

LOCAL CHOICES FOR DEVELOPMENT IMPACT FEES

MOON-GI JEONG

The University of Texas–San Antonio

This article investigates the patterns and determinants of local impact-fee adoptions. The theoretical framework combines political market approaches based in interest-group theories of property rights and diffusion theories of innovation. Event history analysis is employed to estimate impact-fee adoptions in 66 Florida counties from 1977 to 2001. The empirical results demonstrate clear spatial and temporal patterns, showing that counties experiencing rapid growth actively adopted impact fees. The findings also provide several lessons. First, the development community has a significant influence on the adoption or nonadoption of impact fees. Second, intergovernmental constraints (or incentives) affect local choice. Third, counties are more likely to adopt impact fees as more neighboring counties have adopted them. Fourth, administrative capacity is a critical resource that influences impact fee adoptions. Fifth, the results confirm that rapid growth promotes impact fee adoptions.

Keywords: impact fees; political institutions; policy innovation; local government; intergovernmental relations; growth management

The study of policy innovation has generally neglected innovations in local land-use policy. This is unfortunate because local governments have been quite innovative in establishing institutional arrangements and developing policy tools to deal with increasing demands for public services in the face of citizens' resistance to tax increases. Among these creative efforts are local development impact fees, which are innovative growth management and finance tools. The scheduled use of earmarked impact fees can not only

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facilitate infrastructure construction but also can reduce the risk of private development investment in the development permit/approval process (Nelson and Moody 2003; see also Altshuler and Gomez-Ibanez 1993). Previous studies viewed impact fees as policy instruments for local planning, growth management, and land use regulation (Nelson 1988; Yinger 1998). However, impact fees also function as growth management institutions, because they are prescribed in local ordinances as a means to resolve local fiscal stress and infrastructure deficiencies.

What factors account for local policy and institutional change? Most studies of policy and institutional change identified the important actors and the economic, social, and political environment accounting for institutional change (Alston 1996; Libecap 1996; Lubell et al. 2002). At the local level, some scholars focused on local political institutions such as the form of government (Clinger Mayer and Feiock 2001; Lubell, Feiock, and Ramirez 2005). While these studies identified diverse internal forces of change, they did not adequately account for intergovernmental constraints (or incentives) and neighboring jurisdictions' influence on local policy and institutional choice. This study seeks to fill that gap with an investigation of the adoption of impact fees in Florida. Furthermore, this study differs from extant cross-sectional studies of impact fee adoptions by using longitudinal analysis across counties, which allows an examination of dynamics of local policy making. There is no unique agreed-upon definition of impact fees, but impact fees generally refer to "single payments required to be made by builders or developers at the time of development approval and calculated to be the proportionate share of capital costs of providing major facilities—arterial roads, interceptor sewers, sewage treatment plants, regional parks, etc." (Frank and Dowling 1988, 3).

This study focuses on Florida counties. Florida counties have experienced rapid population growth as well as increased growth management responsibilities and mandates from the state over the last several decades. Consequently, certain Florida counties were among the early adopters of impact fees to cope with infrastructure construction.¹ Since the initial adoption by Broward County in 1977, impact fees have been an ongoing county issue for three decades.

In the following section, propositions are derived from a theoretical framework combining political market approaches based in interest group theories of property rights and diffusion theories of policy innovation. The empirical results suggest that local interest groups, higher-level institutions, contiguous counties, administrative capacity, and local growth have a significant influence on impact fee adoptions. The final section concludes with a discussion of the theoretical and policy implications of the findings and limitations of this study.

THEORETICAL BACKGROUND

The theoretical framework to investigate impact fee adoptions combines the political market framework (Alston 1996; Libecap 1996; Lubell, Feiock, and Ramirez 2005) with insights from the innovation diffusion literature (Walker 1969; Berry and Berry 1990: 1999). The political market approach identifies demanders (interest groups) and suppliers (public authorities) and assumes that both sets of actors attempt to advance their self-interests through support for or opposition to institutional rules (North 1990). The demanders may oppose institutional or policy change that adversely redefines property rights and resource allocations or results in negative consequences for their private interests (Libecap 1989; Eggertsson 1990; Lubell, Feiock, and Ramirez 2005). On the other hand, suppliers such as politicians and bureaucrats attempt to maximize their own utility or benefits, while they are often oriented to public regard (Banfield and Wilson 1963).

