



An Examination of the Fiscal and Economic Impacts of Local Tourism Taxes: The Case of Florida'S Local Optional Tourism Development Tax

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This study investigates the fiscal and economic impacts of local optional tourism development taxes of Florida's 67 counties during the past 7 years. This study is motivated by the need to investigate the fiscal and economic impacts of adopting local optional tourism taxes of Florida counties. In the last seven years, many counties have decided to adopt local optional tourism taxes.

The major purpose of this study is an empirical examination of the fiscal and economic impacts of local optional tourism taxes on Florida counties. In doing so, this study provides with empirical evidence regarding to the impacts of local optional tourism taxes as additional tax revenue sources.

A robust standard error model of a fixed effects model in a time-series cross-section data analysis is employed to examine the fiscal and economic impacts of local optional tourism development taxes on revenue growth, taxable sales of tourism related facilities, property tax burden, and the number of tourism related facilities in Florida counties over a seven-year period (FY 2004–FY 2010). In the result, the empirical findings show that the use of local optional tourism taxes improves financial status, enhances additional tax revenue sources, reduces property tax burdens, and fulfills tax policy goals – promoting local tourism.

Finally, This study finds that local optional tourism taxes have fiscal and economic impacts on revenue growth, property tax burdens, and tourism industry. This means that the research findings regarding the fiscal and economic impacts of local optional tourism taxes contributes to the theories on the fiscal and economic impacts as local optional taxes.

[Key Words: Local tourism tax, revenue growth, tax revenue productivity, property tax burden, tourism related facilities, and panel data analysis]

* This work was supported by the National Research Foundation of Korea Grant funded by the Korean Government (NRF-2012S1A3A2033963)

I . INTRODUCTION

This study is motivated by the need to investigate the fiscal and economic impacts of adopting local optional tourism development taxes of Florida counties. In the last seven years, many counties have decided to adopt local optional tourism development taxes. In current, local optional tourism taxes are the third-largest tax revenue sources in Florida counties following property taxes and sales taxes.

In the midst of growing resistance to property taxes in the late 1970s and early 1980s, a number of counties adopted a variety of consumption taxes such as local optional sales taxes and local optional tourism taxes. New consumption taxes were intended to provide funds for additional service delivery and to contribute to a more stable revenue system. Since the nationwide 'property tax revolt' in the late 1970s, many states have allowed counties to adopt alternative tax revenue sources. The state of Florida now allows several types of local consumption taxes as alternatives to property taxes. Local optional tourism development taxes were authorized in 1987 and most counties adopt these taxes in FY 2010 ("Local government financial information handbook," 2011). In Florida, local optional tourism development taxes are levied to promote the development of local tourism and applied to transient rental transactions such as hotels, motels, condominiums, apartments, vacation, homes, and so forth.

Local optional tourism development taxes are imposed to ensure revenue sources that help counties enhance their financial resources, improve public services, and develop economic status. Use of revenues collected with local optional tourism development taxes, is usually authorized for the purpose of tourism development such as capital construction of tourism related facilities, maintenance, cultural festivals, and promotions. However, the authorized uses vary according to the particular levy; in other words, local optional tourism development taxes might be used for enhancing additional revenue sources and

reducing property tax burdens (Florida Tax Handbook, 2011).

Although most counties use local optional tourism development taxes, few studies have been conducted to determine whether the use of local optional tourism development taxes has promoted local tourism, enhanced additional revenue sources or reduced property tax burdens (Deran, 1968, Ulbrich, 1996; Jung, 2001; Krmeneč, 1994; Zhao and Hou, 2008). The major purpose of this study is an empirical examination of the fiscal and economic impacts of local optional tourism development taxes on Florida counties. In doing so, this study will provide with empirical evidence regarding to the impacts of local optional tourism taxes as additional tax sources. With respect to local optional taxes, most previous studies have focused on the adoption and fiscal impacts of local optional sales taxes such as LOST (Local option sales taxes) and SPLOST (Special purpose Local option sales taxes). Zhao (2005) examined the factors influencing adoption and fiscal impacts on local finance using a Georgia LOST case. Jung (2002) explored the fiscal impacts of SPLOST on local finance using a Georgia case. Instead, this research does not focus on local optional sales taxes, but focuses on local optional tourism taxes using different levy of local optional tourism development taxes during the past 7 years. That is why local optional tourism taxes have large and important proportion in Florida counties but few studies have conducted an empirical analysis using local optional tourism taxes. In doing so, this study will contribute to the literature regarding the fiscal and economic impacts when adopting additional tax sources. This study not only explores the fiscal and economic impacts of local optional tourism development taxes, but also tracks variation over time and across spaces. That is because panel data analysis using longitudinal data can reveal the dynamic effects of local optional tourism development taxes on local finance and economy.

Certainly, Florida counties have different local tax system compared to Korean local government. Hence, empirical analysis of this study might have some limitations to application to Korean case. However, the empirical findings are

expected to provide valuable implications for tax policy makers in Korea who seek to improve the financial status through finding a new tax sources.

The organization of this study is as follows. The next section briefly describes the related research and local optional tourism development taxes in Florida. The third section reviews past research on the topic. The fourth section explains the data and statistical methods used in this study. The fifth section discusses the research findings. The final section offers implications and our conclusion.

II. RESEARCH BACKGROUNDS

1. Local optional tourism development taxes in Florida

Local optional tourism development taxes are types of local optional sales taxes referred to as a discretionary sales surtax imposed by county governments in Florida. County governments can decide whether or not to levy surtaxes within the county (Local government financial information handbook, 2011).

