미국 플로리다주 지방정부의 정치, 제도, 도시개발에 관한 공간회귀분석연구

Politics, Institutions and Comprehensive Planning in Florida Cities: A Spatial Lag Model

강 인 성*·Richard C. Feiock**

Kang, In-Sung, Richard C. Feiock

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이 연구는 정치경제적 접근법을 바탕으로 도시성장관리에 대한 재량권 행사에 관심을 가지면서 성장관리에 영향을 미치는 공간효과를 확인하고자 하였다. 최근의 연구들은 어떻게 정부제도들이 국토개발에 대한 정책결정에 영향을 미치는 지에 관심을 가져왔다. 미국 플로리다주의 재무보고서의 재정통계를 통해 지방정부들이 각각 다르게 성장관리에 대한 재원투자하고 있음을 밝혀내면서 정책결정에 영향을 미치는 요인에 대한 관심의 폭을 넓혔다. 이러한 영향요인의 분석에 있어서 이 연구는 성장관리집행의 수요자에 해당하는 정책관련 당사자들과 도시개발과 규제의 공급자에 해당하는 지방정부 공무원들에 초점을 맞추었다. 즉 시장의 수요와 공급의 구조를 적용한 정치경제적 시장분석틀을 적용하여 분석틀을 구성하였다. 이 분석틀을 이용한 연구의 전개를 위해서 지방정부뿐만 아니라 지방

의회의 제도변수들을 살펴 보면서 플로리다 지방정부들의 도시개발비용에 대한 공간분석 모형의 통계분석을 실시하였다.

□ 주제어: 성장관리, 정치시장, 공간회귀분석

   This research focused on the exercise of discretionary powers in relation to growth management based on a political market approach and identified cities' spatial impact on growth management. Recent work has directed attention to how government institutions shape land use decisions. We build on this foundation by identifying variations in resource commitments to growth management in Florida cities based on financial data gathered from fiscal reports filed with the state comptroller. We apply a political market framework that focuses on the motivations of stakeholders who are demanders of more or less growth management activity, and government officials that are suppliers of planning and regulation. We address this framework through an empirical analysis of comprehensive planning expenditures of Florida cities that includes legislative as well as executive political institutions and controls for spatial autocorrelation with maximum likelihood estimation of a spatial lag model.

□ Keywords: Growth Management, Political Market, Spatial Regression Analysis

Ⅰ. Introduction

   Sprawling growth has produced problems such as traffic congestion, pollution, loss of farmland, spatial mismatch between the job and residential locations of skill workers, and costly infrastructure deficits in many communities(Nelson et al. 2004). However, some benefits are associated with urban expansion such as opportunities for governments to expand their revenue bases and enhance their regional political influence.

   Growth and development present political challenges because they have distributive consequences for environmental resources, power, wealth, and

quality of life in the community. Cities confronted with these challenges respond in varying ways. Even communities with the same powers, mandates, and policy instruments may use them differently, thus resulting in differences in whether cities facilitate and accommodate development or manage and restrict development. For example Ben-Zadock(2002) documented great variation in spending on comprehensive planning for growth management functions in the budgets of local governments in Florida.

The analysis that follows examines the extent to which city governments commit resources for planning and growth management activities and how these commitments are shaped by political demands and local institutions. While this question is central to debates regarding local land use regulation and growth management, it has not been adequately addressed in the literature.

Recent work has directed attention to how government institutions shape land use decisions(Gerber and Phillips 2003; Feiock 2001, 2002; Lubell et al 2005). We build on this foundation by identifying variations in resource commitments to growth management in Florida cities based on financial data gathered from fiscal reports filed with the state comptroller.

We apply a political market framework that focuses on the motivations of stakeholders who are demanders of more or less growth management activity, and government officials that are suppliers of planning and regulation(Tavares 2003; Lubell et al. 2005; Jeong 2006). Both sets of actors advance their own interests through support or opposition to growth management activities. The motivations of governmental suppliers are shaped by the incentives and opportunities provided by the political institutions of local governments (Clingermayer and Feiock 2001).