This study argues that by focusing on the demanders and suppliers, the political market explanation of institutional or political change is limited, because it does not fully develop how external contextual forces may promote or deter innovation. Studies of policy innovation focus on internal and external factors to explain how new ideas and programs are adopted (Berry and Berry 1990). This study draws on this distinction of internal and external forces. While the demanders and suppliers can be understood as internal, both internal and external forces can shape their preferences and strategies. External factors, such as neighboring jurisdictions' adoption of innovations, may put pressure on or provide lessons to local decision makers (Berry and Berry 1990). In addition, intergovernmental constraints systematically affect local decisions (Feiock and Carr 2001).

The theoretical framework identifies four key sets of variables: motivations of the suppliers and demanders, internal resources/obstacles, external emulation forces suggested by policy diffusion theory, and intergovernmental constraints/incentives. The following section lays out in greater detail the factors creating policy or institutional change.

MOTIVATIONS OF THE SUPPLIERS AND DEMANDERS

County Reform of Political Structures

Political market approaches identify politicians and public officials as the suppliers of institutional or policy change (Alston 1996; Riker and Sened 1996). With regard to their motivation, political systems are assumed to

provide different incentives and constraints to elected and appointed officials (DeSantis and Renner 1994; Morgan and Kickham 1999; Clingmayer and Feiock 2001). The recent reform movement in county governments has brought about lively debate regarding how the county forms of government influence local decision makers' incentives and motivations regarding revenues, expenditures, and service delivery. The reform movement at the county level has promoted "modernized" commission-administrator (or manager) and commission-elected chief executive (or mayor) forms of government as well as home-rule (or charter) authority (Benton 2002). This study focuses on the influence of the two reformed forms of government and home-rule authority on the motivations of the suppliers.²

The shift from commission form to commission-administrator and commission-elected chief executive forms of county government underscores the demand for centralized leadership, professional management, and accountability (Benton 2002). While there are variations between two reformed forms of governments, the bottom line is that they both offer dramatic differences from nonreformed county commission government in terms of incentives and constraints to local decision-makers. Home-rule authority may also influence motivations and strategies. Before home-rule authority, county governments functioned as administrative arms or political subdivisions of the state under "Dillon's Rule" (Benton 2002). Home-rule authority can allow the county to redefine judicial, legislative, and administrative power as long as the changes are not in violation of the state statutes. Overall, a reformed county government with centralized executive leadership and a home-rule charter has been viewed as better positioned to initiate new governing rules to handle increased demands and to seek new revenue sources.

Proposition 1: Modernized (reformed) counties are more likely to adopt impact fees.

The Interest of the Development Community

The demanders (interest groups) are expected to have different interests and values regarding growth management institutions in general and impact fees in particular. For example, the development community may oppose development impact fees, but citizens who value a higher quality of life may seek impact fees to cope with rapid economic development and consequent deterioration of public facilities.

The growth machine literature contends that local policy is largely determined by progrowth development and business interests (Molotch 1976; Logan and Molotch 1987). The growth machine model emphasizes the selective

benefits to growth elites including developers, builders, and real estate companies rather than collective or public benefits of the entire community (Molotch 1976; Goetz 1990, 1994). This small set of business groups is in “the privileged position” in facilitating business-friendly policies or institutions (Schneider and Teske 1993). In other words, motivations of the development community have a significant influence on the choices of local policy decision makers (Schneider 1989).

Proposition 2: The greater the political power of the development community, the lower the likelihood of adoption of impact fees.

The Interest of Antigrowth Coalition

As opposed to the contention of impact fees by the development community, antigrowth coalitions may support impact fees. Antigrowth regimes that typically consist of local neighborhood groups and environmental groups emphasize public costs of growth such as traffic congestion and environmental deterioration (Schneider 1992; Schneider and Teske 1993). The main body of this literature suggests that wealthy and educated residents are active in mobilizing antigrowth movements with great success (Logan and Molotch 1987; Logan, Whaley, and Crowder 1997). Clark and Goetz (1994) provide empirical evidence showing strong antigrowth sentiments in localities with higher incomes and educated residents.

Proposition 3: Communities with strong antigrowth constituencies are more likely to adopt impact fees.

Party Organization Interest

Party organization interest may direct local governments to actively deal with growth management through impact fees. Because Republican party interest emphasizes individual economic freedom and less intervention of governments in private markets, counties with high levels of Republican-party influences may have less likelihood of impact-fee adoptions. On the other hand, Democratic party interest is more closely aligned with environmental policy and conservation and thus supports increased roles of governments in growth management (Lubell, Feiock, and Ramirez 2005).