Florida allows types of separate tourism taxes on transient rental transactions. The revenue may be used for capital construction of tourism-related facilities, tourism promotion, and beach and shoreline maintenance; however, the approved uses vary according to the particular levy. In FY 1987, Florida statute chapter 87-209 authorized any county subject to voter approval to levy a tourism development tax at the rate of 1 or 2 percent. In FY 2010, Florida statute section 125.0124 authorized the levy of five separate local optional tourism taxes and rental charges subject to the transient rentals tax to be used in various ways to promote tourism with the county. In general, the revenues from these levies may be used for capital construction of tourism-related facilities, tourism promotion, and beach and shoreline maintenance; however, the authorized uses vary according to the particular levy. There is a prohibition against any county with a convention

development tax from levying tourism development taxes at a rate of more than 2 percent. However, this prohibition does not apply to the Professional Sports Franchise Facility Tax or Duval County's levy of the Additional Professional Sports Franchise Facility Tax. The 1 or 2 percent tourism development tax was the original tourism development tax. If adopted, the rate must be either 1 or 2 percent. Under certain conditions, the tax may be levied in a sub-county area. The county ordinance levying the tax must be approved by a vote of the electors. General authorized uses include the capital construction of tourism-related facilities, tourism promotion, and beach and shoreline maintenance, including the funding and refunding of revenue bonds (Florida Tax Handbook 2011). Thus, Florida counties can impose maximum 7% rate local optional tourism taxes including 1 to 2 percent tax, additional 1 percent tax, professional sports franchise facility tax, high tourism impact tax, additional professional sports franchise facility tax, tourist impact tax, consolidated county convention development tax, and charter county convention development tax.

Florida counties began to levy local optional tourism development taxes in FY 2004. In FY 2010, no county levied 7% tax rate. Two counties - Orange County and Osceola County - levied 6% tax rate and seven counties - Calhoun County, De Soto County, Dixie County, Hardee County, Lafayette County, Liberty County, and Union County - did not levy local optional tourism development taxes. Appendix A shows tax rate and countywide realized tax revenues from local optional tourism development taxes during FY 2004 - FY 2010.

2. Previous research in local optional taxes

Much prior research has studied local optional taxes that influence local finance. First, some previous research has studied the fiscal impact of local optional taxes on local tax revenue structures. Krmenec (1991) examined whether or not local optional sales taxes substitute for property tax revenue, using the 46

largest cities in Illinois. Kremenec found that the substitution of local optional sales tax revenue for property tax revenue in cities was attributed to economic change and the critical determinants of the substitution appeared to be the multiplicity's share of the regional retail market. Zhao and Hou (2008) examined the effect of local optional sales taxes on fiscal structure, using the concept of fiscal disparity. According to Zhao and Hou, whatever the specific purpose, local optional sales taxes diversify the revenue structure and enhance the fiscal capacity of local governments. Also, Zhao and Hou found that local optional sales taxes may introduce a new source of fiscal disparity among local governments because sales tax base are not evenly distributed. In short, Zhao and Hou's study shows that local optional sales taxes influence local revenue structure, such as diversifying revenue sources and enhancing additional revenue sources.

Second, local optional taxes were considered in terms of local fiscal structures. An adoption of local optional taxes can provide reduction of risks associated with dependency on property tax. According to Oates (1985), an adoption of local optional taxes is often a strategy for improving fiscal management. In this regard, financial managers try to reduce volatility risks in the overall fiscal structure (Carroll, 2009). In other words, a more adoption local optional taxes produces fiscal stability, lessens burdens of specific taxes, and reduces on higher levels of government (Jung, 2001; Kingma, 1993; Shannon, 1989; Suyderhoud, 1994; White, 1983). In addition, from the view of taxpayers, a more local optional taxes employing several consumption taxes help to reduce property tax burdens and export taxpayers' tax burdens to outsiders (Shannon, 1989; Suyderhoud, 1994).

Third, some prior studies focused on the relationship between local optional taxes and fiscal stability (Carroll, 2009; Holcombe and Sobel, 1995; Sobel and Holcombe, 1996). A more local optional tax can lead to fiscal instability by employing less stable tax sources than property taxes. In other words, since moving away from concentration on the property tax requires adoption of tax sources that are possibly less stable than the property taxes. As a result, more local

optional taxes may produce greater revenue volatility rather than stability.

III. RESEARCH FRAMEWORK AND HYPOTHESIS

With respect to impacts of local tourism taxes, three perspectives can be considered. First, as local optional taxes, local tourism taxes have fiscal impacts on local governments. Much previous research (Berger, 1993; Bingham et al., 1978; Due & Mikesell, 1994; Jung, 2001, 2002; Kramer, 1971; Krmenec, 1991; Ladd & Weist, 1987; Nice, 1987; Norstrand, 1980; Pajari, 1984; Phillips & Gross, 1995; Ulbrich, 1996; Ulbrich, Mabry, & Warner, 1990; Zhao, 2005a, 2005b; Zhao & Hou, 2008) has studied the fiscal impacts of local optional taxes on local governments.

1. Local optional taxes and local revenue growth

Some previous research focusing on the relationship between property taxes and local optional taxes has examined the probability of local optional taxes as a substitute to property taxes. Ulbrich (1996) studied the fiscal impacts of local optional taxes by focusing on the relationship between local optional income taxes and property taxes. He examined the difference in revenue structure between local governments without local optional income taxes during FY 1991 to FY 1994, finding that property tax growth in local governments with local optional income taxes was less than one tenth of that for local governments without local optional income taxes. Moreover, per capita property valuation between FY 1991 to FY 1994 increased about \$7 in local governments with local optional income taxes, compared to about \$32 in local governments without local optional income taxes. Ulbrich suggests that local optional income taxes were a substitute for property taxes as an alternative local tax revenue source (Ulbrich, 1996).

Hypothesis 1a: Local optional tourism development taxes are associated with revenue growth.

Hypothesis 1b: Local optional tourism development taxes are associated with increasing taxable sales of tourism related facilities.