Our design addresses four limitations in the application of this approach to growth management(Feiock and Tavares 2003; Lubell et al 2005; Jeong 2006). First, extant research has focused on adoptions of specific growth management programs but neglected the resource commitments for planning, implementation, and enforcement necessary for effective programs. Second, because county level

data is easily available, most studies examine county-level growth management, even though municipal governments generally play a more significant role in the regulation of land uses. Third, only a limited set of political institutions have been studied, and fourth, spatial autocorrelation problems resulting from interjurisditional policy competition has not been adequately controlled. We address these concerns through an empirical analysis of comprehensive planning expenditures of Florida cities that includes legislative as well as executive political institutions and controls for spatial autocorrelation with maximum likelihood estimation of a spatial lag model.

Ⅱ. The Political Market for Local Growth Management

Growth Management can be defined as "the deliberate and integrated use of the planning, regulatory, and fiscal authority of state and local governments to influence the pattern of growth and development in order to meet projected needs"(Nelson et al. 2004). Based on this definition of growth management, neglected in this political market approach is the ability of government to act independently of the push-pull forces of the growth machine and antigrowth coalitions. Political rationality suggests that the consensus of the community, which might not be evident, should be determined by the elected and administrative officials(Elkin 1985).

Government's ability to act as an independent yet responsive actor depends on its ability to set up policy responses that consider urban conditions and growth goals. Growth management is an alternative government role in growth politics which relies on government's authority to institutionalize regulatory and planning powers. A broader authority can help or force local governments to equitably frame the competition of local growth politics and promote

long-term uniformity in government's approach to development and growth according to state standards.

Growth management requires a directive role by government. Government's role in growth politics provides the power to manage the benefits and costs of growth, not just exercise regulatory power over the growth machine(Turner 1990a). The clash of land based interests is central to understanding growth management decisions(Molotch 1976; Tao 2002). The stakeholders include economic interests seeking gain from development as well as environmental and residential interests seeking to promote environmental values, engage in social exclusion or protect their quality of life.

The political market framework focuses on the motivations of demanders of more or less growth management and governmental suppliers of planning and regulation. Both sets of actors attempt to advance their self-interests through support or opposition to growth management activities(Lubell et al. 2005; Jeong 2006). Growth management protects the interests of environmental interests and affluent residents concerned with quality of life. Other demanders will oppose committing resources to growth management if it might adversely redefine property rights and resource allocations, or result in negative consequences for their private interests(Libecap 1989; Eggertson 1990; Lubell et al. 2005).

We identify the three prime stakeholders in growth management as public officials, community residents, and business and development interest. In general, both elected and appointed public officials approach local politics by considering the implications of policy decisions on their individual career goals as well as a larger public interest. For residents, the impact of growth management is often defined by their income and homeownership and the implications of development for quality of life. Business and development interests have an even more direct stake in growth management because of their interest in minimizing regulatory costs and maximizing returns on investments. In the political market approach, we classify government officials as suppliers and resident and business interests as demanders.

1. Governmental Suppliers

Institutions have important functions in organizing the supply of policy outputs: institutional arrangements reduce uncertainty and increase the stability of collective choice Clingermayer and Feiock 2001). Institutions shape individual preferences, reduce transaction costs, limit alternatives choices, and provide stability to collective choices(Clingermayer and Feiock 2001). The council-manager form of government has long been viewed as a means to insulate local decisions from political pressures and high-power political incentives(Lineberry and Fowler 1967). Council-manager government may enhance local officials' ability to match development policies to specific needs, rather than to simply respond to political pressures for new initiatives.

Elected and appointed officials approach the market with different preferences and interests. Municipal charters specify the positions and powers of office. The choice between professional management "reformed" institutions and "unreformed" institutions have been thought to play a significant role in shaping the types of policies pursued and the extent to which they are actually executed and implemented. Elected executives and professional managers have different values, orientations and career objectives and incentives leading to distinctive policy preferences. If professional managers are concerned with their careers in public management, they may actively pursue polices that generate revenues and promote efficiency. In contrast, mayors and council members must appeal to constituent groups that can provide political resources to secure electoral success. Schneider, Teske, and Mintrom(1995) find the presence of a strong elected executive position in local government was related to the emergence of entrepreneurial pro and anti-growth mayors.