Proposition 4: Democratic political interest will have a positive effect on impact-fee adoption.

In addition to additive effects of the demanders (interest groups) and suppliers (public authorities) on impact-fee adoptions, interactive effects between the form of government and the demanders are examined. This study tests whether the commission form of government is more responsive to interest group activism than the reformed county government forms. The underlying rationale is that public officials in unreformed government are more likely to be susceptible to political pressures due to lack of professional management and centralized administration (Feiock and Kim 2001). In other words, the professionalism in daily administration insulates local decision making from political pressures of interest groups (Lineberry and Fowler 1967; Feiock and Kim 2001). This argument underscores the interactive effects of forms of government in relation to the demanders' interest. Forms of government have been demonstrated to play a mediating role for local policy outcomes in diverse policy arenas such as economic development (Feiock and Kim 2001).

Proposition 5: The influence of demanders on the adoption of impact fees will be greater in nonreformed counties.

INTERNAL RESOURCES/OBSTACLES

Local Administrative Capacity

Local governments having greater administrative capacity can more easily overcome the costs of institutional or policy change. Increasing demand for growth management at the local level has made fiscal administration and planning capacity more significant. DeGrove (1986) suggests that local governments face a variety of growth management challenges. Among the most conspicuous of these challenges is local administrative capacity, which is defined here as "effective management system" (see also Brace 1993). While the term "local administrative capacity" is ambiguous, the underlying message is clear in that governments with greater administrative capacity can reduce the transaction costs in the process of political bargaining with the business groups as well as implementing new policy.

Impact-fee systems require complicated formulas to calculate the amount of fees and technical complexity to implement diverse fee types (Florida Advisory Council of Intergovernmental Relations 1986, 1991). Therefore, administrative capacity is assumed to be a prerequisite to formulating impact-fee formulas and resolving technical complexity. For example, a 1986 survey by the Florida Advisory Council of Intergovernmental Relations (FACIR)

found that larger counties had a greater tendency to utilize impact fees and attributed this difference to higher administrative capacity in large counties (FACIR 1986).

Proposition 6: Counties with greater administrative capacity are more likely to adopt impact fees than smaller counties.

Debt Outstanding for Infrastructure

Infrastructure construction requires long-term financial plans and a great amount of funding. In order to share the financial burden with future generations, the principle of “pay-as-you-use” provides the rationale for borrowing money from future generations for capital projects by issuing bonds (Pagano 2002). With tax-exempt bonds such as general obligation (GO) bonds, local governments could issue debt with lower costs for the construction of infrastructure, since bondholders enjoyed federal income tax exemptions. However, the abuse of tax-exempt bond issuances for private activities during the 1970s and early 1980s led to federal restrictions on tax-exempt bond issuances of local governments through the enactment of the Tax Reform Act of 1986. Limits on tax-exempt bonds boosted financial cost for local governments. Kolo and Dicker (1993) stress that impact fees can act as an alternative to bond issues in the construction of infrastructure (see also Lee, Johnson, and Joyce 2004). This implies that when localities intend to rely less on debt financing and keep the legal debt limitations while meeting increased infrastructure demands resulting from new development, local governments are more likely to adopt impact fees.

Proposition 7: High debt outstanding for infrastructure facilitates impact-fee adoptions.

POLICY EMULATION AND THE DIFFUSION OF INNOVATION

The regional diffusion explanation assumes local policy choices are influenced by geographically proximate jurisdictions (see Knoke 1983; Berry and Berry 1990, 1999). The diffusion channel is regional, and diffusion occurs through learning and competition. Local governments experienced several legal challenges from the development community in adopting impact fees and thus faced risk and uncertainty in adopting impact fees. However, neighboring border jurisdictions’ experiences with impact fees may provide useful lessons to the jurisdictions considering these adoptions. Neighboring juris-

dictions' experiences can reveal the specific types of impact fees available, their effects on revenues and infrastructures, and complex formulas (see Berry and Berry 1990).

Proposition 8: When border counties have already adopted impact fees, a county is more likely to adopt impact fees.

Counties may also internalize the statewide experiences of impact-fee practices. The national interaction model articulated by Berry and Berry (1999) can be applied to diffusion among counties within a state. At the state level, several professional associations facilitate the dissemination of ideas and practices through interactions between county officials. These institutions include the Florida City and County Management Association, the Florida Association of Counties, the Florida Government Finance Officers Association, and the Florida Chapter of American Planning Association. Organizational theory also adds that by mimicking or learning other organizations' experiences, norms, and practices in professional associations, uncertainty in institutional change is reduced (Abrahamson and Rosenkopf 1993).