2. Local optional taxes and property tax burden

Other previous studies focused on the relationships between local optional taxes and property tax burdens. Deran (1968) examined the impact of local optional income taxes on the property tax burden using U.S. local governments of similar size with and without local optional income taxes. He found that local governments with local optional income taxes have lower property taxes as a percentage of total taxes than local governments without local optional income taxes. Deran's study also showed that both per capita property taxes and per capita total taxes had increased at a low rate in local governments with local optional income taxes. Thus, the result of Deran's study indicates that local optional income taxes can be a substitution for property taxes. Ulbrich, Marby, and Warner (1990) explored the impact of local optional sales taxes on property tax burdens in local governments, finding that the presence of local optional sales taxes is negatively associated with property tax burden. Their study shows that the presence of local optional sales taxes lowers the effective property tax rate or reduces the per capita property tax. Jung (2001) also examined the impact of local optional sales taxes on property tax burden, focusing on the effect of one percent local optional sales taxes on property tax level, millage rate, and total spending level of Georgia counties. Jung found that counties with local optional sales taxes tend to have per capita property taxes that are an average of \$12 lower than without local optional sales taxes. The study also shows that the adoption of local optional sales taxes provided about 28 cents in property tax relief and it leads to an increase in total spending of about 48 cents. Thus, Jung's study indicates that local optional sales taxes achieves the objective of property tax relief, but on

balance local optional sales taxes are more an augmentation of, rather than an effective substitute for, property taxes in Georgia counties (Jung, 2001).

Hypothesis 2: Local optional tourism development taxes are associated with lower property tax burden.

3. Local optional taxes and economic impacts

Local tourism taxes also can be considered with respect to economic impacts on local governments. According to Florida Tax Handbook (2011), the revenue from local tourism development taxes may be used for capital construction of tourism-related facilities, tourism promotion, and beach and shoreline maintenance. In other words, the impact of local optional taxes on local governments is these taxes encourage governments to implement specific policies and deliver better public services. With regard to delivering policy services, local optional taxes can play a role in enhancing additional revenue sources for policy services or strengthening public service delivery. For example, local optional sales taxes enhance additional government revenue and improve public services for education, transportation, and tourism. As mentioned, the objective of local optional tourism taxes is to stimulate local tourism development such as construction of tourism-related facilities and tourism promotion.

Based on the above discussion, it is very important to examine how local optional tourism taxes influence local fiscal status and accomplish their policy goals. In other words, it is an imperative process to explore whether local optional tourism taxes have fiscal and economic impacts on local government. Building on the above previous research, this study examines the following hypotheses regarding fiscal and economic impacts of local optional tourism taxes.

Hypothesis3: Local optional tourism development taxes are associated with increasing tourism related industry.

IV. METHODOLOGY

1. Variables and measurements

To explore the fiscal and economic impacts of local optional tourism development taxes, this study employs per capita revenue, per capita taxable sales regarding tourism related facilities, property tax burden, and the proportion of employees working in hotels and restaurants as dependent variables.

Revenue refers to the per capita revenue of each county using natural logarithms. This information was obtained from the report of the Florida Department of Financial Services and the Local Government Financial Information Handbook. The first step in calculating this variable is to divide the total amount of revenue of each county by the county's population. Second, natural logarithms are employed to solve the normal distribution problem. Per capita taxable sales regarding tourism related facilities refers to the per capita taxable sales regarding tourism related facilities using natural logarithms. This information was obtained from Florida Statistical Abstract. The first step in calculating this variable is to divide the total amount of taxable sales regarding tourism related facilities of each county by the county's population. Second, natural logarithms are employed to solve the normal distribution problem. Property tax burden refers to the per capita collected property taxes relative to per capita income in each county. This information was obtained from the annual report of the Florida Department of Financial Services and the Local Government Financial Information Handbook. For property tax burden, the first step in calculating this variable is to divide the per capita collected property taxes by the per capita income of each county. Second, multiplication (*1000) is employed to facilitate calculations. Tourism-related places refer to the number of hotels and restaurants in each county. This variable was obtained from the Florida Statistical Abstract. This variable is calculated by the number of hotels and restaurants in each county.

To examine the fiscal and economic impacts of local optional tourism development tax, per capita local optional tourism development taxes of each county is employed as an independent variable. It is commonly understood that an independent variable has a delayed effect rather than an immediate effect on dependent variables. Nothing in the literature on this topic indicates what the time span of lagged effects might be. Therefore, this study includes statistical analysis to ascertain which of five different time periods might have shown stronger lagged effects. The effect of a one-year lag-length was compared to those of longer time periods, specifically a two-year lag, a three year-lag, a four-year lag, and a five-year lag. The effects of the one-year lag period were stronger than those of the longer time periods. Consequently, a one-year lag independent variable is employed as an independent variable to examine its influence on the dependent variables.

This study controls for population density, income, the form of government, metropolitan statistical area, and charter. Population density refers to the number of people per square mile in each county. This variable was obtained from the U.S. Census Bureau. In this study, population density is operationalized as the natural logarithms of the number of persons per square mile in each county. Income refers to the per capita income of each county. This variable was obtained from the Florida Statistical Abstract. Income indicates the per capita income of each county using natural logarithms. This is calculated by the amount of total income for each county divided by the population of that county. Natural logarithms are employed to solve for the normal distribution problem. FOG refers to the Form of Government of each county. This variable was obtained from the Municipal Year book. This variable is coded 1 if a county has an appointed manager; otherwise it is coded 0. Metropolitan statistical areas refer to the presence of a metropolitan statistical area. This is measured by coding 1 if a county exists within a metropolitan statistical area, otherwise it is coded 0. The MSA was obtained from the Florida Statistical Abstract. Charter refers to whether a county has a charter. This information was obtained from the Florida Statistical

Abstract. This variable is coded 1 if a county has a charter; otherwise it is coded 0.

