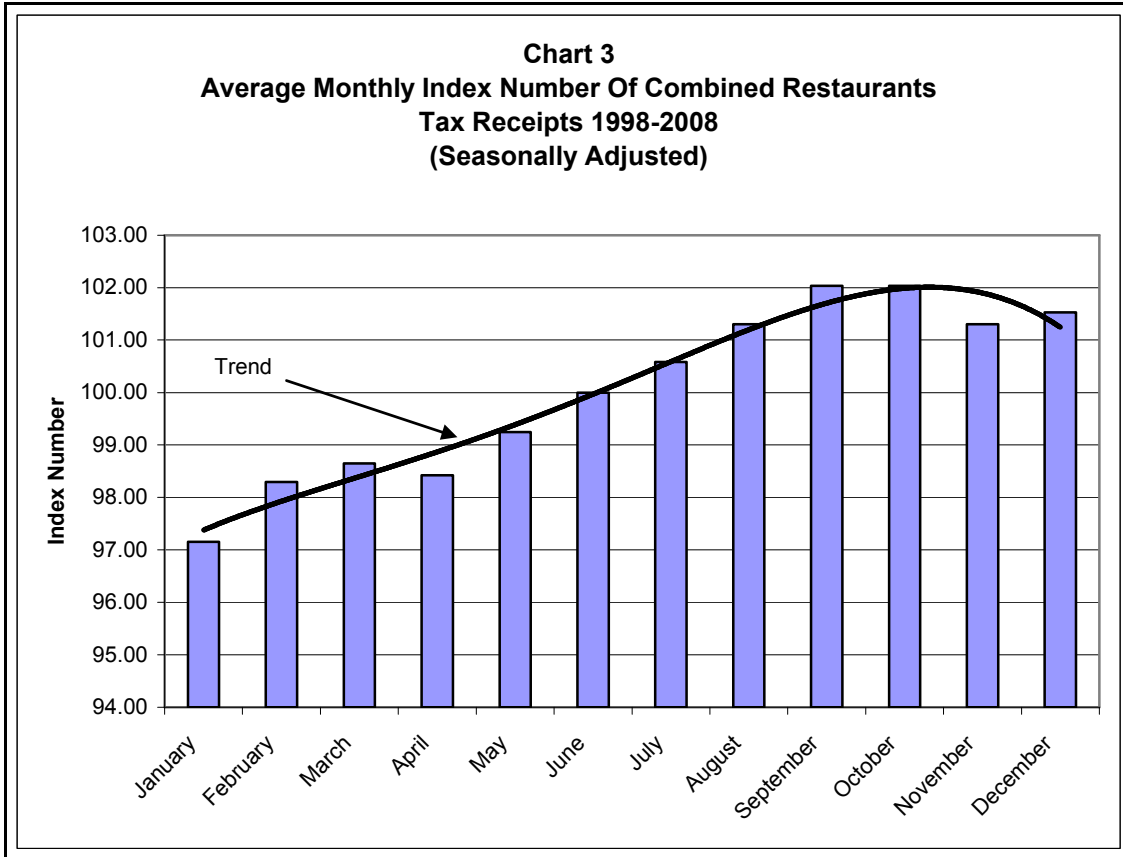
Recalling that tax receipts are from the spending in the previous month, the chart shows that June's tax receipts (May's expenditures) are consistently among the highest.

Chart 2 plots the average monthly index numbers for the 10-year period. As shown in this chart, March, August, and December tax receipts (February, July, and November's expenditures) are the only months that exceed June's tax receipts.



The trend line indicates a seasonal pattern especially if the March peak is excluded since it likely reflects February’s Little Rock Marathon activities. In general, tax receipts start the year low and grow over the winter and spring months. June begins the summer and the high month for tax receipts. Riverfest activities could be viewed as the beginning of this high tax receipt season. After summer, tax receipts decline through the fall. They peak again for the Christmas season. Riverfest does not appear to be associated with a reduction in gross tax receipts for combined restaurants. There is no evidence in this data that in the aggregate restaurants are losing business because of Riverfest.