Proposition 9: Statewide adoptions of impact fees increase the likelihood a county will adopt impact fees.

INTERGOVERNMENTAL CONSTRAINTS

Intergovernmental institutions may function as incentives or constraints on local institutional or policy change (see Ostrom 1999). State growth management rules guide and coordinate local land use and development. In Florida, state requirements for capital improvement plans encourage local governments to identify innovative ways to growth management. Case laws developed through several court battles between development communities and local governments also prescribe the rational nexus standard for local land-use exactions. Tax and Expenditures Limitations (TELS) at the state level also constrain an annual increase in the amount and rate of local taxes and expenditures. In the midst of a series of restrictions, public agencies favored impact fees that could expand revenues despite the rejection of tax revenue growth (Lee, Johnson, and Joyce 2004).

Proposition 10: State legislation regarding growth management and assessment of homestead property, as well as relevant case laws, increase the likelihood of impact fee adoptions.

CONTROL VARIABLES

Previous studies of impact fees directly link population growth to impact-fee adoptions (Nelson 1988; Frank and Downing 1988). Frank and Downing (1988) stress that states that experience greater population growth account for a large number of impact-fee systems, especially California and Florida. In the same vein, a community that demands new development and infrastructure tends to employ impact-fee systems (Frank and Downing 1988). Furthermore, environmental conservation has been a critical issue in Florida, especially along coastal zones. In Florida, the way to handle growth demand along coastal zones is distinctive in the Growth Management Act of 1985. It is expected that counties containing coastal zones will actively seek to balance demands in new development and growth management than noncoastal counties.

DATA AND METHOD

DEPENDENT VARIABLE

The dependent variable in this study is impact-fee adoption.³ Fee adoption is operationalized by an effective year. If an impact-fee ordinance is effective in a certain year, that year and the years later are coded as 1 and otherwise 0. Impact-fee adoptions data for 66 counties in Florida are collected from several sources.⁴ Greg Burge (2004) has undertaken a comprehensive effort to collect this information from Florida county officials. The impact fee data are also cross-checked with reports produced by the FACIR (1991).

EXPLANATORY VARIABLES

Differences in political structures may lead to dissimilar motivations on the part of public officials (Clingermayer and Feiock 2001). Following this line of reasoning, supply-side determinants are operationalized based on political structures utilizing reformed versus nonreformed county government. A reformed county is typically characterized by both centralized executive (mayor or manager) and charter authority power (Benton 2002; see also Lubell, Feiock, and Ramirez 2005). Accordingly, the county reform is measured by those two indicators: the reformed forms of government and charter adoptions. If a county adopted a centralized executive (mayor or manager) form of government, it is coded as 1 and otherwise 0. In addition, a charter county is coded as 1 and otherwise 0. Forms of government and charter

adoptions data are obtained from several sources: the *Municipal Year Book*, local ordinances, and telephone interviews with county officials conducted by the author in April and May 2004.

The demanders (interest groups) of institutional or policy change include citizens, party organization, and the development community. This study assumes that certain groups of citizens defined in terms of wealth are expected to have dissimilar preferences regarding impact fees. For the wealth of citizens, per capita personal income is employed.⁵ Party organization interest or strength is measured by the proportion of registered Democratic party voters.⁶ There is no clear-cut and consistent measurement for developers' political strength, which potentially influences local politics. As a proxy, the proportion of development establishments with over 50 employees reported annually in *County Business Patterns* is used.⁷ The form of government is expected to mediate the influence of the demanders (interest groups) on impact-fee adoptions. The interactive effect is measured in the context of the commission form of government, which is coded 1 and other forms 0. Then, it is multiplied by three indicators of interest groups.

Administrative capacity implies the ability to handle and implement complicated impact-fee formulas. There are no clear-cut measures available for administrative capacity. Hence, this study uses per capita expenditures in financial and planning departments as a proxy measure of administrative capacity. These measures are based on the assumption that planning and financial departments with high capacity may have more personnel and resources to deal with complex formulas. Debt outstanding for infrastructure was measured by two indicators: per capita debt expenditures and debt millage rates.⁸ High debt expenditures and millage rate may constrain local governments' spending for infrastructure construction due to the legal debt limitations (Peterson and McLoughlin 1991).