Table 1. Variables, Measurements, and Data Sources

VARIABLES	DEFINITIONS	DATA SOURCES
DEPENDENT VARIABLES REVENUE PER CAPITA	The per capita revenue of each county	The annual report of the Florida Department of Financial Services and the Local Government Financial Information Handbook
TAXABLE SALES PER CAPITA	The per capita taxable sales regarding tourism-related facilities	Florida Statistical Abstract
PROPERTY TAX BURDEN	The per capita collected property taxes divided by per capita income using multiplication of 1,000	The annual report of the Florida Department of Financial Services and the Local Government Financial Information Handbook
TOURISM FACILITIES	The number of tourism-related places	Florida Statistical Abstract
INDEPENDENT VARIABLE TOURISM TAXES PER CAPITA_t-1	The per capita collected tourism taxes of each county using one-year lagged	The annual report of the Florida Department of Financial Services and the Local Government Financial Information Handbook
CONTROL VARIABLES MSA	The presence of a metropolitan statistical area; coded 1 if a county exists within metropolitan area, otherwise 0	Florida Statistical Abstract
FOG	The form of government; coded 1 if a county has an appointed manager, otherwise 0	Municipal Year book
POPDENSITY	The number of people per square mile using natural logarithms	U.S. Census Bureau
INCOME	The per capita income using natural logarithms	Florida Statistical Abstract
CHARTER	Charter or non-charter	Florida Statistical Abstract

2. Statistical method

Based on the above research hypotheses and data structure, a time-series cross-section (TSCS) data analysis was used to detect statistical relationships. Although there are several analytical options for doing time-series cross-section data analysis this study employs a robust standard error model of fixed effect. A robust standard error model is required when the variance of the disturbance is unique to each case, each pair of cases has their own covariance, and the variance has an auto-correlation problem. This study conducted several tests to select the appropriate statistical model. Table 2 shows statistical results for testing appropriate statistical models.

Table.2 Panel assumption tests

MODEL I (REVENUE)				
TESTS		STATISTICAL RESULTS		DECISIONS
Panel regression or OLS	'testparm'	F=13.53 (p=0.000<0.05)	Fixed effect (o)	Panel regression model
	Breusch-Pagan LM	Chi-square=6070.63 (p=0.000<0.05)	Random effect (o)	
Fixed effect or Random effect	Hausman test	Chi-square=707.10 (p=0.000<0.05)	Fixed effect (o)	Fixed effect (FE) model
Panel assumptions	Pesaran CD	4.49 (p=0.000<0.05)	Cross-sectional Independency	A robust standard effort model
	Modified Wald	Chi-square=7326.43 (p=0.000<0.05)	Heteroscedasticity	
	Wooldridge test	F=45.53 (p=0.000<0.05)	First order autocorrelation	

MODEL II (TAXABLE SALES)				
TESTS		STATISTICAL RESULTS		DECISIONS
Panel regression or OLS	'testparm'	F=32.62 (p=0.000<0.05)	Fixed effect (o)	Panel regression model
	Breusch-Pagan LM	Chi-square=5419.23 (p=0.000<0.05)	Random effect (o)	
Fixed effect or Random effect	Hausman test	Chi-square=279.64 (p=0.000<0.05)	Fixed effect (o)	Fixed effect (FE) model
Panel assumptions	Pesaran CD	4.45 (p=0.000<0.05)	Cross-sectional Independency	A robust standard effort model
	Modified Wald	Chi-square=2789.86 (p=0.000<0.05)	Heteroscedasticity	
	Wooldridge test	F=114.40 (p=0.000<0.05)	First order autocorrelation	
MODEL III (PROPERTY TAX BURDEN)				
TESTS		STATISTICAL RESULTS		DECISIONS
Panel regression or OLS	'testparm'	F=1.89 (p=0.000<0.05)	Fixed effect (o)	Panel regression model
	Breusch-Pagan LM	Chi-square=81.77 (p=0.000<0.05)	Random effect (o)	
Fixed effect or Random effect	Hausman test	Chi-square=23.96 (p=0.000<0.05)	Fixed effect (o)	Fixed effect (FE) model
Panel assumptions	Pesaran CD	-3.64 (p=0.000<0.05)	Cross-sectional Independency	A robust standard effort model
	Modified Wald	Chi-square=360.00 (p=0.000<0.05)	Heteroscedasticity	
	Wooldridge test	F=12.16 (p=0.027<0.05)	First order autocorrelation	

3. Statistical results

This study analyzes the fiscal and economic impacts of local optional tourism development taxes of Florida counties using a robust standard error model. Table 1 provides the definitions and sources of variables that are employed in this study. This study uses multiple dependent variables related to the following three

research models -- model I which is the model of revenue growth, model II which is the model of taxable sales of tourism related facilities, model III which is the model of property tax burden, and model IV which is the model of tourism related facilities growth. Dependent variables include REVENUE PER CAPITA (model I), TAXABLE SALES PER CAPITA (model II), PROPERTY TAX BURDEN (model III), and TOURISM FACILITIES (model IV). The main independent variable is one-year lagged TOURISM TAXES PER CAPITA. Table 3 presents summary statistics of the variables employed in this study.