The structure of council representation can influence policy implementation. Gerber and Phillips(2003) argue that the organization of councils has implications for the influence of majoritarian preferences in growth policy. Large council size and the use of standing committees create high entry

barriers for advocates of managing or restricting growth(Gerber and Phillips 2003). The presence of these institutional arrangements means growth management advocates must expend substantial resources to overcome the barriers to policy enactment and implementation. Therefore, legislative systems characterized by decentralized policy making, many actors, and complex implementation procedures advantage development interests over growth management interests. We expect large councils to increase the transaction costs of implementing a growth management agenda. Standing committees on the council contribute to procedural complexity by increasing the number of actors involved in policy making. This implies additional steps in the policy process disadvantage growth management.

2. Resident and Community Interests

Resident and business interests advance competing demands regarding growth management. Resident interests are linked to income and quality of life considerations. The literature typically describes growth management as having some characteristics of exclusion, elitism, or status orientation(Molotch 1976; Navarro and Carson 1991; Donovan and Neiman 1992). Cities with higher median income and educational attainment levels tend to be most interested in growth management. Present residents extract a fiscal dividend by limiting entry to individuals with incomes and education level higher than their own.

If high income residents seek to protect the status quo and limit growth, we expect cities with the higher levels of personal income to commit greater resources to comprehensive planning for growth management. Likewise, homeowners are more sensitive to the costs of growth than renters. Homeowners have a strong interest in stabilizing the property tax by affecting growth management policy. Educational attainment has also been linked to growth management in previous research.

Growth management has clear ideological implications because it advances an active planning role for government rather than reliance on markets to manage development patterns in the community interest. Republicans not only favor less government regulation and intervention, but also advocate privatization and economic development. Meanwhile, Democrats are more supportive of environmental concerns, and government spending. Thus, we expect higher commitments to growth management in communities with a higher proportion of registered Democrats.

3. Business and Development Interests

Business and development interests focus on reducing their costs and thereby increasing profits. This motivation drives business to participate in local politics and enter cooperative agreements with other actors in local communities. Local government's need to diversify the local tax base by economic development and create jobs for local residents is congruous with interests of firms and other local actors if local government pays for or subsidizes such growth.

Certain economic sectors particularly benefit from growth and new development, particularly builders and real estate developers. Developers, builders, land speculators, and mortgage financiers are anticipated to generally to oppose land use regulation efforts. Contractors and developers have a substantial interest in land use policies because implementation of regulatory policies has consequences for the private risk and return on their investments and production activities.

Contextual Factors also plan an important role in shaping community panning and growth management efforts. In addition to city level geographic factors such as population densities and city annexations, county level factors, such as county population, county growth management policy, and unincorporated populations need to be accounted for. Cites and counties relationships

regarding growth management can be cooperative or competitive. At minimum, cities need to take into account the growth and land use policies of their county to effectively manage growth.

Ⅲ. Research Design & Estimation

The units of analysis are municipal governments in Florida. The State Comptroller reports comprehensive planning expenditures for 196 cities.[1] We seek to explain city government growth management resource commitments as indicated by their budgets for comprehensive planning and growth management. This is operationalized as municipal expenditures for comprehensive planning per capita as derived from city fiscal reports filed with the Florida State Comptroller[2]. It is difficult to measure the restrictiveness of individual communities' land use regulations because regulations are unique to each local government and there can be great variation in the specific provisions of similar-sounding measures(Ihlanfeldt 2004). Even if the regulatory provisions are similar, city government's implementation including interpretation and enforcement affects the restrictiveness of land use regulation. For example,

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[1] Comptroller reports were submitted for 196 of the 403 municipal governments in Florida. This introduces potential for sample selection bias(Heckman 1979). The spatial regression analysis described below employed a two-stage Heckman selection model. Instead of using full two-stage Heckman selection, we will proceed the steps to derivation of inverse mills ratio(λ_i). Then, substituting λ_i for Z_i score in the OLS equation, we test the null hyposthesis that "expenditure report choice and the level of comprehensive planning expenditures are independent each other." The rejection of the null means that error term of expenditure report choice is correlated with the error term of comprehensive planning expenditure. No evidence of sample selection bias was detected, allowing us to safely truncate cities for which expenditure data was not reported.