Following Berry and Berry (1990), regional diffusion is measured by counting the number of contiguous jurisdictions that had impact-fee systems in previous years. The state diffusion is calculated by the number of all counties with impact fees in previous years.

Intergovernmental institutions emphasize the role of state statutes and case laws developed through legal battles between development communities and county governments. First, the effect of state statutes is operationalized by the state legislation, known as the Growth Management Act (GMA) of 1985. The GMA legislation is measured using dummy values; the years before legislation of the GMA of 1985 are coded as 0 and otherwise 1. Second, the Save Our Homes (SOH) Amendment reflects citizens' resistance to property tax increases in Florida. This amendment constrains an annual

assessment increase of homestead property. The SOH Amendment was effective in 1995 and thus, this study evaluates the post-1995 effect using dichotomous values: Pre-1995 periods are coded as 0 and otherwise 1. Third, case laws focus on three legal cases of 1983 that established the rational nexus standard for local impact fees (Juergensmeyer 1988).⁹ The case law variable is measured by dummy variables and this study estimates post-1983 effects on impact-fee adoptions.

Demands for local development are operationalized by housing permits and population growth.¹⁰ There are two types of housing permits: single- and multi-family housing permits. Population growth is measured by the annual change in population. Data on housing permits and population change are taken from the Florida Statistical Abstract. A coastal zone variable is measured using dichotomous values; if the county includes coastal zones, it is coded as 1 and otherwise 0.

The determinants of impact fees are estimated using event history analysis (EHA). EHA is used to explain an event or policy innovation that occurs during a given time period. More specifically, EHA has been widely utilized to explain state policy innovation using pooled cross-sectional and time-series data (Berry and Berry 1990; see also Box-Steffensmeier and Jones 2004). In EHA, an event (for example, policy innovation) is coded as 1 and otherwise 0. This study applies EHA to estimate impact-fee adoption (an event) at the county level.

ANALYSIS AND DISCUSSION

PATTERNS OF IMPACT-FEE ADOPTIONS

Patterns of impact-fee adoptions demonstrate whether there have been temporal or spatial variations in impact-fee adoptions across counties. Figure 1 illustrates the temporal patterns using the cumulative hazard rate of all impact fees between 1977 and 2001.¹¹ As of 2001, 37 counties have adopted impact fees with varying years of adoptions. Broward County's initial adoption in 1977 was followed by Palm Beach County in 1979. Through the early 1980s, impact-fee adoptions were relatively slow, thus the slope is flat. A rapid increase in adoption occurred during the mid- and late 1980s. In other words, the probability of impact-fee adoptions increased during this period. The pace of the spread became slower in the 1990s as many counties were already using impact-fee systems. Consistent with Rogers (2003), this pattern illustrates the social learning process of an *s*-curve.

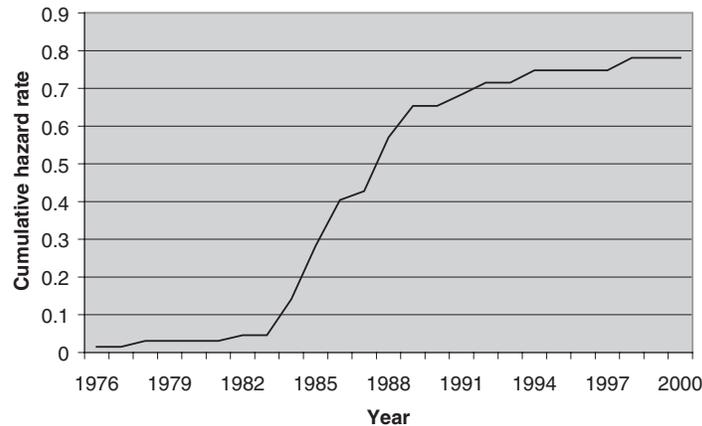


Figure 1: Cumulative Hazard Rate of Impact Fee Adoptions (1977–2001)

Table 1 reports the counties and the years of impact-fee adoptions and reveals geographical locations of counties.¹² Overall, counties with early adoptions of impact fees were mainly located in the southern part of the state, while late adoptions happened mainly in the northern counties such as Alachua, Walton, Putnam, and Gilchrist. It shows that through the 1980s and 1990s, counties located in other regions also followed the adoptions. Considering that population growth and consequent development demand were explosive in the southern area, the spread from the south to the north is understandable and consistent with previous studies (Nelson 1988).