Table 3. Summary statistics

VARIABLES	N	MEAN	St. DEV.	MIN	MAX
<u>DEPENDENT VARIABLES</u>					
REVENUE PER CAPITA (log)	462	7.212022	0.3760539	6.171555	8.426391
TAXABLE SALES PER CAPITA (log)	462	9.078702	0.6216185	7.521699	10.41716
PROPERTY TAX BURDEN	462	15.11431	6.295507	6.416265	47.57124
TOURISM FACILITIES	462	607.3593	1024.37	0	6612
<u>INDEPENDENT VARIABLES</u>					
TOURISM TAXES PER CAPITA (log)	462	2.140159	1.339977	0.8382359	5.583783
<u>CONTROL VARIABLES</u>					
MSA	462	0.512987	0.5003731	0	1
FOG	462	0.6818182	0.4662754	0	1
CHARTER	462	0.2640693	0.4413142	0	1
INCOME (log)	462	10.26813	0.3104007	9.522008	11.06199
POPDENSITY (log)	462	4.897131	1.335865	2.174526	8.127713

Building on previous studies of fiscal and economic impacts of local tourism taxes (Jung, 2001, 2002; Krmenc, 1991; Ulbrich, 1996; Zhao, 2005a, 2005b; Zhao & Hou, 2008), this study examines the statistical relationships between fiscal and economic impacts and local tourism taxes of Florida counties. Based on related research, we hypothesize that the adoption of local tourism taxes is associated with increases in revenue, taxable sales of tourism related facilities, and the number of tourism related facilities and a decrease in the property tax burden of each county. Table 4 shows the result of a robust standard error model

for examining research hypotheses. The dependent variables of this study are per capita revenue (model 1), per capita taxable sales of tourism related facilities (model 2), property tax burden (model 3), and the number of tourism related facilities (model 4). The in the panel regression model is 0.18 (model 1), 0.80 (model 2), 0.21 (model 3), and 0.28 (model 4) at the 99% level.

In the revenue growth model, the coefficient of TOURISM TAXES PER CAPITA_t-1 is positively associated with REVENUE PER CAPITA and is statistically significant. This finding supports the hypothesis that local tourism taxes are associated with revenue growth (H1). In taxable sales of tourism related facilities model, the coefficient of TOURISM TAXES PER CAPITA_t-1 is positively associated with TAXABLE SALES PER CAPITA and is statistically significant. This finding supports the hypothesis that local tourism taxes are associated with increasing the taxable sales of tourism related facilities (H2). In the property tax burden model, the coefficient of TOURISM TAXES PER CAPITA_t-1 is negatively associated with PROPERTY TAX BURDEN and it is statistically significant. This finding supports the hypothesis that local tourism taxes are associated with decreasing the property tax burden (H3). In the model of tourism related facilities, the coefficient of TOURISM TAXES PER CAPITA_t-1 is positively associated with TOURISM FACILITIES and it is statistically significant. This finding supports the hypothesis that local tourism taxes are associated with increasing tourism related facilities (H4). In short, this study found that the local tourism taxes of each county are associated with increases in local revenue, increases in taxable sales of tourism related facilities, decreases in property tax burden, and increases in tourism related facilities within each county over 7 year period.

Both positive and negative relationships were found for the control variables. INCOME is positively associated with TAXABLE SALES PER CAPITA. POPDENSITY is positively associated with REVENUE PER CAPITA, TAXABLE SALES PER CAPITA, and TOURISM FACILITIES. CHARTER is

positively associated with PROPERTY TAX BURDEN and TOURISM FACILITIES. FOG is positively associated with REVENUE PER CAPITA, TAXABLE SALES PER CAPITA, and PROPERTY TAX BURDEN. MSA is negatively associated with REVENUE PER CAPITA, TAXABLE SALES PER CAPITA, PROPERTY TAX BURDEN, and TOURISM FACILITIES.

Table 4. Result of a robust standard error model

ROBUST STANDARD ERROR MODELS				
VARIABLES	MODEL I (REVENUE)	MODEL II (TAXABLE SALES)	MODEL III (PROPERTY TAX BURDEN)	MODEL IV (TOURISM PLACES)
INDEPENDENT VARIABLE				
Tourism Taxes_t-1 ¹⁾	0.0226316 ²⁾ (0.0094826) ³⁾ 2.394***	0.02020468 (0.0070539) 28.64***	-0.480262 (0.0975633) -4.92***	105.9415 (34.90648) 3.04**
CONTROL VARIABLES				
INCOME (log)	0.1787255 (0.0921314) 1.94	0.542939 (0.0355277) 15.28***	-0.0871992 (0.7315699) -0.12	31.97803 (121.8747) 0.26
POPDENSITY (log) ⁶⁾	0.0443607 (0.0141394) 3.14**	0.1461554 (0.014123) 10.35***	-0.1700725 (0.2497911) -0.68	393.0346 (103.0811) 3.81***
CHARTER	-0.016318 (0.0201697) -0.81	0.006112 (0.0102186) 0.60	1.235472 (0.1597747) 7.73***	348.8643 (153.9064) 2.27**
FOG	0.032957 (0.0174449) 1.87*	0.0911065 (0.0435205) 2.05**	4.133562 (1.339746) 3.09**	-38.2782 (110.4682) -0.35
MSA	-0.169407 (0.0286627) -5.91***	-0.1312998 (0.0412262) -3.18**	-3.748182 (0.595426) -6.29***	-323.4322 (137.8382) -2.35**
	N=386 R-square=0.18	N=393 R-square=0.80	N=386 R-square=0.21	N=393 R-square=0.28

1) One-year lagged TOURISM TAXES variable is used as a main independent variable.

2) Coefficient

3) Panel corrected standard errors

V. DISCUSSION

The levy of local optional tourism development taxes among Florida counties over the past 7-year period has had fiscal and economic impacts on revenue, taxable sales of tourism related facilities, property tax burden, and the number of tourism related facilities. As discussed, first, local optional taxes have fiscal impacts as additional revenue sources for local governments (Jung, 2001, 2002; Krmenc, 1991; Ulbrich, 1996; Zhao, 2005a, 2005b; Zhao & Hou, 2008). Second, the levy of local optional taxes reduces property tax burdens (Deran, 1968; Jung, 2001; Ulbrich et al., 1990). Third, local optional taxes have economic impacts on deliver of policy services. For instance, local optional tourism taxes stimulate local tourism development such as construction of tourism-related facilities and tourism promotion. This study explored these relationships over a seven year period.

