The Influences of Land Policy Instruments on Development Activities and the Provisions of Public Facilities

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Abstract

Taiwan's land policy has played a crucial role in stimulating economic growth since the late 1950s. For the sake of economic growth, the government promotes excessive development activities that are not related to availability of public facilities and environmental protection. In addition, rapid urbanization generates intense pressures on both the demand for and ability to support public facility investments. However, the government has long been lack of financial resources for public investment. Rather than those who create the costs, the ordinary citizens must bear the additional costs of public infrastructure resulting from new development. The level of investment in public infrastructure is highly related to the living environment as well as economic growth and foreign investment. It becomes very important how to seek innovative land policies in consideration of market factors to improve the living environment and promote the production environment. Therefore, the purpose of this paper is to explore the influences on development activities and the provisions of public facilities while the government adopts innovative land policies, such as development permit system associated with concurrency requirements and exaction charges. Finally, this paper presents some strategies for solving current development-related public facility issues.

Keywords：Land Policy, Land Development, Public Facility, Development Impact Fee, Concurrency Policy

I. Introduction

Rapid urban growth has something to do with land development in Taiwan. It is apparent that land development influences public facility needs as well as urban form. The process of urbanization indicates the demand of a large volume of public infrastructure investment and employment. But urban development has been dominated since 1950s by economy alone in Taiwan. To sustain economic growth, the devotion to infrastructure development becomes essential. However, while the government intends to establish Taiwan as Asia-Pacific Regional Operations Centers, the government has long been short of financial resources for public investment. Moreover, urban growth without balanced guidance and planning has resulted in inefficient land use, inadequate capital facilities, and inequitable resource allocation. How to improve the living environment and to promote the production environment through innovative land policies and instruments becomes very critical.

According to the definition of Kivell (1993:124), land policy is a wide set of activities whereby governments seek to influence the use, planning, ownership, price and benefits of land, especially within the process of development. Like other nations, Taiwan has adopted land policies, such as development control-related techniques to deal with urban growth issues. Among other things, zoning has played the key role in controlling land development for decades. Despite its widespread use, zoning is not a good mechanism for controlling how quickly development occurs. It is also ineffective for communities that want to grow outward gradually from their already built-up areas. The deficiency of zoning leads to leap frog development on the urban fringe. Zoning has particularly been criticized for procedural inadequacies: lax enforcement, favoritism, lack of consistency with planning, and excessive rigidly in some cases and undue flexibility in others (Platt, 1996:296).

In recent years, Taiwan has resorted to other innovative instruments of land policy and, through planning, regulation, spending, and taxation, has become increasingly active in influencing

any activities on land so as to promote the efficiency of land use and public facility provision. For example, the Seminar on "Comprehensive National Land Development," held by Council for Economic Planning and Development in 1995, suggested that "development permit system" mixed with the concept of growth management regulate land development and guide urban growth. Under this system, the government controls development activities based on performance standards in each stage, especially level of services in the first stage.

We believe that the adoption of innovative development control instruments can resolve or at least release the issues of land development and public facility provision in Taiwan. However, they may also generate issues such as fiscal resources and administrative capacity of governments, or providing negative impacts on private sectors. Therefore, the purpose of this paper is to explore the impacts on development activities and the provisions of public facilities while governments adopt innovative land policies and instruments. First of all, it discusses the theoretical background of relationship between land policy and development activities. Secondly, it analyzes the current development-related issues and governmental actions in Taiwan. Then, it explores the influences of adopting land policies and instruments, such as concurrency and exactions on the government and the land market. Finally, this paper suggests some strategies for solving current development-related public facility issues.

II. Theoretical Discussion and Literature Review

Development activities at the urban fringe are an area of recent analysis within urban economics. The fundamental questions concern when development activities should occur at the urban periphery and how quickly communities should grow outward from their already built-up areas. To these questions of optimal timing, Fagin (1955: 300) provided five well-considered motivations for regulating the timing of urban development:

1.The need to economize on the costs of municipal facilities and services.

2.The need to retain municipal control over the eventual character of development.

3.The need to maintain a desirable degree of balance among various uses of land.

4.The need to achieve greater detail and specificity in development regulation.

5.The need to maintain a high quality of community services and facilities.

