Working Paper Excerpts:

A Spatial Panel Data Analysis of the Effects of State Level Advertising Expenditures on Tourism

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April 19, 2017

In this section, we provide estimates of the full sample using the state tourism budget. Tables 9-12 display the results. We find statistical significance within conventional bounds in all our specifications.

The results contained in Table 9 are for our panel data regression with fixed effects. They suggest that for a $1.00 increase to the state tourism budget, hotel and accommodations share of per-capita gross state product increases by roughly $15.00, while it increases tourism spending by nearly $51.00. We see modest, however significant increases in taxes generated from tourism as well, at an average of roughly $3.50 for every dollar allocated to the state tourism budget.

Tables 10-12 present the results for our estimations in which we use the SAR and SDM specifications on hotel and accommodations share of per-capita gross state product, tourism spending, and taxes generated from tourism. The estimated coefficients in these results are not substantially different from those in the main panel data regressions with fixed effects. Our most significant results in these estimations are the effects of state tourism budget allocation on tourism spending generated. We find statistical significance at the 1% level in the SAR specification and at the 5% level in the SDM specifications. We find significance at the 10% level across the board for the effect of state tourism budget allocation on taxes generated from tourism.

Table 9: Fixed Effects Regression Results

	Dependent variable:					
	GSP		Tourism Spending		Taxes	
	(1)	(2)	(3)	(4)	(5)	(6)
$BUDG_t$	16.61**	13.03*	53.32***	48.15***	3.678*	3.251*
	(2.92)	(2.43)	(4.01)	(3.88)	(2.19)	(2.13)
UR_t	-40.21	-82.85	-79.84**	-128.3*	-7.149*	-12.67
	(-1.62)	(-1.32)	(-3.08)	(-2.25)	(-2.49)	(-1.80)
t	3.548		25.76**		-1.884*	
	(1.79)		(3.65)		(-2.17)	
Constant	676.6***	858.8**	2657.4***	3056.5***	429.3***	478.0***
	(4.89)	(2.81)	(19.61)	(10.23)	(26.91)	(12.34)
N	435	435	435	435	435	435

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 10: Accommodations Share of GSP Results

	Dependent variable: GSP per Capita			
	SAR	SAR	SDM	SDM
	(1)	(2)	(3)	(4)
$BUDG_t$	16.34**	12.99*	21.47*	21.16*
	(2.91)	(2.44)	(2.21)	(2.46)
UR_t	-41.90	-83.85	-111.4	-112.5
	(-1.62)	(-1.35)	(-1.50)	(-1.47)
t	3.179		-0.545	
	(1.41)		(-0.12)	
	Spatial Weights			
ρ	-0.0787	-0.0764	0.0269	0.0127
	(-1.20)	(-1.24)	(0.73)	(0.31)
	Spatial Weights (λ_2)			
$BUDG_t$			-19.54	-19.15
			(-0.82)	(-0.63)
UR_t			88.61	79.60
			(1.33)	(1.61)
	Variance			
σ^2	25471.6	23711.2	22451.9	22305.1
	(1.28)	(1.41)	(1.52)	(1.52)
N	435	435	435	435

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 11: Tourism Spending Results

	Dependent variable: Tourism Spending			
	SAR	SAR	SDM	SDM
	(1)	(2)	(3)	(4)
$BUDG_t$	51.79***	47.24***	45.80**	45.30**
	(4.20)	(4.08)	(2.72)	(3.00)
UR_t	-70.89*	-123.8*	-134.1*	-132.9
	(-2.45)	(-2.11)	(-2.03)	(-1.86)
t	22.86***		17.98**	
	(3.63)		(3.02)	
	Spatial Weights			
ρ	0.151*	0.0886	0.199***	0.109*
	(2.21)	(1.18)	(4.74)	(2.36)
	Spatial Weights (λ_2)			
$BUDG_t$			21.95	26.67
			(0.51)	(0.52)
UR_t			85.99	47.26
			(1.62)	(1.36)
	Variance			
σ^2	54229.6	49187.9	51063.1	48567.1
	(1.79)	(1.94)	(1.89)	(1.92)
N	435	435	435	435

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 12: Taxes Generated from Tourism Results

	Dependent variable: Taxes Generated from Tourism			
	SAR	SAR	SDM	SDM
	(1)	(2)	(3)	(4)
$BUDG_t$	3.918*	3.221*	5.076*	4.573*
	(2.33)	(2.18)	(2.08)	(2.13)
UR_t	-6.668*	-12.72	-16.22*	-15.79
	(-2.28)	(-1.83)	(-2.05)	(-1.85)
t	-1.590		-2.042*	
	(-1.80)		(-2.16)	
	Spatial Weights			
ρ	0.101**	-0.0134	0.141***	0.0133
	(3.27)	(-0.34)	(4.39)	(0.46)
	Spatial Weights (λ_2)			
$BUDG_t$			-4.329	-5.215
			(-0.72)	(-0.75)
UR_t			11.86	6.506
			(1.71)	(1.16)
	Variance			
σ^2	1079.4	948.6	1010.7	924.7
	(1.61)	(1.66)	(1.75)	(1.74)
N	435	435	435	435