Chart 3 reproduces Chart 2 using seasonally adjusted data. The deseasonalized data give further support to the idea that Riverfest marks the beginning of the summer high tax receipts period. Tax receipts begin to rise with April’s collections and continue to rise, reaching peaks with the August and September’s collections.



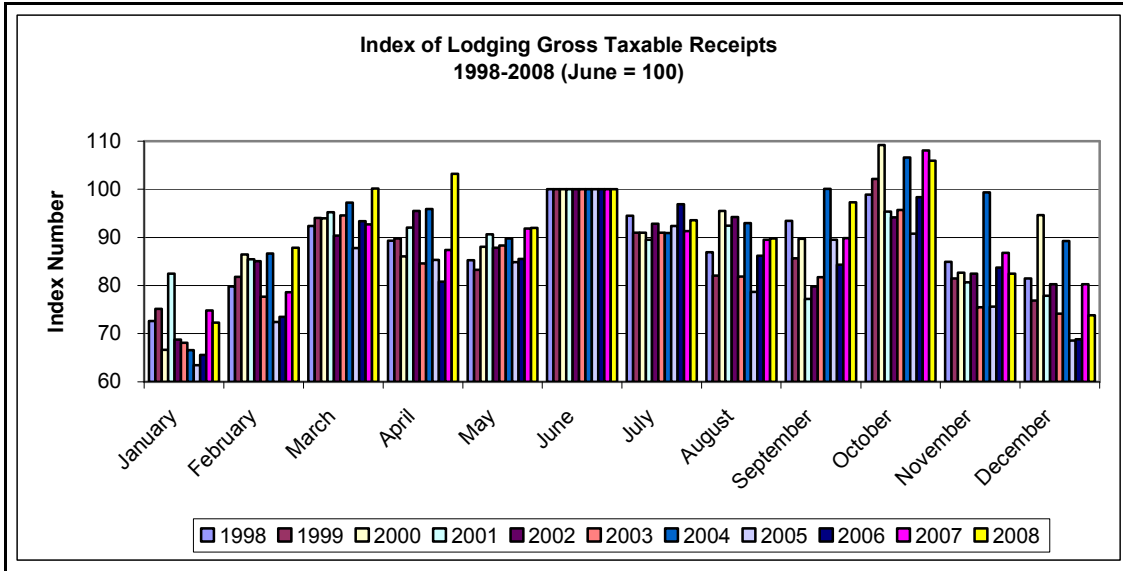
A statistical test designed to test significant differences in the monthly index numbers was conducted on both the seasonally adjusted (SA) and not seasonally adjusted (NSA) data. The findings from these tests are shown in Table 1. The patterns of the findings across the month are similar but not exactly the same. Both data sets indicate that tax collections peak. However, the NSA data give a much stronger indication of this trend than SA data. The SA data indicate the peak occurs in the early fall and that gross tax receipts begin to rise in May. What the data fails to show is a decline in gross tax receipts in June relative to the other months. That is, it does not give any evidence that restaurants are losing business because of Riverfest.

Table 1 Comparison Of Average Monthly Index Relative to June		
Average Index Value for:	NSA	SA
January	L	L
February	L	x
March	B	L
April	L	L
May	L	x
June	x	x
July	x	x
August	x	x
September	L	B
October	x	B
November	L	x
December	x	x
x: Statistically the same as June's average index number (95% level of significances). B: Statistically exceeds June's average index number (95% level of significances). L: Statistically less than June's average index number (95% level of significances).		