For economizing on municipal costs and for improving the desired character of development based on above motivations, the government may adopt development control-related instruments, such as concurrency requirements, adequate public facilities requirements, growth phasing programs, and urban service boundaries, to influence the timing, location, pace, amount, and quality of development. For example, the use of moratoria associated with concurrency can prohibit all development from pending the resolution of levels of public facility deficiencies. That is, the timing of land development can be controlled by limiting the extension of public facilities, by restricting development to areas with the designated service boundaries, and by timed sequential zoning controls.

In general, literature argues that regulating the timing of development activities is a necessary exercise of the police power. It is believed that a series of unfortunate effects on the urban fringe will occur without government intervention (Freilich, 1974:149): (1)unbalance of growth between types of uses ; (2) inability to provide public services to match private development ; (3) soaring tax rate on property due to inefficient provision of public services ; (4) poor quality of services due to rapid growth ; (5) land speculation, poor design, uncontrolled character and quality of private development, destruction of the natural landscape ; (6)inability to implement the planning process, lack of time to develop solutions, inadequate administrative and legal mechanisms; and (7) development of negative polices concerning social, racial, and metropolitan solutions, formation of defensive incorporations and annexations, unwillingness to provide proper housing and facilities for diverse economic, racial, and ethnic group and irrational tax policies.

If we are to deal with the myriad problems concerned with the basic question of timing, we must understand the impacts of land policies and control techniques on development activities and

the provisions of public facilities. For example, Shoup (1970) applied the analysis of Wicksell (1934) in providing an answer that development should occur when the rate of increase in the development value of the land equals the interest rate. Arrott and Lewis (1979) explored the simultaneous question of structural density of development. They found that there was a relationship between development density and development timing. Mills (1980: 11) investigated the relationship between market power among landowners and land development timing. He concluded that an increase in market power among landowners resulted in a decrease in the pace of development and a consequent reduction in aggregate land-generated benefits. This result implies that through land policies and growth control techniques, such as zoning and utility-connection permits, local governments can retard the pace of land development.

Anderson (1986: 484) investigated the effects of property taxes on the timing of urban development based on the market situation, tax rate, and income stream. He argued that in a static market where the post-development income stream is unaffected by the choice of the period of development, an increase in the pre-development tax rate will accelerate the timing of development while an increase in the post-development tax rate has an ambiguous effect. On the contrary, in a dynamic market, an increase in the property tax rate will accelerate or delay development depending upon whether the market is growing or declining.

Bentick (1987:320) showed that a development gains tax will in marginal cases bring forward the timing of development unless capital profits from redevelopment are also taxed. However, Evans (1987:325) argued against the conclusion of Bentick's finding. To the question " Will the imposition of a development gains tax (DGT) result in development occurring earlier or later?," Evans contended that the introduction of a DGT will generally lead to the price of land for development increasing, which will further lead to less land being developed in any period as it is used more intensively.

Later, Bentick and Pogue (1988: 323) asserted that the effect of capital gains tax realized from development is neutral, but only if it is applied as a general tax on all capital gains arising from

redevelopment as well as initial development. According to their study, a partial tax that is applied to the gains from initial development, rather than to the redevelopment gains, favor early development.

Anderson (1993: 1) extends above relevant studies to account for the existence of externalities and to examine the character of the corresponding Pigouvian tax. He further analyzes whether a Pigouvian tax or subsidy can be designed to lead the private developer to make the socially optimal development timing decision. Anderson (1993: 8) argues that the proper corrective property tax rate increment can also be derived from and shown to depend upon pre- and post-development income streams, the externality, and timing effects on the post-development income and externality.

Unlike a tax policy, the use of impact fees as a tool for controlling growth thereby avoiding the costs associated with excessively rapid growth within an area gained popularity among the municipal governments throughout the United States during the mid-1980s (Benton and Daly, 1996: 1040). Certain types of development may be encouraged or discouraged by the impact-assessment structure. Differentiation of the fee structure from area to area can regulate development in accordance with the local growth policy, as long as the differentiation is consistent with infrastructure needs and costs (Nelson, Nicholas, and Juergensmeyer, 1990: 41).