[2] Comprehensive planning expenditure item includes personal services, operating expenses, capital outlays in both city and county government.

cities may differ tremendously in terms of their willingness to grant zoning variances and enforce strict land use restrictions. For these reasons budgetary resource commitments provide a more useful measure of growth management effort.

The dependent and independent variables are presented in Table 1 along with summary statistics. The independent variables include governmental institutions, resident characteristics, business interests, and contextual factors. Information on city level political institutions and governing structures were gathered primarily from the International City Management Association's (ICMA) 2001 Municipal Form of Government Survey. For Florida cities that did not respond to the ICMA survey, mail, Internet, and/or telephone contacts were made with city clerks to obtain information on political structures.

Policy demands were measured for two subcategories: resident and business interests. Resident interests are captured by median household income, the percent of residences owner occupied, percent of residents that are more than high school graduates, and percent registered as Democrats. Business groups encompass builder and developer interests. The influence of builder and developer organizations is captured by the average firm size of construction and real estate firms as reported in Zip Code Business Patterns.

City population density and the land area change from 1990 to 2000, an indicator of annexation, are included as controls. County-level planning and growth management expenditures as well as the percent of the county population residing in unincorporated areas are also included in the model[3]. The city level contextual variables were derived from the 2000 Census and County data for county population, planning expenditure, and number of cities, unincorporated population came from Florida Statistical Abstract(2000).

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[3] Depending upon the number of cities and unincorporated populations in a county, per capita growth management expenditures would be changed. Considering the unincorporated population size greater than the city's, county's per capita expenditure is smaller than the city's.

<Table 1> Descriptive Statistics for Spatial Analysis

Variable	Mean	Std. Dev.	Min	Max
Growth Mgt. Expenditures($)	39.92	125.82	0.23	1,571.98
Form of Government	0.31	0.47	0.00	1.00
Council Size	4.28	2.35	0.00	10.00
Standing Committees	2.82	5.72	0.00	39.00
Median Income($1,000)	41.6	23.8	14.9	200.0
Home Ownership(%)	20.4	0.7	0.2	49.0
Education	78.99	14.48	0.00	100.00
Democrat(%)	48.7	15.6	24.0	94.0
Avg. Construction Firm Size	10.41	2.74	3.00	14.80
Avg. Real Estate Firm Size	6.66	1.97	2.50	12.06
Density(1,000mile)	2.41	2.44	0.07	15.23
Land Area Change	29.82	143.76	0.00	1,941.80
County Population(1,000persons)	692.1	666.5	12.9	2253.4
County GM. Expenditures($)	4.80	3.57	0.00	18.77
Unincorporated Population(%)	173.0	198.0	5.0	754.0

1. Estimation

The use of cities as spatial unit raises two problems, spatial dependence and spatial heterogeniety(LeSage 1998). Spatial dependence refers to the fact that sample data observations exhibit correlation with reference to points or location in space. This type of data results in the existence of spatial hierarchical relationships, spatial spillovers and other types of spatial interactivity. Spatial heterogeneity refers to the fact that underlying relationships may vary systematically over space. This creates problems for regression and other econometric methods that do not accommodate spatial variation in the relationships being modeled. Previous research has not adequately taken into account these problems, thus calling into question the significance tests upon

which their conclusions are based. Because OLS cannot overcome the problems of spatial data, we will employ spatial regression techniques that estimates the spatial lag and the spatial error regression models by maximum likelihood.

The spatial lag model or mixed regressive spatial autoregressive model includes a spatially lagged dependent variable, Wy, as one of the explanatory variables.

$$y = \rho Wy + X\beta + \varepsilon$$
$$\varepsilon \sim N(0, \sigma^2 In)$$

where y is a N by 1 vector of observations on the dependent variable, Wy is a N by 1 vector of spatial lags for the dependent variable, ρ is the spatial autoregressive coefficient, X is a N by K matrix of observations on the(exogenous) explanatory variables with associated a K by 1 vector of regression coefficient β, and ε is a N by 1 vector of normally distributed random error terms, with means 0 and constant(homoskedastic) variances σ^2. The parameter β reflects the influence of the explanatory variables on variation in the dependent variable y(Anselin, 1980).

