Local Choices for Development Impact Fees

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Author Biography

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Abstract

“Local Choices for Development Impact Fees”

This paper investigates the patterns and determinants of local impact fee adoption. 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 adoption in 66 Florida counties from 1977 to 2001.

The empirical results demonstrate clear spatial and temporal patterns. Consistent with previous research, counties experiencing rapid growth actively adopted impact fees. Adoptions were widespread in the mid- and late 1980s, consistent with a social learning process of an s-curve. The empirical results provide several lessons. First, local interest groups such as the development community have a significant influence on the adoption or non-adoption 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, especially population growth, promotes impact fee adoption.
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Introduction

Numerous studies of policy and institutional change have been conducted in the past decades (Altson, 1996; Libecap, 1996; Lubell et al. 2002; Lubell, Feiock, & Rimirez, forthcoming). Most identified the important actors and the economic, social, and political environment accounting for institutional change. At the local level, some scholars focused on local political institutions such as the form of government (Clingermayer & Feiock, 2001; Lubell, Feiock, & Rimirez, forthcoming). 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 study 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 & Dowing, 1988, p. 3).

Local governments have been creative in establishing institutional arrangements and producing policy tools to accommodate increasing demands for public services. Among these are local development impact fees, which are imposed on new development to pay for public facilities and help ensure orderly development. Previous studies viewed impact fees as policy instruments for local planning, growth management, and land use regulation (Frank & Downing,
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.

This study focuses on Florida counties. As many counties have been urbanized and their role in service delivery expanded, they have become the focus of increased interest (Benton, 2002). In particular, Florida counties have experienced rapid population growth and new development, especially along the coastlines. This consequently increased demands for capital projects, which were typically financed by public money through taxes or bond issues. However, citizens’ resistance to tax increases for new capital projects encouraged local governments to find new alternatives such as user charges or impact fees.

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 significant influence on impact fee adoptions. The final section concludes with discussions 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 (Altson, 1996; Libecap, 1996; Lubell, Feiock, & Rimirez, forthcoming) with insights from the innovation diffusion literature (Walker, 1969; Gray, 1973; Berry & Berry, 1990, 1992, 1999). The political market approach identifies demanders and suppliers and assumes that both sets of actors attempt to advance their self-interests through support or opposition to institutional rules (North, 1990). The demanders may oppose the institutional or
policy change that adversely redefines property rights, affects the decision-making regarding resource allocation, and results in negative consequences for their private interests (Libecap, 1989; Eggertson, 1990; Lubell, Feiock, & Rimirez, forthcoming). 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-regardingness (Banfield & Wilson, 1963). The product of institutional or policy change designed by suppliers may be somewhat different from what the demanders initially intended. This raises distributional conflicts between the demanders and suppliers. The relative political power of the demanders and suppliers can play a critical role in political bargaining (Alston, 1996).

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 & Berry, 1990, 1992; Hays & Glick, 1997). 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. Regarding external factors, neighboring jurisdictions’ adoption of innovations may put pressure on or provide lessons to local decision-makers (Berry & Berry, 1990, 1992). In addition, intergovernmental constraints systematically affect local decisions (Feiock & Carr, 2001).

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

Political market approaches identify politicians and public officials as the suppliers of institutional or policy change (Alston, 1996; Riker & Sened, 1996). With regard to their motivation, political systems are assumed to provide different incentives and constraints to elected and appointed officials (DeSantis & Renner, 1994; Morgan & Kickham, 1999; Clingermayer & Feiock, 2001). The recent reform movement in county governments has brought lively debate about 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” forms of government such as commission-administrator (or manager) and commission-elected chief executives (or mayor) as well as home rule authority (or charter) (Benton, 2002). This study focuses on the influence of the two reformed forms of governments and home rule authority on the motivations of the suppliers.

By shifting the commission form to commission-administrator and commission-elected chief executives, the reformed county underscores 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 non-reformed 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; Feiock & Tavares, 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. In other words, states have allowed more independent power in the delivery of public services and the management of fiscal administration.