Many researchers argue that impact fees increase the cost of production, such as the production of new housing, and then pass impact fees forward to purchasers of housing. For example, Huffman et al. (1988) relied upon a theoretical analysis to conclude that home buyers, renters, or non-residential tenants would pay the major share of development impact fees in the long run. Under an empirical examination of the effect of impact fees on the housing market, Singell and Lillydahl (1990: 90) concluded that impact fees do indeed have a significant effect on the price of new homes and that home buyers bear the incidence of such fees. Nevertheless, Nelson, Frank, and Nicholas (1992: 64) investigated the impact-fee program of Sarasota County, Florida and concluded that impact fees are a positive influence on urban development. They further argued that impact-fee policy improves certainty of land development proposals, generates revenue to

extend facilities that benefits, in effect, the very developers who pay the fees, eliminates much of the ad hoc process of exaction negotiation, and treats similar development proposals similarly.

From the above literature, we may infer that the factors which influence the timing of development activities and housing market may include, but not limit to, market character (static or dynamic), tax rate, income stream, development density, development gains tax, the market power among landowners, impact fees, and market structure. Accordingly, we may conclude that the government should carefully study market situation and examine any side effects before and after adopting development control-related land policies.

III. Current Development-Related Issues and Governmental Actions in Taiwan

While urbanization keeps pace with industrialization and commercialization, the population increased from 4.62 million in 1961 to 16.56million in 1996, an annual increase of about 0.33 million in the urban area. The rapid pace of urbanization created a remarkable demand for the provision and maintenance of public facilities. Traditionally, national economic growth has resulted in the expansion of public facilities through regular taxes and charges imposed on all residents and properties. In general, the government assumes the responsibility for expanding the required public facilities.

With the increasing demand for urban services and governmental fiscal problems, many countries have increased their demands on developers, requiring that they pay for a greater share of the development-generated infrastructure costs. Malaysia and South Korea, for example, have already enacted laws that allow local governments to levy user charges for a wider variety of services and infrastructure. Over the decades, development activities in Taiwan were almost always free from the responsibility of internalizing their negative impacts on the carrying capacity of land, public infrastructure, and environmental resources. Relatively speaking, the governments assume responsibility for installing public facilities and services to meet the needs of new development.

Consequently, developers and landowners incorporate the outcome of public facility capitalization into their land values. Windfalls for landowners are increased, particularly when the government permits land conversions in remote areas and must extend the costly public infrastructure.

Lai (1998b: 135) estimates that about 10,000 hectares of farmland are converted to other uses annually, much of which is on the edge of urban Taiwan. Rapid urbanization and land conversions on the urban edge in Taiwan generated intense pressures on both the demand for and ability to support public facility investments. Table 1 clearly shows that 32.5 percent of the total planned public facility area has not been expropriated by the end of 1997. The existing level of service has led to inconveniences in daily life and the deterioration of urban life. For example, Table 1 illustrates that 36.9 percent of planned roads and even 41.4 percent of planned parking facilities had not been expropriated. In addition, 32.69 percent of the planned area backlogs before 1976 still remain (Lai, 1998a: 5-5). To date, no city in Taiwan Province has enough funding sources to support public facility investments. In addition to the existing public facility backlogs, the replacement of obsolete or worn-out facilities and the desired demand for future development activities also add to the fiscal burdens. As a consequence, the problem of public facility backlogs has eventually led to environmental degradation.

Table 1 : Level of Capital Investments in Public Facilities in Taiwan Province

Item	Planned Public Facility (hectares)	Expropriated Area (hectares)	Not Expropriated Area (hectares)		
			Publicly	Privately	Rate (%)
Roads	24,435.2700	15,413.0370	1,257.3926	7,764.8404	36.9
Schools	9,143.5700	7,680.9885	434.4109	1,028.1625	16.0
Administrative Authoritiese Auths	4,206.0300	3,432.1062	233.1580	540.7658	18.2
Parks	9,974.3100	6,639.8979	1,376.8848	1,957.5273	33.4
Markets	554.0600	211.5493	51.4670	291.0437	61.8
Car Parks	498.7200	292.4061	49.6081	156.7058	41.4
Green Areas	1,494.5500	62.2265	395.3158	1,037.0077	95.8
Squares	253.3100	160.1783	19.9382	73.1935	36.8
Fields	649.6400	534.5891	33.6825	81.1884	17.7
Cemeteries	1,213.3100	1,053.3977	74.6763	85.2360	13.2
Gas Stations	103.5600	35.1139	40.7085	27.7376	66.1
Power Substations	105.7200	98.1188	2.5455	5.0557	7.2
Railroad Facilities	1,769.4000	1,593.4113	56.7534	119.2353	9.9
Harbor Facilities	5,544.2200	1,788.2639	3,611.1688	144.7873	67.7
Playgrounds	575.6900	145.7649	102.4449	327.4802	74.7
Social-Educational Organizations	99.6000	99.6000	0.0000	0.0000	0.0
Other	13,158.4300	10,557.8913	732.3034	1,868.2353	19.8
Total	73,779.2100	49,798.5407	8,472.4668	15,508.2025	32.5

Source: Department of Reconstruction, Taiwan Provincial Government, R.O.C., Dec. 1997.