The finding of the model of revenue per capita demonstrates that the coefficient of TOURISM TAXES PER CAPITA_{t-1} is positively associated with REVENUE PER CAPITA. This finding indicates that the levy of local optional tourism development taxes is associated with increasing local revenue. According to previous studies (Jung, 2001; Krmenc, 1991; Ulbrich, 1996), a levy of local optional taxes enhance additional revenue sources as a substitution for property taxes. Also, Zhao and Hou (2008) asserts that local optional taxes caused a fiscal disparity by enhancing additional revenue sources even though local optional taxes have different specific purposes. The finding of this study supports the results of previous research. This means that the local optional tourism development tax has a function as a way to increase local revenue.

4) Z-score

5) Numbers in parentheses are absolute z-values. *** significant at the 99% level; ** significant at the 95% level; * significant at the 90% level.

6) Transformed variable using logarithm is used for normality.

Note: year dummy is not reported here.

The finding of the model of taxable sales of tourism related facilities demonstrates that the coefficient of TOURISM TAXES PER CAPITA_{t-1} is positively associated with TAXABLE SALES PER CAPITA. This finding indicates that the levy of local optional tourism development taxes is associated with increasing taxable sales of tourism-related facilities. This finding indicates that the levy of local optional tourism development taxes leads to increase in gross sales of tourism-related facilities to promote local tourism.

The finding of the model of property tax burden demonstrates that the coefficient of TOURISM TAXES PER CAPITA_{t-1} is negatively associated with PROPERTY TAX BURDEN. This finding illustrates that a levy of local optional tourism development taxes reduces the property tax burdens of residents. As mentioned above, local optional tourism development taxes are levied on all transient rental transactions. In general, rental transactions are made by visitors. In other words, local optional tourism development taxes serve as a tool to export tax burdens to outsiders. The finding supports the hypothesis that local optional tourism development taxes reduce the property tax burdens of residents by exporting tax burdens to outsiders.

The finding of the model of tourism related facilities demonstrates that the coefficient of TOURISM TAXES PER CAPITA_{t-1} is positively associated with TOURISM FACILITIES. This finding indicates that the levy of local optional tourism development taxes promotes local tourism by increasing the number of tourism related facilities. In other words, the finding shows that local optional tourism development taxes perform the policy objective of including construction of tourism related facilities and tourism promotion.

VI. CONCLUSION AND IMPLICATIONS

The main purpose of this study is to investigate the fiscal and economic impacts

of the levy of local optional tourism development taxes in Florida counties. Based on previous studies regarding local optional taxes, this study examines whether local optional tourism development taxes help to enhance financial resources, improve public policy services, or develop economic status. The empirical findings show that the use of local optional tourism development taxes improves financial status, enhances additional tax revenue sources, reduces property tax burdens, and fulfills tax policy goals - promoting local tourism. Thus, the use of local optional tourism development taxes has achieved the objectives behind authorization of the tax. This study provides research contributions on the fiscal and economic impacts of local optional tourism taxes. First, this study focuses in the fiscal impacts and economic impacts of local optional tourism taxes, unlike most of the previous studies that examines the fiscal impact of local optional sales taxes. This study finds that local optional tourism taxes have fiscal and economic impacts on revenue growth, property tax burdens, and tourism industry. This means that the research findings regarding the fiscal and economic impacts of local optional tourism taxes contributes to the theories on the fiscal and economic impacts as local optional taxes. Second, this study makes a significant new contribution to research in terms of using longitudinal panel measures of revenue size, property tax burdens, and local tourism industry. While some studies have used cross-sectional and panel data regarding fiscal outcomes related to local optional sales taxes, this study provides a more dynamic effect by studying the fiscal and economic impacts of local optional tourism taxes relative to counties' fiscal and economic status using panel data covering the past 7 years.

This study provides a practical implication as well. An adoption of local optional tourism taxes helps to improve fiscal soundness of local governments. The findings show that local optional tourism development taxes have a function to increase local revenue size by enhancing additional revenue sources, lead to increase in gross sales of tourism industry, reduce the property tax burdens of residents, and promote local tourism industry. Therefore, the findings suggest that

financial officials should be aware that fiscal soundness can be achieved by adopting local optional taxes as well.

It seems that the result of this study might provide with policy implications in Korean local governments. Certainly, many different things exist between Florida counties and Korean local governments in terms of fiscal institutions including local tax system. For example, Korean local governments cannot levy local optional taxes without provision of law. However, all local governments in Florida and Korea seek to fiscal soundness by increasing own-source tax revenues. Likewise Florida counties try to increase tax revenue sources and decrease reliance on higher levels of government through increasing tax revenue sources, Korean local governments try to seek to obtain stable own-source tax revenue sources. With respect to increasing local own-source tax sources, the fiscal and economic impacts of tax revenues in Florida counties might have policy implications to Korean local governments. Currently, Korea central government has tried to increase local fiscal capacity by transferring national taxes to local taxes (local income tax and local sales tax). Thus, in terms of local fiscal capacity, this study can provide a policy implication to levying additional local taxes.

This study has constructed fiscal data from Florida counties for examining fiscal and economic impacts of local optional tourism development taxes. However, this study has its own limitations because it employs a single state study during a limited time period of seven years. To generalize implications across states, this study should be replicated in other states and other nations. Second, the time frames affecting local tax policy can be relatively long. The limited time period of this study might not fully capture variations in fiscal and economic impacts of local optional tourism development taxes. In her important book of case studies of budgeting in American studies, Irene Rubin (1998) discovered that it was necessary for her to trace cities' histories back to the late 19th century. Events in conditions that occurred long ago can have contemporary effects. The panel data in this study is considerably long than the data used in much

contemporary literature, but might not encompass a time period that is long enough to capture some effects.