Economic and demographic change resulting from urbanization generated new demands in the areas of growth management, traffic, parks, and schools. Reformed county government with centralized executive leaderships 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 (or reformed) counties are more likely to adopt impact fees.**

The demanders 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. Kelly (1997) stresses the underlying logic of impact fees:

> The service cost of new development may often be shared by all the citizens of the community rather than assessed to the developer or his client, but the cost is real and the benefit is particular. That is, while there may be some indirect benefit to the community at large from new development, there is a direct and quantifiable benefit to the developer when the community services are extended to the new site (pp.1600-1601).

The growth machine literature contends that local policy is largely determined by pro-growth development and business interests (Molotch, 1976; Logan & Molotch, 1987). The growth machine model emphasizes the selective benefits to growth elites rather than collective or public benefits of the entire community. In other words, development benefits serve “a subpopulation of influential local elites” including developers, builders, real estate companies, and local business groups (Molotch, 1976; Goetz, 1990, 1994). This small set of business groups
is in “the privileged position” in local politics (Schneider & Teske, 1993). As a result, the growth machine and/or regime is small but well organized and has financial resources to facilitate business-friendly policies or institutions. Motivations of the development community also have a significant influence on the choices of local policy decision-makers (Molotch, 1976; Schneider, 1989).

**Proposition 2: The greater the political power of the business groups, the lower the likelihood of adoption of impact fees.**

On the other hand, antigrowth coalitions may support impact fees. Antigrowth regimes typically consist of local neighborhood groups and environmental groups that emphasize public costs of growth such as traffic congestion and environmental deterioration (Schneider, 1992; Schneider & Teske, 1993). Most antigrowth regimes are reactive to urban growth and also less organized and powerful than growth coalitions. The primary obstacle to form and continue an antigrowth regime can be explained by collective action problems due to “a diffuse set of interests” (Schneider & Teske, 1993, p. 724; Burbank, Heying, & Andranovich, 2000, p. 338).

However, the main body of this literature suggests that wealthy and educated residents are active in mobilizing antigrowth movements with great success (Logan & Molotch, 1987; Logan et al., 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 anti-growth constituencies are more likely to adopt impact fees.**

Citizen ideology may direct local governments to actively deal with growth management through impact fees. Because Republican party ideology emphasizes individual economic freedom and less intervention of governments in private markets, counties with high level of
Republican party influences may have less likelihood of impact fee adoption. On the other hand, Democratic party ideology is more closely aligned with environmental policy and conservation and thus supports increased roles of governments in growth management (Lubell, Feiock, & Rimirez, forthcoming).

**Proposition 4: Democratic political ideology will have a positive effect on impact fee adoption.**

In addition to additive effects of the demanders and suppliers on impact fee adoption, 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 forms of county government. The underlying rationale is that the reformed county emphasizes professional management and centralized administration implemented by chief executives with professional training and technical experience (Feiock, Jeong, & Kim, 2003). In other words, the professionalism in daily administration insulates local decision-making from political pressures of interest groups (Lineberry & Fowler, 1967; Sharp, 2002; Feiock, Jeong, & Kim, 2003). 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, Jeong, & Kim, 2003) and morality policy (Sharp, 2002).

**Proposition 5: The influence of demanders on the adoption of impact fees will be greater in non-reformed counties.**

**Internal resources/obstacles**

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 government capacity. While the term “local administrative capacity” is ambiguous, the underlying message is clear in that local administrative capacity is valuable in coping with local needs and in promoting policy innovation.

For example, a national survey regarding sewer impact fees found that larger communities were more likely to employ sewer impact fees (Frank & Downing, 1988). A 1986 survey by the Florida Advisory Council of Intergovernmental Relations (FACIR) also 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).

Local governments having greater administrative capacity can more easily overcome the costs of institutional or policy change. Impact fee systems require complicated formulas to calculate the amount of fees and technical complexity to implement diverse fee types (FACIR, 1986, 1991). Therefore, administrative capacity is assumed to be a prerequisite to formulating impact fee formulas and resolving technical complexity. Administrative capacity can reduce the transaction costs in the process of political bargaining with the demanders as well as implementing the fees.

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

Poor financial conditions can drive communities to create innovative fiscal system (Kolo & Dicker, 1993; Lee, Johnson, & Joyce, 2004). Infrastructure construction requires long-term financial plans and a great amount of funding. 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. This implies that when localities intend to rely less on debt financing while maintaining current infrastructure services, local governments are more likely to adopt impact fee systems.