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

In this section, we provide estimates from the restricted sample of using 9 states that are similar to Florida; having ample sunlight and already sizable amounts of tourism. The states are Alabama, Arizona, Florida, Louisiana, Mississippi, Nevada, North Carolina, South Carolina, and Texas. We use unemployment as a control variable in these estimations. Tables 13-16 display the results. The panel data regression results from this restricted sample yield a mixture of positive negative signs with respect to the effect of tourism budget allocation on hotel and accommodations share of gross state product. We find positive results in the specifications in which we estimate the effect of state tourism budgets on tourism spending and taxes generated from tourism. We should note, however, there is no statistical significance within any conventional bounds in any of these specifications.

Table 13: Fixed Effects Regression Results with Budget (Restricted Sample)

	Dependent variable:					
	GSP		Tourism Spending		Taxes	
	(1)	(2)	(3)	(4)	(5)	(6)
$BUDG_t$	-10.67	21.10	49.93	81.46	6.971	11.11
	(-0.41)	(0.76)	(1.25)	(1.73)	(1.20)	(1.66)
UR_t	-63.77	-167.4	-82.33	-153.3	-7.602	-17.34
	(-1.48)	(-1.59)	(-1.99)	(-1.71)	(-1.78)	(-1.55)
t	-4.855		-0.481		-4.008	
	(-0.57)		(-0.05)		(-2.25)	
Constant	1483.5**	1835.8*	3674.2***	4163.2***	536.6***	606.6***
	(3.59)	(3.02)	(10.10)	(6.51)	(10.97)	(6.68)
N	135	135	135	135	135	135

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 14: Accommodations Share of GSP Results with Budget (Restricted Sample)

	Dependent variable: GSP per Capita			
	SAR	SAR	SDM	SDM
	(1)	(2)	(3)	(4)
$BUDG_t$	-14.68	16.57	-10.59	-0.780
	(-0.56)	(0.65)	(-0.41)	(-0.03)
UR_t	-66.02	-169.0	-156.6	-177.2
	(-1.55)	(-1.73)	(-1.77)	(-1.88)
t	-5.773		-14.77	
	(-0.68)		(-1.10)	
	Spatial Weights			
ρ	-0.105	-0.114	-0.124	-0.128
	(-1.54)	(-1.41)	(-1.50)	(-1.44)
	Spatial Weights (λ_2)			
$BUDG_t$			-84.90	-68.83
			(-1.21)	(-1.02)
UR_t			109.6	37.45
			(1.68)	(1.56)
	Variance			
σ^2	64317.8	52387.1	55359.9	50926.1
	(1.30)	(1.57)	(1.49)	(1.63)
N	135	135	135	135

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 15: Tourism Spending with Budget (Restricted Sample)

	Dependent variable: Tourism Spending			
	SAR	SAR	SDM	SDM
	(1)	(2)	(3)	(4)
$BUDG_t$	49.76	77.45	56.93	58.65
	(1.26)	(1.75)	(1.34)	(1.69)
UR_t	-82.46*	-153.9	-119.5*	-142.2
	(-2.01)	(-1.85)	(-2.08)	(-1.93)
t	-0.520		-9.881	
	(-0.05)		(-0.86)	
	Spatial Weights			
ρ	-0.00349	-0.0645	0.00336	-0.0626
	(-0.10)	(-1.03)	(0.07)	(-0.98)
	Spatial Weights (λ_2)			
$BUDG_t$			-127.9	-100.3
			(-1.48)	(-1.19)
UR_t			38.00	-6.132
			(1.16)	(-0.13)
	Variance			
σ^2	105253.9	87102.5	98315.5	84985.0
	(1.41)	(1.57)	(1.49)	(1.62)
N	135	135	135	135

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 16: Taxes Generated from Tourism with Budget (Restricted Sample)

	Dependent variable: Taxes from Tourism			
	SAR	SAR	SDM	SDM
	(1)	(2)	(3)	(4)
$BUDG_t$	7.324	10.84	8.522	6.983
	(1.27)	(1.72)	(1.37)	(1.25)
UR_t	-7.437	-17.36	-13.35*	-16.16
	(-1.72)	(-1.65)	(-2.03)	(-1.81)
t	-3.769*		-5.293*	
	(-2.04)		(-2.14)	
	Spatial Weights			
ρ	0.0502	-0.0298	0.0584	-0.0300
	(1.63)	(-0.56)	(1.48)	(-0.52)
	Spatial Weights (λ_2)			
$BUDG_t$			-21.34	-19.15
			(-1.32)	(-1.15)
UR_t			5.965	1.508
			(1.50)	(0.28)
	Variance			
σ^2	2395.0	1979.1	2203.6	1901.0
	(1.29)	(1.44)	(1.40)	(1.52)
N	135	135	135	135

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$