Based on the aforementioned issues, Council for Economic Planning and Development suggested "development permit system" to regulate land development and guide urban growth. Then, it also developed the so-called "Comprehensive National Land Development Plan" associated with the concepts of protection of the ecological environment, of improvement of the living environment, and of development of the production environment. This Plan recommended concurrency requirements for a strategy associated with development permit system that consists of

three stages with planning permit, development permit, and building permit. Under the guideline of respecting market mechanism, developers or landowners should apply for permits based on several performance standards, especially the level of service at development area. The government is also developing exaction charge programs. Developers may choose to wait for the expansion of public facilities by governments. Or, they pay exaction to satisfy the concurrency requirements.

Concurrency is a land-use regulation that controls the timing of land development and population growth. This requirement asserts that the public infrastructure-- such as public water and sewer, transportation, and school and other social service facilities-- should be planned and built before users and residents arrive. Its purpose is to ensure that certain types of public facilities and services needed to serve new areas are developed and made available contemporaneously with the impact of new development (Boggs and Apgar, 1991). It can achieve the fiscal controls of public facility provisions.

The premise of achieving the concurrency requirement is to assure the availability of public services. This issue always challenges local governments' financial capabilities and their policy feasibility to meet basic needs in the United States. The Taiwan government also fails to deal with this issue. Again, development approval is frequently not related to the availability of public facilities in Taiwan. This results not only in service provision being more costly but also pulls down the quality of life. When local governmental units are short of financial sources, the concurrency policy becomes especially unattainable. With an eye toward reduced revenues, communities in the United States have adopted various approaches to encourage a compact urban form or to contain the expansion of infrastructure to avoid unnecessary sprawling development. In fact, the implementation of concurrency policy may achieve the effect of compactness and reduce urban sprawl.

The crux is how to link the permit system to the adequate level of services when Taiwan's Urban Planning Law, article 17, providing similar character to concurrency, regulates the location and timing of new development, generally based on local development trends, financial resources,

and the availability of public facilities. In Taiwan, which lacks sufficient public facilities and services, high population density depletes the existing facilities. Therefore, the existing level of public facilities will result in both marginal cost and average cost increase over the long term. Because of fiscal difficulties, the delay by the local governments in Taiwan in the installation of public facilities will exacerbate this outcome. The crux is to create a planning-based capital improvements plan and to create a new financial source.

Florida, Georgia and Maine, for example, mandate that the local government prepare capital improvement plans while developing comprehensive plans to ensure adequate public facilities to meet the demands of new developments (Lai, 1998a). Several approaches are designed to channel development inside the urban service/growth boundaries or phased lines in a way that coincides with the availability of public facilities and services. These considerations are intended to reduce the short-term marginal cost so that the long-term average cost can be reduced. They also suggest that by enhancing service efficiency, the public and private sectors will benefit. Wickersham (1994: 507) contends that from an economic viewpoint, steering new development to settled areas, where transportation and other public services are already available, keeps taxes and other costs low, thus strengthening the competitive position of businesses. In fact, Taiwan's urban plans, without coordination with public facility planning and capacity result in the existing public facility backlogs and huge fiscal burdens. In this regard, perhaps, using the concurrency requirements to marshal urban development is worth striving for.

IV. Impacts on the Government and Land Market

In this section, this paper discusses the repercussion among government burdens, private developers, and the impact on homebuyers resulting from the concurrency implementation and exaction charge.

