

## THE IMPACT OF VIDEO POKER AND RIVERBOATS ON SALES TAX REVENUES

This Appendix examines the relationship between video poker and riverboat revenues and sales tax collections in the parishes. This analysis relates to the displacement effect that was estimated in Chapter 4 of this report. If local residents are putting money into video poker or casinos that they had been spending in the local economy, that should result in lower sales tax revenue for the parish, holding everything else constant. On the other hand, if this video poker or casino spending does not come out of the local economy or if there are new dollars coming into the local economy from visitors or other out-of-state sources to play video poker and gamble at riverboat casinos, then the results should reveal constant or higher sales tax revenues, holding everything else constant.

The analysis suggested above can be very complicated. Parish borders are not an insurmountable wall. Residents of one parish could play video poker in another parish and cut their spending in still a third, for example. Thus, the overall affect of video poker and riverboat casinos could be hidden in a complicated pattern of geographic shifts in spending.

In order to determine the existence of any effect of video poker and riverboats on sales tax revenues, regression analysis was used. The basic methodology for this analysis is to use a time-series estimation of Louisiana parishes from 1980 and 1998. The regression equation is:

$$1) \quad \text{PARISH} = f(\text{RVP}, \text{TE}, \text{MA}(-1)) + ,$$

Where:

PARISH	=	Sales Tax Revenue <sup>1</sup> in that Parish Adjusted for Inflation.
RVP	=	Video Poker Spending in that Parish Adjusted for Inflation.
TE	=	Total Employment in that Parish.
MA	=	A One-Year Moving Average Term to Correct for Serial Autocorrelation.
,	=	The Error Term.

<sup>1</sup> Source: William Oakland, Center for Public Policy , Tulane University

Table 1 presents the results for the regression estimations. As was expected, the results were mixed. Of the state's 64 parishes, Cameron Parish has no sales tax and West Carroll has no video poker. Thus, the total number of parishes for this analysis is 62. In 15 of the 62 parishes, video poker had a significant negative effect on local sales tax collections. In 6 of the 62 parishes, video poker had a significant positive effect on sales tax collections. In the remaining 41 parishes, the effect was not significantly different from zero. Thus, there is some evidence of the displacement effect discussed in Chapter 4. In 24% of the parishes that have video poker and a local sales tax, video poker cause

sales tax collections to decrease and in 9.7% of the parishes, video poker caused sales tax collections to increase.

**TABLE 1**  
TIME SERIES REGRESSION t-STATISTICS

Parish	Constant	RVP	TE	MA(-1)	R <sup>2</sup>
Acadia	-2.7406	-3.5539	3.8269	32.2182	85.0%
Allen	3.0964	1.1797	1.9362	5.4281	67.2%
Ascension	5.5993	3.5801	8.0808	-10.8118	86.1%
Assumption	-1.1463	-2.9034	4.0023	1.3181	73.4%
Avoyelles	-1.3705	-2.9976	4.6744	8.8954	86.3%
Beauregard	2.8284	0.8869	-0.2665	7.5564	41.5%
Bienville	0.7352	1.2212	-0.2486	3.3594	40.9%
Bossier	-0.7418	-1.3660	6.1543	3.1270	89.2%
Caddo	-0.2464	1.1784	0.9112	5.8000	73.2%
Calcasieu	-0.2238	-2.1822	2.7540	25.2556	73.3%
Caldwell	-1.3383	-1.1253	1.9021	18.1691	43.5%
Cameron	NA	NA	NA	NA	NA
Catahoula	-3.5565	-4.0352	6.4670	0.7594	83.1%
Claiborne	-3.5290	1.1075	5.6498	1.8030	81.1%
Concordia	0.2146	-1.5796	0.7668	-0.0396	8.0%
De Soto	-0.9915	-0.6498	2.8410	2.5708	49.6%
E. Baton Rouge	3.6458	1.2438	-0.1760	1.5683	35.7%
E. Carroll	-1.1709	-3.9899	3.6035	7.4383	94.5%
E. Feliciana	2.0253	-2.4697	-0.7884	2.8723	55.9%
Evangeline	0.7172	-0.7803	0.8069	3.2412	31.4%
Franklin	1.7567	0.4053	-0.2557	6.7670	13.8%
Grant	3.2927	1.7429	-1.2534	6.2189	32.4%
Iberia	-2.5482	-2.4654	4.9628	3.2721	83.0%
Iberville	-0.8565	-1.1224	2.3572	-0.0792	16.5%
Jackson	-1.8549	-3.4442	3.0338	6.0668	70.5%
Jefferson	1.4140	-0.4591	-0.6687	4.2878	62.3%
Jefferson Davis	-7.1490	-0.1610	9.5748	1.6094	91.8%
Lafayette	-1.8136	-1.9103	3.6976	9.4620	77.8%
Lafourche	-0.9426	-1.5623	2.3322	6.1396	81.6%
La Salle	-0.9682	0.7676	3.7244	3.2081	66.4%
Lincoln	5.2534	3.5955	-1.2310	2.3950	73.3%
Livingston	5.7706	3.4283	3.1604	0.4413	89.1%
Madison	-0.6465	-1.1458	3.2942	2.7549	67.0%
Morehouse	1.5159	0.5981	0.2730	1.0331	-0.1%
Natchitoches	-0.4244	0.3124	1.9494	3.3487	58.5%
Orleans	-3.0753	-1.9778	5.6420	1.7324	86.0%
Ouachita	1.7847	-3.0212	-0.7405	1.4766	85.6%
Plaquemines	-0.8307	-0.3705	3.1722	2.1661	61.2%