DETERMINANTS OF IMPACT FEE ADOPTIONS

In event history analysis, the duration until an event or impact-fees adoption is assumed to change over time, and this duration dependence can be modeled using “a time counter” as one of explanatory variables (Box-Steffensmeier and Jones 2004). However, in order to diagnose the duration dependence, likelihood ratio (LR) tests between a no-duration-dependence model without “a time counter” and two-duration-dependence models with “a linear and a log linear time counter” are conducted individually (Greene 2003; Box-Steffensmeier and Jones 2004).¹³ This reveals that the probability of impact-fee adoptions is influenced by a linear time counter. Accordingly, the analysis is based on the linear-duration-dependence model. Table 2 reports logit maximum likelihood estimates for impact-fee adoptions.

Motivations of the demanders (or interest groups) play more significant roles in changes of impact fees than the motivations of the suppliers (or

TABLE 1: Spatial Patterns of Impact-Fee Adoptions

<i>County</i>	<i>Adoption Year</i>	<i>Region</i>
Broward	77	southeast
Palm Beach	79	southeast
Orange	83	central
Collier	85	southwest
Hillsborough	85	central
Holmes	85	north
Indian River	85	southeast
Lake	85	central
Lee	85	southwest
Charlotte	86	southwest
Dixie	86	north
Lafayette	86	north
Manatee	86	central
Monroe	86	southwest
Pasco	86	central
Saint Lucie	86	southeast
Volusia	86	central
Citrus	87	central
Hernando	87	central
Martin	87	southeast
Nassau	87	northeast
Pinellas	87	central
Seminole	87	central
Saint John's	88	northeast
Brevard	89	central
Leon	89	north
Miami-Dade	89	southeast
Osceola	89	central
Sarasota	89	southwest
Wakulla	89	north
Flagler	90	northeast
Marion	90	central
Polk	90	southwest
Alachua	92	north
Walton	93	north
Putnam	95	northeast
Gilchrist	99	north

NOTE: From impact-fee data collected by Burge (2004). Adapted with permission.

public authorities). More specifically, only the political power of the development community has a significant and negative effect on impact-fee adoptions. The development community resists impact-fee adoptions, which redefine or change property rights (Eggertsson 1990; Clingermyer and

TABLE 2: Logit Estimates of Dependence in Impact-Fee Adoptions

Independent Variables	No-Duration Dependence		Linear-Duration Dependence		Log-Duration Dependence	
	Coefficient	SE	Coefficient	SE	Coefficient	SE
Form of government	0.415	2.896	1.209	3.174	-0.288	2.92
Charter adoption	0.084	0.809	-0.061	0.816	-0.011	0.768
Personal income	0.0001	0.0001	0.0002	0.0001	0.0002	0.0001
Democrat voters	-0.0098	0.022	-0.003	0.026	0.0008	0.025
Business strength	-0.3124	0.188 [†]	-0.402	0.19 ^{††}	-0.303	0.19 [†]
Planning expenditures	8.1E-8	4.3E-8 [†]	8.8E-8	4.3E-8 ^{††}	7.8E-8	4.3E-8 [†]
Finance expenditures	-1.8E-9	2.2E-8	1.4E-8	2.1E-8	5.3E-9	2.0E-8
Debt financing	6.7E-06	0.0004	2.6E-4	0.0004	1.19E-4	4.3E-4
Debt millage _{t-1}	-0.631	0.979	-1.232	1.089	-9.8E-1	1.011
GMA of 1985	2.194	0.63 ^{†††}	1.582	0.728 ^{††}	2.118	0.65 ^{†††}
SOH of 1995	0.0064	0.488	-0.064	0.499	-0.0005	0.486
Case laws	1.284	0.848	2.226	0.961 ^{††}	2.605	1.57 [†]
Regional diffusion	0.269	0.15 ^{††}	0.266	0.144 [†]	0.269	0.15 ^{††}
State diffusion	-0.12	0.03 ^{†††}	-0.0013	0.053	-0.088	0.04 ^{††}
Single housing permits _{t-1}	0.0004	0.0002 [†]	0.0004	0.0002 [†]	0.0004	0.0002 [†]
Multi-housing permits _{t-1}	0.00001	0.0001	9.6E-6	0.0001	2.2E-5	0.0001
Population growth _{t-1}	0.0444	0.038	0.1027	0.06 [†]	7.3E-2	0.04 [†]
Coastal zones	1.081	0.615 [†]	0.8454	0.657	0.993	0.62
Commission income [†]	0.0001	0.0001	0.0001	0.0001	9.04E-5	9.7E-5
Commission Democrat [†]	-0.0257	0.029	-0.019	0.031	-0.032	0.032
Commission business [†]	0.072	0.272	0.121	0.283	0.0404	0.286
Time counter			-0.37	0.14 [†]		
Natural log time counter					-3.64	2.20
Constant	-5.523	2.243	-6.372	2.672	-4.62	2.29
<i>N</i>	933		933		933	
Log likelihood	-108.1		-103.6		-106.6	
χ^2	70.29		69.85		69.89	
Pseudo <i>R</i> ²	0.26		0.291		0.27	