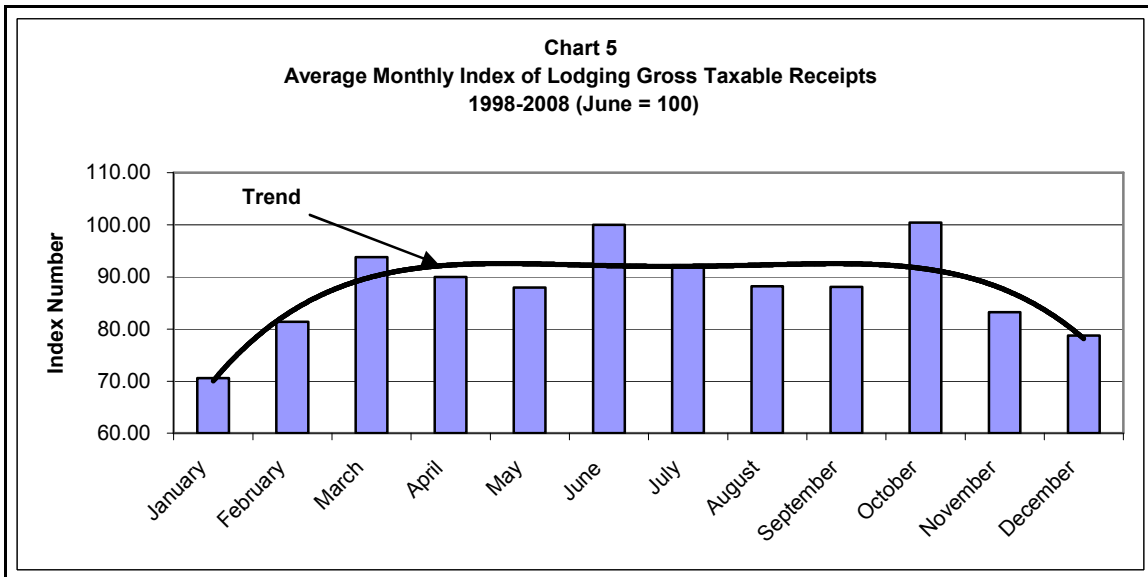
Lodging

The lodging gross taxable receipts have a pattern similar to the combined restaurant gross tax receipts. Nonseasonally adjusted data show that lodging gross tax receipts peak in June, but the corresponding seasonal adjusted series shows no monthly variations in lodging gross tax receipts.

Chart 4 plots ten year of monthly index numbers for lodging gross tax receipts. June's values dominate most other months with the exception of October. This means that lodging tax collections are generally highest in June.