The presence of the spatial lag is similar to the inclusion of endogenous variables on the right hand side(RHS) in systems of simultaneous equations. The main consequence of the inclusion of Wy on the RHS of the specification is that Ordinary Least Square(OLS) no longer achieves consistency. In this model, the inclusion of Wy, in addition to other explanatory variables, provides a way to assess the degree of spatial dependence, while controlling for the effect of these other variables.

2. Specifying the Weighting Matrix

Estimation of the system requires that we determine which cities are "neighbors" or "peers" that could be the object of competition or emulation.

Since estimating the parameters of the W matrix is infeasible, its element must be specified a priori. City j is a peer of city i if the citizens and/or decision-makers of city i take into account city j's fiscal package when they are evaluating their own city's situation. However, it is not easy to find observable variables that capture if two cities are peers in this sense.[4]

There are many reasons we would expect the expenditures of one city and policy implementation to affect the policies of other cities. In this model, citizens look to other cities in order to evaluate the performance of their own legislators. In particular, suppose that consumers compare their current utilities to the utility levels they would obtain if they lived in neighboring cities. For example, legislators worry about the consequence of adverse political voice if they offer their citizens a fiscal package and policies worse than one obtainable in a neighbor city. Another consideration in the model would be fiscal competition among cities. Cities could use both expenditure and policy to compete with each other for business and citizens' well-being(Case, Hines, and Rosen 1989).

In this model, citizens might compare their well-being to people in cities that are geographically close as peer cities. In this case, decision-makers would view themselves as competing with cities that are in close geographic proximity. These considerations suggest that we set up the criteria for "peerness" or "neighborliness" based on geographic distance. We construct W matrices based on city's distance between one city and the other city.[5]

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[4] In this study we constructed weight matrix based on median income and population level. However, this model does not show appropriate goodness of fit for spatial regression analysis, so we consider the model with distance weight matrix.
 - $W_{ij} = 1/ Inc_i - Inc_j / S_i$ where Inc_i is median income in city I; S_i is the sum $\Sigma j 1/ Inc_i - Inc_j$.
 - $W_{ij} = 1/ Pop_i - Pop_j / S_i$ where Pop_i is population in city I; S_i is the sum $\Sigma j 1/ Pop_i - Pop_j$.

[5] SpaceStat software supports constructing a simple contiguity matrix by using a critical cut-off point. For this, we must compute a distance matrix from X and Y coordinates.

Model Specification

Based on the previous discussion of variables and estimation procedures, we can test the hypotheses with maximum likelihood estimation of the spatial lag model. Furthermore, we can set up the specific model to estimate the relationship between cities' comprehensive planning expenditure and explanatory variables. We develop the specific model in the equation.

Per Capita Expenditure$_i$[6] =
$a_0 + \rho$ Weight Per Capita Expenditure$_i$ + a_1 Political/Governmental Institutions$_i$ + a_2 Political Demand$_i$ + a_3 Municipal Context$_i$ + ε_i ,

Where a_0: constant, ρ: spatial coefficient, i : each city, ε: error term.
1) Political/Governmental Institutions: Form of Government, Council Size, Standing Committee
2) Political Demand: Median Income, Home Ownership, Education, Percent of Democrat, Avg. Construction Firm Size, Avg. Real Estate Firm Size
3) Municipal Context: Density, Land Area Change, County Population, County Comprehensive Planning Expenditure, Percent of Unincorporated Population

Ⅳ. Research Findings

Table 2 presents the results for the spatial regression analysis based on the distance weight matrix. After running the spatial regression analysis with the distance weight matrix to weight per capita city expenditure, we conducted diagnostic tests for heteroskedasticity(Breusch-Pagan test)[7], spatial lag

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6) Ratio of GM expenditure to total city expenditure is a preferable dependent variable. Considering growth management is population sensitive area, however, it is assumed per capita expenditure variable is fit for this model.