**Proposition 7: Poor financial conditions facilitate adoption of impact fees.**

**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 & Berry, 1990, 1992, 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 jurisdictions’ experiences with impact fees may provide useful lessons to the jurisdictions considering these adoptions. Neighboring jurisdictions’ experiences can reveal the specific types of impact fees available, their effects on revenues and infrastructures, and complex formulas (see Berry & Berry, 1990).

Impact fee adoptions did not occur simultaneously across counties. Rather, since the initial adoption by Broward County in 1977, impact fees have been an ongoing local issue for three decades. Local jurisdictions may emulate impact fees already initiated by neighboring jurisdictions allowing the risk of impact fee adoptions to be reduced and new enactments to be more easily justified to the public.
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 organization’s experiences, norms, and practices in professional associations, uncertainty in institutional change is reduced (Abrahamson & 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. With regard to tax and expenditures, state statutes constrain annual increases in local property tax. 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, & 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 & Downing, 1988). Frank and Downing (1988) stress that states which experience greater population growth account for a large number of impact fee systems, especially California and Florida. Population growth as well as the demands on new development is included because rapid population growth creates demand for new development such as new housing and buildings, and this demand requires increased financial resources to accompany infrastructure construction. Connerly (1988) argues that governments determine the amount of impact fees in light of the estimated demand for infrastructure accompanied by new development. In the same vein, a community that demands new development and infrastructure tends to employ impact fee systems and generates more money from diverse types of impact fees (Frank & Downing, 1988).

As a result of the rapid expansion of economic development, environmental conservation has been a critical issue in Florida (Holcombe, 1990), especially along coastal zones. In Florida, the way to handle growth demand and environmental conservation along coastal zones is distinctive in the local comprehensive planning process required by 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 non-coastal counties.
Data and Method

Dependent Variable

The dependent variable in this study is impact fee adoption. 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 adoption data for 66 counties in Florida are collected from several sources. The DeVoe Moore Center at Florida State University has undertaken a comprehensive effort to collect this information from Florida county officials (Burge, 2004). 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 & Feiock, 2001). Following this line of reasoning, supply-side determinants are operationalized based on political structures represented by reformed versus non-reformed county government. A reformed or modernized county is typically characterized by both centralized executive (mayor or manager) and home rule authority power (Benton, 2002).

County structures are divided into four categories and each category is encoded using ordinal values using two-by-two matrix: 1) non-charter and commission government, 2) non-charter and commission-administrator government/elected executive, 3) charter and commission government, and 4) charter and commission-administrator government/elected chief executive. Forms of government 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.
Demanders of institutional or policy change include citizens and the development community. This study assumes that certain groups of citizens defined in terms of wealth and ideology are expected to have dissimilar preferences regarding impact fees. For the wealth of citizens, per capita personal income is employed.\(^5\) Data on personal income are retrieved from the Florida Statistical Abstract over various years. Citizens’ ideology is measured by the proportion of registered Democratic Party voters.\(^6\) The development community’s organizational strength, which potentially influences local politics, is also examined. There is no clear-cut and consistent measurement for developers’ political strength. As a proxy, the proportion of development establishments\(^7\) with over 50 employees reported annually in County Business Patterns is used.

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 regarding the demanders.

Administrative capacity implies the ability to handle and implement complicated impact fee formulas. There are no clear-cut measures available for administrative capacity. Hence, the administrative capacity is operationalized by two indicators: per capita expenditures in financial and planning departments and receipt of the budget presentation award/certificate for excellence in financial reporting. The first measure is based on the assumption that planning and financial departments with high capacity may have more personnel and resources to deal with complex formulas. State and local governments submit the budget presentation and financial reporting practices to the Government Finance Officers Association (GFOA), which is the professional national association in the area of budgeting and financial management. Recognition of high
performances also indicates high capacity (GFOA, 2004). Local financial conditions are employed to operationalize resources/obstacles. Financial conditions were measured by two indicators: per capita debt expenditures and debt millage rates.\(^8\)

Following Berry and Berry (1990, 1992), regional diffusion is measured by counting the number of neighboring 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. Therefore, local governments are expected to find new revenue options, such as impact fees, to cope with fiscal problems. 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.\(^9\) 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 development permits and population growth.\(^10\) There are two types of residential 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 indicates whether or not counties include coastal zones and is measured using
dichotomous values; if the county includes coastal zones, it is coded as a 1 and otherwise a 0.