NOTE: [†]*p* < .1. ^{††}*p* < .05. ^{†††}*p* < .01. One-tailed significance tests.

Feiock 2001; Lubell, Feiock, and Ramirez 2005). The finding confirms that local business groups exert great influence on local politics and policy decisions (Molotch 1976; Logan and Molotch 1987; Goetz 1994). However, the interactive effects between commission form and motivations of the interest groups fail to gain statistical support. One possible explanation is that while the commission form of county government may be vulnerable to diverse interests, it lacks the capacity to create new policy and institutions because the political and administrative authority is fragmented between commissions and "row officers." Reformed county government with centralized

executives and home-rule authority does not make a difference in local choice of impact fees (see also Morgan and Kickham 1999). Probably, it is not sufficient for counties to capitalize on their reform of political structures to initiate impact fees in the face of resistance from the local development community.

The proposition regarding administrative capacity gains mixed support. The relationship between expenditures for planning departments and impact-fee adoptions received strong statistical confirmation, but expenditures for finance departments did not have a statistically significant effect. The findings suggest that planning officials' professional and skilled expertise in the local planning process is crucial for the adoptions of impact fees. As shown in the legal battles and consequently the rational nexus standard, the administrative burdens to verify the rationale of fee types, schedules, and the linkages between fees and capital facilities are totally on the county governments (FACIR 1989, 1991).

External environments make a difference in the local choice of impact fees. Intergovernmental institutions provide incentives by reducing the uncertainty of local institutional change (Ostrom 1999; Feiock and Carr 2001). Florida counties experienced significant increases in impact-fee adoptions after state growth-management legislation in 1985 and several case laws in 1983. However, state constraints on an annual increase in homestead property assessment specified in the SOH Amendment of 1995 had no effect. It seems that the increase in the usage of impact fees had already started to taper off by this period, as shown in the earlier *s*-curve. Furthermore, the results provide evidence for the regional diffusion of innovation, which underscores the effect of neighboring jurisdictions' adoptions (Berry and Berry 1990, 1999). However, statewide impact-fee adoptions in previous years lack statistical significance.

Local growth patterns drive impact-fee adoptions. Consistent with Nelson (1988) and Frank and Downing (1988), population growth as well as single-family housing permits had a significant effect on the adoption as predicted. These results suggest that in the midst of rapid local growth, local governments find new creative ways to resolve fiscal problems and infrastructure deficiencies.

CONCLUSION

This study examined the patterns of local choice of impact fees and the factors that local governments should consider for that choice. Florida's experience may not be typical, because Florida applied strict state rules to

changes in local land use and growth-management policy. Despite that strictness, the state laws do not provide direct and specific guidance for local adoption and implementation of impact fees. Instead, court cases provide the legal bases for local decision to adopt impact fees. However, Florida is not unique in impact-fee adoptions among states. About 22 states currently adopted impact fees in a more or less similar way. Furthermore, the citizens' tax revolt and the deterioration of infrastructures urge local governments to be innovative in creating financial resources. Accordingly, current findings and implications of Florida counties have much potential for the study of impact fees in other states.

This study provides several policy and theoretical implications for the adoption of local policy or institutions. Changes in local policy or institutions are complex. This is because diverse channels of interests, resources, and external environment are melded in local policy decision-making. Consistent with the interest group theory, local business groups in general and development groups in particular, are well organized and actively raise concerns regarding policy changes that adversely affect their property rights. On the other hand, antigrowth coalitions and citizens are less organized and powerful in local politics (see Schneider and Teske 1993). One note that deserves mention is county reform, which has been subject to ongoing debate over the last several decades. As Ruhil (2003) pointed out, the impact of reformed political structures may dissipate over time. On the other hand, as demonstrated in administrative capacity of planning department, it may be necessary to explore the gap between political structures and the professional practices of reformed governments for better understanding of local policy or institutional change.