7) Two statistics for heteroskedasticity are reported in the SpaceStat output for the spatial lag model. One is the Breusch-Pagan test, based on the residuals from the ML stimation, but otherwise identical to the formulation used for the standard regression model. The test statistic and its degrees of freedom are reported, as well as the corresponding probability according to a $\chi2$ distribution. The proper Lagrange

dependence(Likelihood Ratio Test), and spatial error dependence(Lagrange Multiplier Test). These tests reveal that per capita comprehensive planning expenditure is significantly related to distance. In other words, one city's comprehensive planning expenditure is affected by near by cities' expenditures.

<Table 2> Spatial Regression Analysis with distance weight matrix

Variable	Per Capita Comp. Planning Expenditure	
	Coeff	z-value
Weight Per Capita City Expenditure	0.000019**	2.089907
Form of Government	9.539440*	1.653839
Council Size	2.570170	0.612634
Standing Committee	1.556180	0.855243
Median Income	0.000911**	2.126203
Home Ownership	0.000530	0.696164
Education	0.022733	0.163745
Democrat	162.2070*	1.731393
Avg. Construction Size	6.140720	1.369805
Avg. Real Estate Size	1.525920	0.293031
Density	0.003372	0.647828
Land Area Change	0.003497	0.056263
County Population	0.000006	0.204018
Comp. Expenditure	0.588420	0.198480
Unincorp. Pop.	5.192780	0.712900
IMR	76.8846	1.712354
Constant	98.13720	1.001932
N	196	
Log Likelihood	1213.38	
R2	0.1302	
Sq. Corr.	0.1173	

Multiplier test for heteroskedasticity in a spatial lag model includes some adjustments to the Breusch-Pagan framework(Anselin, 1988b).

Variable	Per Capita Comp. Planning Expenditure	
	Coeff	z-value
Diagnostics	Value	Probability
Breusch Pagan test	0.486444	0.485518
Spatial B P test	0.486444	0.485518
Likelihood Ratio Test	3.052323	1.000000
Lagrange Multiplier Test	0.868916	0.351256

Note: *p<0.1, **p<0.05

In addition to spatial competition, form of government, level of median income and the proportion of residents Democrat predict growth management spending. These results demonstrate that factors on both the supply and demand sides of the political market are critical in determining comprehensive planning expenditures. First, the distance weighted variable for comprehensive planning expenditures has a positive relationship with per capita city comprehensive planning expenditure. Thus distance between neighboring cities measured by the weight matrix is an important determinant of comprehensive planning expenditure.

In addition, related to the supply side explanation, form of government is significantly related to comprehensive planning expenditure. Consistent with earlier work(Feiock and Taveras 2003) council manager governments are pro-growth and devote less resources to growth management efforts. Professional managers' career interests are more strongly tied to economic and fiscal performance of government while elected officials furthering their political careers by being responsive to interests such as neighborhoods and environmental groups(Sharp 2004) and thus are more likely to be an anti-growth entrepreneur.

Among the resident demand factors, median income and percent Democrat exert significant influence on comprehensive planning expenditure. In other words, cities with high levels of median income and more Democrat residents

have devoted more resources to growth management. The Breusch-Pagan test reports no significant heteroskedasty problems were detected with diagnostics for spatial lag dependence and spatial error dependence.[8] Just as interesting is the result that that the size of development organizations has no influence on comprehensive planning.

V. Implications

This research focused on exercise of discretionary powers in relation to growth management based on a political market approach and identified cities' spatial impact on growth management. The analysis enhances our understanding of how cities deal with the dual pressures of competing for economic development and at the same time managing growth. Municipalities are political systems in which problems of aggregation and representation must be factored into the process by which local bundles of goods and services are set.