With regard to the limitations of this study several studies need to be conducted. To overcome limitations of generalization, future research needs to employ comparable panel data from other states and other nations. Since states and nations have different kinds of historical, political, fiscal, and socioeconomic characteristics, future studies using data from other states and nations should help to better understand in interactions of these kinds of variables. In addition, future research would conduct revised research model using each local optional tourism tax for analyzing the impacts of each local optional tourism tax on local finance and economy.

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<Appendix A>

Levy of Local optional tourism tax in Florida counties (FY 2004–FY 2010)

County	2004		2005		2006		2007	
	Rate (%)	Revenues (USD)	Rate (%)	Revenues (USD)	Rate (%)	Revenues (USD)	Rate (%)	Revenues (USD)
Alachua	3	1605746	3	1760179	3	2015874	3	2261458
Baker	2	30090	2	33991.43	2	32068.79	2	34829.01
Bay	3	4458750	3	6244755	3	5519645	3	6176514
Bradford	2	51619.61	2	52447.68	4	52859.76	4	67603.45
Brevard	4	5850024	4	6954791	5	8523943	5	8644388
Broward	5	30672888	5	35261053	5	38854755	5	40109275
Calhoun	0	0	0	0	0	0	0	0
Charlotte	3	1383512	4	1367457	5	1625592	5	1855793
Citrus	2	507455	3	538288	3	554297	3	586350.6
Clay	3	358462	3	373325.9	3	378711.1	3	387437.6
Collier	3	9399902	4	10602641	4	13055746	4	14154560
Columbia	2	325436.7	2	375374.2	2	421438.5	2	400591.8
DeSoto	0	0	0	0	0	0	0	0
Dixie	0	0	0	0	0	0	0	0
Escambia	4	5077189	4	5132479	4	4523809	4	4760098
Flagler	2	380955.2	3	611402.3	3	781558.3	3	879427.8
Franklin	0	0	2	0	2	669849.2	2	716364.2
Gadsden	2	29709.07	2	29355.01	2	39221.23	2	64926.13
Gilchrist	0	0	0	0	2	0	2	8279.53
Glades	0	0	0	0	0	0	0	0
Gulf	3	305219	3	350076.2	4	304274	4	566868.6
Hamilton	3	33428.56	3	36412.36	3	47360.76	3	51700.7
Hardee	0	0	0	0	0	0	0	0
Hendry	2	87735.24	2	105705.8	3	131540.8	3	149985.1
Hernando	3	297473	3	358101.6	3	378102.5	3	423462.6
Highlands	2	264623.8	2	330177.9	2	354937.9	2	346186.6
Hillsborough	5	15810389	5	19329609	5	20423034	5	22062039
Holmes	0	0	2	0	2	10679.69	2	8417.65
Indian River	4	1497028	4	1834625	4	1583239	4	1506757
Jackson	2	147377.2	4	331216.3	4	349383.9	4	340249.1
Jefferson	0	0	0	0	2	0	2	9552.44
Lafayette	0	0	0	0	0	0	0	0
Lake	4	1800244	4	2055573	4	2285587	4	1956232
Lee	3	12141057	5	11624710	5	17030455	5	22439106
Leon	3	2256942	4	2905081	4	3368370	4	3478717

Levy	2	134722.6	2	138896.9	2	161520.8	2	169964.8
Liberty	0	0	0	0	0	0	0	0
Madison	3	68045.62	3	77531.16	3	86870.86	3	94504.5
Manatee	4	3684692	4	4381286	4	4760435	4	5015264
Marion	0	0	2	0	2	1128787	2	1131260
Martin	2	579129	2	684321.7	2	676538.1	2	620505.7
Miami-Dade	6	18490735	6	22171300	6	25026368	6	26723245
Monroe	4	13840916	4	14393102	4	14179131	4	14596878
Nassau	2	1382501	2	1672216	2	1563143	2	1684623
Okaloosa	4	7775388	4	7972025	4	7364642	4	8235823
Okeechobee	3	186986.9	3	222757.2	3	227557	3	213771.8
Orange	5	1.06E+08	6	1.2E+08	6	1.26E+08	6	1.56E+08
Osceola	5	23284801	6	32479855	6	33006865	6	33220921
Palm Beach	4	19361835	4	22264005	5	23540140	5	26106426
Pasco	2	680450.4	2	717044.2	2	812194.6	2	755174.4
Pinellas	4	17104139	5	18239638	5	21651449	5	24618173
Polk	4	4481350	5	6815733	5	6865548	5	7333343
Putnam	2	108835	2	116867.2	2	111549.3	2	113930.8
Saint Johns	3	4415735	3	4982896	3	5287649	3	5477472
Saint Lucie	5	2370800	5	2683096	5	2817739	5	2540797
Santa Rosa	3	265170	4	406277.1	4	432348.3	4	815194.9
Sarasota	3	6606686	3	7524007	4	7432635	4	8066222
Seminole	3	1750467	3	2609959	3	2638237	3	2455641
Sumter	0	0	2	0	2	278306	2	292268.7
Suwannee	2	84126	2	97578.53	2	102921.2	2	106869.2
Taylor	2	103864.5	3	101656.3	3	126393	3	153478.3
Union	0	0	0	0	0	0	0	0
Volusia	6	6267529	6	5802660	6	8134433	6	7890168
Wakulla	3	22846	3	26204.8	3	34114.09	3	39818.57
Walton	3	7586669	3	9022044	3	8744089	3	10256304
Washington	2	34530.21	3	59283.97	3	56635.78	3	92015.35