The determinants of impact fees are estimated using event history analysis (EHA). EHA
has been widely used to explain state policy innovation using pooled cross-sectional and time-
series data (Berry & Berry 1990, 1992; See also Box-Steffensmeier & Jones, 2004). While Berry
and Berry (1990, 1992) estimate a qualitative change or event through policy innovation at the
state level, this study applies EHA to estimate impact fee adoption 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.\textsuperscript{11} As of 2001, 37 counties
have adopted impact fees with varying years of adoption. Broward County’s initial adoption in
1977 was followed by Palm Beach County in 1979. Through the early 1980s, impact fee
adoption was relatively slow, thus, the slope is flat. A rapid increase in adoption occurred during
the mid- and late 1980s. In other words, it shows a rapid increase and the probability of impact
fee adoptions increases 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.

Table 1 reports the counties and the year of impact fee adoptions and reveals locational
differences among counties.\textsuperscript{12} Overall, counties with early adoptions of impact fees are 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).

Table 1 about here

**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 & Jones, 2004). However, in order to diagnose the duration dependence, likelihood ratio (LR) tests between 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 & Jones, 2004). 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 a logit maximum likelihood estimates for impact fee adoptions.

Table 2 about here

Motivations of the demanders (or interest groups) play more significant roles in change or status quo of impact fees than the motivations of the suppliers. More specifically, only the political power of the development community has a significant and negative effect on impact fee adoptions. A one percent increase in the proportion of development establishments on the mean value decreases the probability of impact fee adoptions by .003, when the remaining explanatory variables are held constant on the mean values. The development community resists impact fee adoptions, which redefine or change property rights (Eggertson, 1990;
This is because impact fees, as one type of growth management institutions or policy, can have distributional consequences on the development community (Clingermayer & Feiock, 2001). This finding confirms that local business groups exert great influence on local politics and policy-decision making (Molotch, 1976; Logan & Molotch, 1987; Goetz, 1994). However, the interactive effects between commission form and motivations of the demanders fail to gain statistical support. One possible explanation is that while commission forms 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 with centralized executives and home rule authority does not make a difference in local choice of impact fees (see also Morgan & Kickham, 1999; Hayes & Chang, 1990). Probably, it is not sufficient for counties to capitalize on their reform of political structures and charter adoption and to initiate impact fees due to the resistance of the local development community.

Administrative capacity gains mixed support. Financial reporting certificate/budget presentation practices gets strong statistical support, but the expenditure variables of finance and planning departments are not statistically significant. The probability of adopting impact fees in counties with financial reporting certificate/budget presentation practices is higher by .058 than the probability of counties without those practices. The results suggest that counties having employees with professional and skilled expertise are more likely to be involved in the adoptions of new policy and institutions than other counties. As shown in the legal battles and consequently the rational nexus standard, the administrative burdens to verify the rationale of fee amounts, schedules, and the linkages between fees and capital facilities are totally on the county governments. In other words, technical sophistication and implementation issues that might
function as barriers to initiation of impact fees require greater administrative capacity. This finding is consistent with previous surveys by the FACIR (1989, 1991) in Florida. Furthermore, this has implications for positive roles of administrative arrangements in improving policy outcome (Feiock & Stream, 2001).

External environments make a difference in local choice of impact fees. Intergovernmental institutions provide incentives by reducing the uncertainty of local institutional change (Ostrom, 1999; Feiock & Carr, 2002). 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. Furthermore, the results provide strong evidence for the regional diffusion of innovation, which underscores the effect of neighboring jurisdictions’ adoptions (Berry & Berry, 1990, 1992, 1999). The estimate shows that one additional border county with fees increases the likelihood of impact fee adoptions by approximately .002, given that the remaining covariates are held constant at their means. However, statewide impact fee adoptions in previous years lack statistical significance.

Local growth patterns drive impact fee adoptions. Previous studies on determinants of impact fee adoptions attributed the adoption of impact fees to local growth, especially population growth (Frank & Downing, 1988; Nelson, 1988). Consistent with Nelson (1988) and Frank and Downing (1988), single-family housing permits and population growth 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 experience may not be typical, because Florida applied strict state rules to change in local land use and growth management policy. Compared to that strictness, the state laws do not provide direct and specific guidance for local adoption and implementation of impact fees. Instead, several court cases provided legal bases for the 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. Accordingly, current findings and implications of Florida counties have much potential for the study of impact fees in other states.