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[8] The Wald(W), Likelihood Ratio(LR), and Lagrange Multiplier(LM) tests are asymptotic approaches based on Maximum likelihood(ML) estimation. The three tests can be considered as different ways of dealing with an omitted variable problem.
H_0: $\lambda = 0$
H_1: $\lambda \neq 0$.
The regression model with a spatially autoregressive error term is a special case of the general spatial process model, with parameters $\rho = 0$ and $a = 0$. The likelihood ratio test is based on the difference between the log likelihood from the spatial autoregressive error model and the loglikelihood from a least-squares regression.
LR = N.$[\ln(a_0{}^2)-\ln(a_1{}^2)]$ + 2ln. $|I - \lambda W| \sim X^2(1)$
where $a_0{}^2$ is the estimated residual variance for the model under the null(without residual spatial autocorrelation) and $a_1{}^2$ is the estimated residual variance for the spatial model. The Lagrange Multiplier test is based on estimation under the null hypothesis only. The results in an easily implemented statistic, derived from OLS residuals and some additional calculations of weight matrix traces. This statistic is of the form:
LM =$(1/T).[e'We/a2] \sim X2(1)$ where T = tr $\{(W + W').W\}$(Anselin, 1988a).

This process has been described as a political market in which supply and demand forces drive policy choices. The three primary stakeholders are public officials, city residents, and local business organizations.

The most striking finding to come out of the spatial lag analysis is the importance of policy competition among cities. Planning expenditures of other cities weighted by their distance had a strong positive effect. The neglect of spatial interactions in growth management policy in existing research reveals not only that an important explanatory factor has been missed but also the empirical estimation models in previous work are likely biased.

Previous work has generalized about all local governments based primarily on empirical analysis of county governments. Our city level analysis finds support for some of the predictions of the political market framework explanation but not others. First, consistent with previous work these findings support for the hypothesis that form of government plays a key role in shaping growth policy outcomes. Mayor council government let to higher levels of comprehensive planning expenditures. Our effort to extend these ideas to the organization of city councils was not supported in the data. With regard to community demands for growth management, median income was the best predictor of comprehensive planning. This is consistent with the ideas the growth management reflects exclusionary efforts by high SES groups to protect their local quality of life.

The finding departs from previous work most dramatically with regard to the role of development interests. The same measures of developer organization influence have been influential at the county level(Taveras and Feiock 2003; Feiock 2004). This call is to question whether the finding of those studies are specific to counties or whether neglect of spatial correlations in their data resulted in them drawing false conclusions regarding developer interests.

Meanwhile, these research findings give some meaningful insight to look over and apply to local governments in Korea. First of all, related to political market approach, local government would adopt the concept of demand and

supply sides and consider factors between demand and supply to produce an efficient regional development policy. Second, with regard to local government's dual pressure between pro-growth and anti-growth, there would be competition for growth management between pro and anti-growth groups. Dealing with the opposite groups, local government could consider factors in terms of regulation, social economic status, and political background. Third, in the case of growth management in regional development, there would be neighborhood effect which interact and influence each other. It would be a good policy approach to recognize neighborhood local government's policy process and outcomes before setting up an innovative growth management policy.

Future work that applies hierarchical linear modeling which provides a solution to the question of what factors account for policy choices by city governments nested in county governments by allowing the inclusion of predictors at different levels into a single comprehensive model. Using hierarchical liner model, we can eliminate the problem of causal heterogeneity measuring variance in a dependent variable at the city level by including information from the county level. In addition, it would be necessary to set up a model which reflects heterogeneity among the governments by contextual difference, resource commitments, etc.

【References】

Anselin, Luc. 1980. Estimation Methods for Spatial Autoregressive Structures, Ithaca, New York: Regional Science Dissertation and Monograph Series

Anselin, Luc. 1988a. Spatial Econometrics: Methods and Models. Dordrecht: Kluwer Academic Publishers.

Anselin, Luc. 1988b. "Lagrange Multiplier Test Diagnotistics for Spatial Dependence and Spatial Heterogeniety," Geographical Analysis 20: 1-17.

Ben-Zadok, Efraim and Dennis Gale. 2001. "Innovation and Reform, Intentional Inaction, and Tactical Breakdown: The Implementation Record of Florida Concurrency Policy." Urban Affairs Review 36: 836-871.

Case, Anne C., James R. Hines, Jr., and Harvey S. Rosen. 1989. "Copycattting; Fiscal policies of states and their neighbors." National Bureau of Economic Research, 1989.

Clingermayer, James C. and Richard C. Feiock. 2001. Institutional Constraints and Policy Choices: An Exploration of Local Governance. Albany, NY: SUNY Press.