County	2008		2009		2010	
	Rate (%)	Revenue (USD)	Rate (%)	Revenue (USD)	Rate (%)	Revenue (USD)
Alachua	3	2073635	3	1800262	5	2133368
Baker	2	27035.4	2	24363.08	2	19568.37
Bay	3	6618463	5	8582659	5	11605478
Bradford	4	108346	4	102488.9	4	90395.35
Brevard	5	8748306	5	7958442	5	8015293
Broward	5	42014850	5	35894543	5	34972736
Calhoun	0	0	0	0	0	0
Charlotte	5	2163375	5	1905643	5	2108416
Citrus	3	629149.7	3	605061.5	3	645493.9
Clay	3	439068.6	3	474774	3	434498.3
Collier	4	14725132	4	12704823	4	12814062
Columbia	2	391611.7	2	382942.2	3	384737.5
DeSoto	0	0	0	0	2	0
Dixie	0	0	0	0	2	0
Escambia	4	5448643	4	5301707	4	5457305
Flagler	3	908945.2	3	807736.3	4	813810.2
Franklin	2	778818	2	747725.2	2	740965
Gadsden	2	76880.95	2	87552.03	2	73830.83
Gilchrist	2	20978.65	2	20587.14	2	25540.62
Glades	0	0	2	5829.74	2	16436.99
Gulf	4	674779.6	4	679081.4	4	752334.3
Hamilton	3	44395.75	3	32858.71	3	23796.94
Hardee	0	0	0	0	0	0
Hendry	3	159426.1	3	102048.8	3	99817.24
Hernando	3	377802	3	344500.1	3	317277.7
Highlands	2	350903.7	2	320193.5	2	310915.2
Hillsborough	5	21505487	5	19036761	5	17137175
Holmes	2	8962.04	2	9552.12	2	11446.45
Indian River	4	1617915	4	1362649	4	1345189
Jackson	4	319912.5	4	260079.7	4	240393.9
Jefferson	2	32311.27	2	28181.68	2	25720.85
Lafayette	0	0	0	0	0	0
Lake	4	2340572	4	1967889	4	1901891
Lee	5	23726896	5	22249527	5	22680566
Leon	4	3414897	5	3135345	5	3585502
Levy	2	168128.3	2	147119.7	2	154512.6
Liberty	0	0	0	0	0	0
Madison	3	86270.21	3	79672.74	3	70344.41

Manatee	4	5142405	5	4970581	5	6348266
Marion	2	1074031	2	885928	2	793462.8
Martin	4	612812.1	4	954758.8	4	1042173
Miami-Dade	6	28115505	6	23006528	6	24852082
Monroe	4	16204567	5	14480757	5	19447518
Nassau	2	1531803	3	1551263	4	2348530
Okaloosa	5	9797490	5	10340392	5	10038809
Okeechobee	3	194063.9	3	156776.3	3	171027.7
Orange	6	1.7E+08	6	1.46E+08	6	1.42E+08
Osceola	6	36454246	6	29706219	6	29774757
Palm Beach	5	27756968	5	22793528	5	22953592
Pasco	2	834569.1	2	664044	2	631793.4
Pinellas	5	25960601	5	23805779	5	22754919
Polk	5	7534915	5	6767007	5	6040642
Putnam	2	184802.2	4	216829.2	4	188477.5
Saint Johns	3	5539862	3	3746731	4	4795619
Saint Lucie	5	2527901	5	1971101	5	1947905
Santa Rosa	4	899100.9	4	893366.3	4	878392
Sarasota	4	10569294	4	9655471	5	9729364
Seminole	3	2180733	5	2249282	5	2932675
Sumter	2	326998.2	2	311246.3	2	342644.2
Suwannee	2	117125.6	2	102936.3	2	100981.4
Taylor	3	172130	3	173466.4	3	179513
Union	0	0	0	0	0	0
Volusia	6	8001758	6	6855926	6	6686048
Wakulla	3	47617.37	2	41491.77	2	39821.41
Walton	4	10984511	4	10559913	4.5	11165290
Washington	3	90725.02	3	84038.15	3	78080.15



지방관광세의 재정적·경제적 효과에 관한 연구: 플로리다 카운티 지방관광세를 중심으로

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본 연구는 플로리다 카운티에 도입되어 있는 지방관광세의 재정적, 경제적 효과를 분석한다. 지난 7년 (2004년 - 2010년) 동안 많은 카운티에서 지방관광세가 도입되었으며 2010년에는 재산세, 소비세에 이어 3번째로 규모가 큰 지방세원이 되었다. 이렇게 많은 카운티에서 지방관광세를 도입하고 있음에도 불구하고 지방관광세의 도입이 관광산업의 증진, 새로운 세원의 확보, 주민의 재산세 부담에 어떠한 영향을 미치는지에 대한 연구는 거의 이루어지지 않고 있다. 따라서 본 연구의 목적은 지방관광세의 도입이 플로리다 카운티의 재정 및 경제에 미치는 영향을 분석하는 것이며 이를 통해 새로운 지방세원으로서의 지방관광세의 실증적 효과에 대한 정보를 제공해준다.

지방관광세의 카운티에 대한 재정적, 경제적 효과를 분석을 위해서 로버스트 패널 모형 (A robust standard error model)이 사용되었으며, 재정적, 경제적 효과를 측정하기 위해 지방정부의 세입 (revenue), 관광관련시설의 매출 (taxable sales of tourism related facilities), 재산세 부담 (property tax burden), 관광관련시설 증가 (tourism related facilities) 등의 변수를 사용하였다. 분석결과 플로리다 지방정부 카운티에서 지방관광세의 부과는 세입, 관광관련시설의 매출, 관광관련시설의 증가와 주민의 재산세 부담 감소에 영향을 미친 것으로 분석되었으며, 이를 통해 지방관광세의 부과가 카운티 정부의 세입 증가와 주민의 재산세 부담 감소 등의 재정적 효과와 관광관련 시설의 매출 증가와 관광관련시설의 증가 등의 경제적 효과를 가져 오고 있다는 것을 알 수 있었다.

[주제어: 지방관광세, 세입증가, 조세생산성, 재산세 부담, 관광시설, 패널분석]

논문접수일: 2014년 10월 14일 / 논문심사일: 2014년 11월 12일 / 게재확정일: 2014년 12월 18일

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