This study also suggests the need to examine external environment for the study of local choice of policy or institutions. The political market approach emphasizing the role and interaction between local interest groups and public authorities explains local choice in only a limited way. This is because the political market approach does not fully take into consideration external environments, including intergovernmental institutions and emulation strategies that local decision makers use to reduce political risk and uncertainty. Consistent with Ostrom (1999), local rules or institutions are "nested" within state rules, and the change of the former are constrained and affected by the latter. Local public officials can learn from neighboring jurisdictions' experiences and practices and reduce the risk of the adoption of controversial growth management policy or institutions. The diffusion theory of innovation also urges urban scholars to take into consideration emulation strategy of the successful experiences of other communities (Berry and Berry 1999). The findings demonstrate clear patterns of early adoptions in rapidly grow-

ing areas and demonstrate the social learning process of an *s*-curve in diffusion of new policy or institutions. With regard to methodology, this study suggests that longitudinal analysis across counties provide better model specification in understanding dynamics of local policy making than one-time cross-sectional comparison.

NOTES

1. As one of the vanguard states on impact fees, Florida is unique in that court cases rather than state laws provided the legal bases of impact-fee adoptions and implementations. However, as many American counties have urbanized and their service delivery role has expanded over the last four decades, they have also experienced increased demands for capital projects in midst of citizens' resistance to tax increases and sought to create innovative financing mechanisms. Accordingly, Florida case provides useful lessons when local governments intend to initiate new financial alternatives such as impact fees.

2. In Florida, two-thirds of counties (45 counties) adopted commission-manager/chief executive forms of government (see also Lubell, Feiock, and Ramirez 2005). On the other hand, whereas the Florida Constitution in 1968 allowed counties to adopt home-rule charter authority, the charter adoption has been low: only 16 counties adopted the home-rule charter.

3. Since charges for water/sewer facilities are named in several ways, including connection fees and system development charges, this study excludes water/sewer fees.

4. Due to lack of consistent data, Duval County was omitted from the analysis.

5. In addition, the educational level of citizens is widely used to identify citizens' characteristics (see Lubell, Feiock, and Ramirez 2005). However, no consistent data for education is available across counties during the research period.

6. Data on registered voters have been collected biennially in even years and consequently, the measures in odd years are interpolated.

7. The development establishments relate to building, developing, and general contracting.

8. Assuming that debt outstanding in the previous year is reflected in decision making, the debt millage rate is measured in the previous year. However, debt expenditures are not lagged by one year, because counties' fiscal years begins in October of the previous year.

9. Three court cases are *Hollywood, Inc. v. Broward County* [431 So.2d 606 (Fla. 4th. DCA 1983)], *Town of Longboat Key v. Land's End, Ltd.* [433 So.2d 574 (Fla. 2d. DCA 1983)], and *Home Builders Association v. Board of County Commissioners of Palm Beach County* [446 So.2d 140 (Fla. 4th. DCA 1983)] (Juergensmeyer 1988).

10. They are measured in the previous year to ensure local growth precedes the adoption.

11. The hazard rate of impact-fee adoptions refers to the propensity of impact-fee adoptions in the next smallest interval of time given no adoption up to that time *t*. The cumulative hazard rate is calculated by integration of the hazard rate of impact-fee adoptions.

12. The Department of Community Affairs in Florida is in charge of local comprehensive planning and divides the state into five planning regions: southeast, southwest, central, northeast, and north. This study uses these designations.

13. Duration dependence implies that the risk of an event (or adoption) depends on the time. The linear-duration dependence model (LDDM) includes a time counter using $t = 1, 2, \dots, k$ time points in a no-duration dependence model (NDDM), while the log-linear-duration dependence model (LLDDM) includes a log of a time counter. In general, LR test uses the following formula:

LR = $-2(\log_r - \log_u)$, where r: restricted model and u: unrestricted model (Greene 2003). LR statistic is tested using a chi-square test. The computed value (9.09) between the NDDM and the LDDM is larger than the critical value (3.84) at the .05 significance level, while the computed value (3.12) between the NDDM and the LLDDM is less than 3.84. It implies that only LDDM is significantly different with the NDDM.

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Moon-Gi Jeong is an assistant professor in the Department of Public Administration at The University of Texas at San Antonio. His research interests are local governance, intergovernmental relations, state and local finance, and state and local economic development and growth management policy. His publications have appeared in the Public Administration Review, State and Local Government Review, and International Journal of Economic Development.