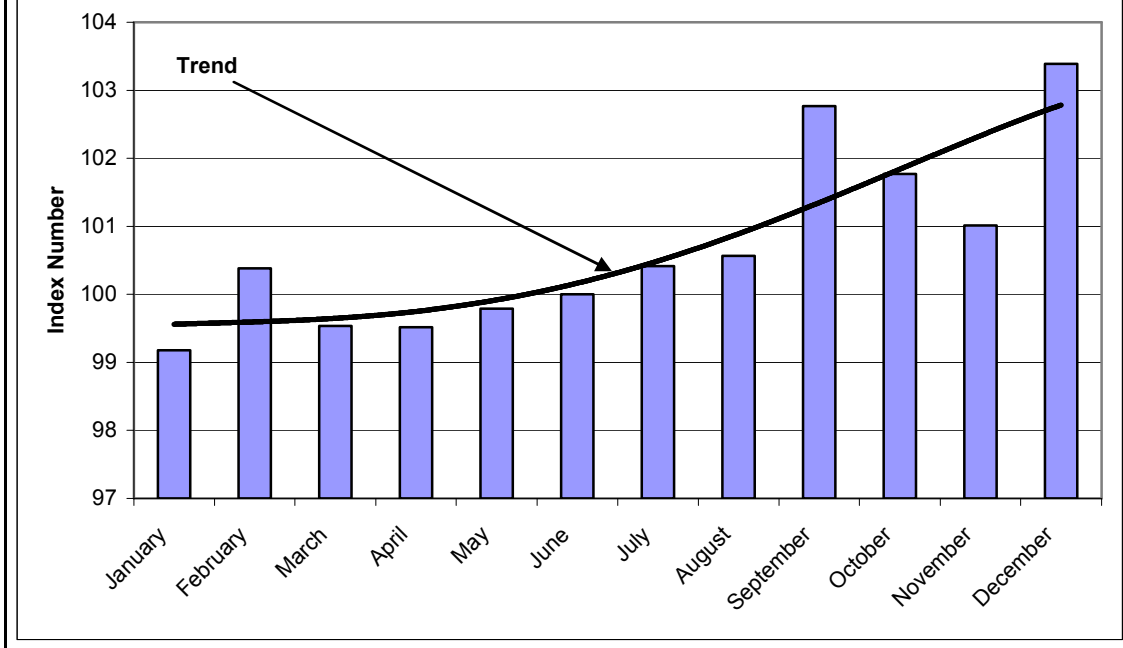


In Chart 5, the average monthly index values are plotted, and except for October it shows June dominating all other months in term of gross tax receipts. The trend line indicates the lodging is most active from early spring to early fall with the winter months being relatively slow.



When the lodging gross tax receipts are deseasonalized, the variations in monthly tax collections are eliminated. Chart 6 plots the average monthly index number for lodging gross tax receipts. As compared to the values in Chart 5, both the monthly variation and range of index values have been substantially reduced in the SA adjusted data. Essentially, the variation has been eliminated. There is no evidence in the lodging gross tax receipt data set that indicates Riverfest adversely effects the flow of revenues to lodging establishments.

Chart 6
Average Index Number Gross Receipts
1998-2008
(Seasonally Adjusted)



As with the combined restaurant gross tax receipts, a statistical test was conducted on both the seasonally adjusted (SA) and not seasonally adjusted (NSA) data. The findings from these tests are shown in Table 2. For NSA data, the test found June and October gross tax receipts were equivalent and higher than the other months. The SA data found the gross tax receipts to be the same for all months. What the data failed to show was any negative effects of Riverfest on lodging gross tax receipts. If anything there's evidence suggesting that May is a peak month for lodging tax collection. This could be due to the activities of Riverfest visitors.

Table 2 Comparison Of Average Monthly Index Relative to June		
	NSA	SA
January	L	x
February	L	x
March	L	x
April	L	x
May	L	x
June	x	x
July	l	x
August	L	x
September	L	x
October	x	x
November	L	x
December	L	x

x: Statistically the same as June's average index number (95% level of significances).
 B: Statistically exceeds June's average index number (95% level of significances).
 L: Statistically less than June's average index number (95% level of significances).

Conclusion

Monthly restaurant and lodging gross tax receipts data from 1998-2008 were analyzed to discover whether Riverfest adversely effected the flow of May’s tax collections. Presumably, if local restaurants and lodging establishment were losing business because potential customers choose to spend their dollars at Riverfest, gross tax collections would be less in May. This would cause June’s gross tax receipts to be relatively lower than other months.

This study did not find evidence that June’s restaurant or lodging gross tax receipts were relatively lower than other months. What it found was a seasonality pattern in the tax data. June’s gross tax receipts were among the highest of all month’s tax receipts for both restaurant and lodging establishments. After adjusting the data for the seasonality, June’s tax receipts data remained among the highest months for restaurant gross tax receipts, and the adjustment eliminated the variation in monthly lodging gross tax receipts.

Riverfest may be a source of a seasonal pattern exhibited by the tax receipt data. The reoccurring spending of Riverfest visitors in May could account for the seasonal uptick in both restaurant and lodging gross tax receipts for June. Adjusting the data for seasonality smoothes both series, and reduces variations in the monthly gross tax receipts. As a source of seasonality, Riverfest could be viewed as the beginning of a summer tourist season and associated tax collection season.

This study did not find evidence suggesting Riverfest causes a loss of revenues to restaurants and lodging establishments in the aggregate. This does exclude the possibility that there may be individual restaurants or lodging establishments that actually lose revenues due to Riverfest. Riverfest may cause distribution impacts where some restaurants gain revenue while other lose revenues because of the changing patterns of customers and customers expenditures. Lodging establishment may gain Riverfest visitors, but they may also lose business customers because of Riverfest.