**TABLE 1 (Continued)**  
**TIME SERIES REGRESSION t-STATISTICS**

Parish	Constant	RVP	TE	MA(1)	R2
Pointe Coupee	-3.0991	-1.6886	3.6311	2.7320	71.8%
Rapides	1.9499	-0.4147	-1.3271	2.9678	66.4%
Red River	-2.2507	-4.6170	3.6216	1.1392	70.4%
Richland	1.7539	0.0659	-1.3227	6.1816	77.8%
Sabine	4.6191	2.4076	-1.7457	2.7118	53.9%
St. Bernard	0.0424	-0.9654	0.7504	1.4000	20.6%
St. Charles	-1.3691	-1.4786	3.7552	6.6705	69.3%
St. Helena	-1.8428	0.1526	3.7857	36.8994	65.8%
St. James	-1.7835	0.2179	3.8008	2.4291	53.3%
St. John	7.9849	-1.2226	-1.5055	-7.9458	18.1%
St. Landry	-4.9091	-4.4980	6.5711	2.2856	86.1%
St. Martin	2.8942	0.8209	-1.5449	1.8397	26.8%
St. Mary	-5.0023	-1.4171	8.7997	2.2426	91.3%
St. Tammany	4.5622	2.8671	2.9936	27.8124	96.5%
Tangipahoa	4.2196	2.6592	-1.4141	2.7530	74.3%
Tensas	-1.3262	-0.4569	3.8516	2.9240	79.3%
Terrebonne	-1.7621	1.6108	2.9746	11.3439	71.2%
Union	3.8259	1.3156	-0.2759	4.9491	57.9%
Vermilion	-4.2814	-4.5249	5.8820	3.3332	84.6%
Vernon	2.3457	0.3644	-0.3199	31.2361	45.8%
Washington	1.6636	0.2559	-1.2702	3.6966	76.2%
Webster	1.0455	0.6266	-0.2823	2.5640	6.9%
W. Baton Rouge	4.3418	0.8581	-0.8797	16.4062	40.5%
W. Carroll	NA	NA	NA	NA	NA
W. Feliciana	-4.3298	-0.9728	7.8859	-1.2352	73.5%
Winn	0.4619	-0.0205	0.5798	7.8216	51.8%

## THE IMPACT OF GAMBLING ON CRIMES OF CONVENIENCE

In Chapter 5 of the report, the impact of crimes committed by problem gamblers were estimated through the results of the prevalence survey and the Gamblers' Anonymous/Treatment survey. There is another potential kind of crime associated with gambling. Those crimes can be referred to as crimes of convenience. Crimes of convenience are defined as those crimes that might be committed against gamblers in the vicinity of the casinos. They are robbery, burglary, and the like. In this Appendix, the impact of gambling on those crimes is estimated through regression analysis.

The primary objective of this analysis is to determine the extent to which the presence of gambling in a parish increases or decreases or has no effect on the crime rate in the parish. The basic methodology for the crimes-of-opportunity study is to use a cross-section simultaneous equation estimation of Louisiana parishes for 1995 (the latest year for an important set of variables).

### RIVERBOAT CASINOS

The two equations for the riverboat casino regression are:

- 2)  $RETOT = f(RIVREV, POL, POV, POP, TOTEM, VIS, NONWH)$
- 3)  $POL = f(RETOT, RIVREV, POL, POV, POP, TOTEM, VIS, NONWH, PROPTAX)$

Where:

RETOT	=	Non-violent serious crime rate in the parish.
RIVREV	=	Riverboat spending in the parish.
POL	=	Police spending in the parish.
POV	=	Poverty rate in the parish.
POP	=	Parish's population.
TOTEM	=	Total employment in the parish.
VIS	=	Number of visitors.
NONWH	=	Proportion of the population that is non-white.
PROPTAX	=	Property tax fiscal capacity.

Based on this system of equations, the effect of increased riverboat casino revenue on the crime rate is positive but not significantly different from zero. The coefficient of the riverboat revenue term in the crime equation has a t-statistic of .7972, which is significant only at the 43% level of confidence. Using standard tests, it has to be concluded that the effect of riverboat casino activity on crimes of convenience is zero.

## VIDEO POKER

The two equations for the video poker regression is:

- 4)  $RETOT = f(\text{VIDEO}, \text{POL}, \text{POV}, \text{POP}, \text{TOTEM}, \text{VIS}, \text{NONWH})$
- 5)  $\text{POL} = f(\text{RETOT}, \text{VIDEO}, \text{POL}, \text{POV}, \text{POP}, \text{TOTEM}, \text{VIS}, \text{NONWH}, \text{PROPTAX})$

Where:

RETOT	=	Non-violent serious crime rate in the parish.
VIDEO	=	Video poker spending in the parish.
POL	=	Police spending in the parish.
POV	=	Poverty rate in the parish.
POP	=	Parish's population.
TOTEM	=	Total employment in the parish.
VIS	=	Number of visitors.
NONWH	=	Proportion of the population that is non-white.
PROPTAX	=	Property tax fiscal capacity.

Based on this system of equations, the effect of increased video poker revenue on the crime rate is positive and is significantly different from zero. The coefficient of the video poker revenue term in the crime equation has a t-statistic of 2.2392, which is significant at the 3% level of confidence. Using standard tests, it has to be concluded that the effect of video poker on crimes of convenience is positive.