This study provides several implications for local policy makers and public officials, when they intend to initiate new policy or institutions for growth management. Changes in local institutions or policy for growth management are complex. This is because diverse channels of interests, resources, and external environment are melded in local policy decision-making. 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. It is especially desirable when interest groups such as development communities that are adversely affected by the adoption have a significant influence on local politics and policy decision-making. Furthermore, the findings suggest that local public officials need to be aware of institutional constraints and incentives of higher level governments.

This study also contributes to the theory of the adoption of local policy or institutions. The findings suggest 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 the demanders and suppliers explains local choice in only a limited way. This is because this approach does not take into consideration external environment including intergovernmental institutions and emulation strategy that local decision makers use to reduce political risks 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. The diffusion theory of innovation also urges urban scholars to take into consideration emulation strategy of the successful experiences of other communities (Berry & Berry, 1999). The findings demonstrate clear patterns of early adoptions in rapidly growing 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.
Endnotes

1. In this study, administrative capacity is interchangeable with institutional capacity and is defined as “effective management system” (see Brace, 1993).

2. This study excludes water/sewer fees. Depending on jurisdiction, charges for water/sewer facilities are named in several ways: connection fees, system development charges, impact fees, etc. For impact fee adoptions, local governments should change local ordinances, while other types of charges can be changed by local resolution.

3. Due to consolidation and lack of data, Duval County was omitted in analysis.

4. The ordinal values in this study do not represent the exact interval between the numbers. Rather, counties with the higher values imply that they have a relatively more modernized system than counties with lower values. Benton (2002) measured the degree of reformed county using three categories: 1) non-charter and commission, 2) non-charter and commission-administrator or elected executive, and 3) charter and commission-administrator or elected executive. This study includes charter/commission in the third category and charter/commission-administrator or elected chief executive in the fourth category.

5. In addition, the educational level of citizens is widely used to identify citizens’ characteristics (see Lubell, Feiock, & Rimirez, forthcoming). 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 financial conditions in the previous year are 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 year begins from October in the previous year.

9. While case laws are established through several court battles, 1983 cases clarified and established the rational nexus standard for local impact fees (Juergensmeyer, 1988). 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)].

10. These indicators are measured in the previous year to ensure that local growth causes the adoption.

11. The hazard rate is defined as “the instantaneous risk of having the event at time t, given that the event did not occur before time t” (Yamaguchi, 1991, p. 9). In other words, the hazard rate of impact fee adoptions refers to propensity of impact fee adoptions in the next small interval of time given no adoption up to 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. In general, LR test uses the following formula: $LR = -2(\log r - \log u)$, where r: restricted model and u: unrestricted model (Green, 2003). LR statistic is tested using Chi-square test. For the linear duration dependence model, the computed value (11.2) is larger than the critical value (3.84) at the .05 significance level. The linear duration dependence model is significantly
different with no duration dependence model. However, in the case of the log duration
dependence model, it is not statistically significant: the computed value is 3.8, which is less than
3.84. There is no difference between no duration dependence model and the log duration
dependence model.

14. The log of the odds ratio is predicted, holding the remaining variables constant on the mean.
Then, the anti log of the predicted odds ratio results in predicted probabilities of impact fees on
the mean.
References


Figure 1
Cumulative Hazard Rate of Impact Fee Adoptions (1977-2001)
<table>
<thead>
<tr>
<th>County</th>
<th>Adoption Year</th>
<th>Region</th>
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*Note.* From impact fee data collected by Burge, 2004. Adapted with permission.
Table 2
Logit Estimates of Duration Dependence in Impact Fee Adoptions

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<tr>
<th>Independent Variables</th>
<th>Coefficient</th>
<th>Std.Error</th>
<th>Coefficient</th>
<th>Std.Error</th>
<th>Coefficient</th>
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<th>Coefficient</th>
<th>Std.Error</th>
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N: 931
Log likelihood: -102.48
Ch2: 84.5
Pseudo R2: 0.297

Note: *P= < .1; **P= < .05; ***P= < .01. One-tailed significance tests.