Department of Financial Services. 2001. Expenditure Detail for Fiscal Year Ended 2001. http://localgovserver.dbf.state.fl.us/

Donovan, Todd and Max Neiman. 1992. "Citizen Mobilization and the Adoption of Local Growth Control." Western Political Quarterly 45(3): 651-675.

Eggertson, T. 1990. Economic behavior and institutions. New York, NY: Cambridge University Press.

Elkin, Stephen L. 1985. "Economic and Political Rationality," Polity 18: 253-271.

Feiock, Richard C. 2001. Politics, Governance, and the Complexity of Local Land Use Regulation. DeVoe Moore Center Critical Issues Symposium, Tallahassee, November 4-5 2001.

Feiock, Richard C. 2002. "Growth Management, Economic Development, and the Institutions of Local Government". Journal of Urban Affairs.

Florida Statistical Abstract 2000. 34th Edition. Bureau of Economic and Business Research. Warrington College of Business Administration: University of Florida.

Feiock, Richard C. 2004. "Politics, Governance, and the Complexity of Local Land

Use Regulation." Urban Studies 41 #2: 363-774.

Feiock, Richard C., and Antonio Taveras. 2003. "County Government Institutions and Local Land Regulation," In Analysis of local land markets and the impact of market regulations, edited by Paul Cheshire and Stephen Sheppard. Cambridge:? Lincoln Land Institute.

Gerber, Elisabeth R., Justin H. Phillips. 2003. "Land Use Policy, Institutional Design, and Responsiveness of Representative Government." 2003 Annual Meeting of the Midwest Political Science Association.

Heckman, James J. "Sample Selection Bias as a Specification Error." Econometrica, Vol. 47(1) Jan. 1979

Ihlanfeldt, Keith R. 2004. "Does Growth Management Enhance Community Value?" Paper Presented at DeVoe Moore Center Workshop: Florida State University.

Jeong, Moon-Gi. 2004. Local Land Use Choices: An Empirical Investigation of Development Impact Fees in Florida, Dissertation: Florida State University.

Jeong, Moon-Gi. 2006. "Local Choices for Development Impact Fees." Urban Affairs Review 41: 338-357.

LeSage, James P. 1998. Spatial Econometrics. Dept. of Economics, University of Toledo.

Libecap.(1996). Empirical work in institutional economics. In L. J. Alston., T. Eggertsson, and D.C. North(Eds.), *Empirical Studies in Institutional Change*. Cambridge: Cambridge University Press.

Lineberry, R. and E. Fowler. 1967. "Reformism and Public Policies in American Cities." American Political Science Review 61: 701-716.

Lubell, Mark, Richard C. Feiock, and Edgar Ramirez. 2005. "Political Institutions and Conservation by Local Governments." Urban Affairs Review, 40: 706 - 729.

Molotch, Harvey. 1976. "The City as a Growth Machine: Toward a Political Economy of Place." American Journal of Sociology, Vol. 82: 309-332.

Navarro, Peter and Richard Carson. 1991. "Growth Controls: Policy Analysis for the Second Gerneration." Policy Science 24: 127-152.

Nelson, Arthur C. and Rolf Pendall, Casey J. Dawkins, Gerrit J. Knaap. 2004. "The Link Between Growth Management and Housing Affordability: The Academic Evidence." Growth Management and Affordable Housing. Editied

by Anthony Downs. Washington D.C.: Brookings Institution Press: 117-157.

Schneider, M., Teske, P., & Mintrom, M. 1995. Public entrepreneurs: Agents for change in American government, Princeton, NJ: Princeton University Press.

Tao, Jill Leslie.? 2002.? Local economic development policy instruments and issues of redistribution: Market versus government approaches to alleviating poverty in the state of Florida.? dissertation, The Florida State University.

Tarvaras, Antonio. 2003 State and Local Institutions and Environmental Policy: A Transaction Cost Analysis. Dissertation: Florida State University

Turner, Robyn. 1990a. "New Rules for the Growth Game: The Use of Rational State Standards in Land Use Policy," Journal of Urban Affairs. 12: 35-47.

U.S. Census Bureau. 2003, 2000 Census of Population and Housing: Summary Social, Economic and Housing Characteristics, Florida