A. Government Capability

A concurrency policy demands a constantly updated management information system that has current data showing existing infrastructure deficiencies, desired future growth, and replacement of obsolete or worn-out facilities. The system must also indicate and set levels of service for specific facilities. In fact, the updated data have been, except for rare exceptions, non-existent in the local government planning process in the United States. For example, Florida established the strongest concurrency requirement in the nation. This "pay-as-you-grow" requirement specifies seven public facilities and services (roads, sanitary sewer, solid waste, drainage, potable water, parks and recreation, and mass transit) for which local governments must establish the level of service standards within local comprehensive plans. Washington State requires two facilities, transportation and open space. Development permits are not to be issued by local governments unless the necessary facilities and services are available concurrent with the impacts of development.

More important is how to make up existing infrastructure backlogs and even to satisfy desired future needs that result in remarkably fiscal burdens to all levels of governments. Indeed, however logical the concurrency requirement may be, the costs to catch up and keep up are great. Yet this requirement ignores the question as to who will pay for additional infrastructure and how its development will be financed. Thus, far, no state in the United States has fully solved the funding needs to fully implement the system.

Governmental capacity and administrative efficiency suffer from insufficient funding to local bodies for those activities. As a result, no fund for hiring adequate planning staffs delays the process of implementation. Stuart (1994:16) also argues that the concurrency requirement ignores the impacts of development moratoria (delay) on community development, affordable housing, and other issues of public concern. Therefore, although concurrency appears on its face to be a reasonable and logical policy, its feasibility in practice may be difficult and troublesome. Especially, concurrency may influence the timing of land development and the costs of developers.

The lack of adequate funding and data is a universal problem from which Taiwan cannot exclude itself. Taipei municipality has the best- qualified planners in Taiwan. With more funding from the central government, it still suffers from a shortage of staff planners, as do other cities and localities. It is predicted that small local bodies will experience a greater fiscal impact than will large cities in implementing the concurrency policy because small local bodies often had less funds to plan comprehensively in the past, leading to a lack of staff planners and databases. For the lack of manpower and data, policy implementation usually yields an ineffective result and produces a great deal of illegal activity in the society. For example, in Taipei municipality, the treatment for infract the laws of construction occurred in 16,839 cases in 1993, compared to 546 cases in 1973 (Taipei Municipal Government, 1994:442). This indicates that the lack of manpower for detecting development activities has adversely affected the urban landscape. Likewise, it undermines the effective execution of the planning function and policy.

B. Impacts on Private Developers

The concurrency requirement seeks accommodation of growth where there exists adequate infrastructure capacity and restrictions on growth in which capacity is overburdened or absent. Under this requirement and because of governmental funding problems, the impact on private developers is remarkable, especially while the private enterprise owns a piece of land or intends to invest in a given area without adequate levels of service. The timing of land development is influenced. In this respect, the private developers have three alternatives:

1.To Wait for the Orderly Establishment of Public Facilities

The developers have to await the orderly expansion of infrastructure to their desired areas. The uncertain waiting period often produces huge opportunity costs on developer because of development delays. The waiting duration generally depends on the governmental funding ability. The longer the waiting period, the higher the costs to developers. Moreover, the implementation of concurrency policy may result in the constraints on the supply of the developable land, which

generally drive up land prices and hence development costs. This, however, indicates that the burdens may fall upon the potential purchasers. Thus, the fiscal problems arising out of such concurrency requirements will largely affect from governments, to private developers, and finally to purchasers.

2.To Pay for Growth

It is expected that traditional means of infrastructure finance would continue under concurrency. The major change would be that developers or landowners would face moratoria if public facilities are inadequate unless developers or landowners choose to make the facilities adequate. In this respect, if regulation allows development to proceed where the developer is willing to pay the cost to mitigate the impacts of its development, this then opens up additional means of raising revenue to finance facility expansions. Thus, in the absence of adequacy, if developers do not want to wait, then they could directly contribute toward the construction of public improvements. In terms of economic benefits, the private investment in infrastructure must be based on the condition that the land value increment after investment is greater than the cost of the infrastructure the developers pay.

Impact fees, dedications of land, special assessments, and other types of exactions are all means of providing public facilities by private developers. Many developers realize that the alternatives to these approaches and the facilities for which they are invested are moratoria and development delays due to inadequate facilities. Such approaches, however, tend to raise the cost of development. Basically, the land market will capitalize the levels of service into the land value. The capitalization of inadequacy will then reflect the cost of making facilities adequate. This cost may finally translate into housing prices. However, the final incidence of the fees, indeed, depends on several factors, such as the elasticity of supply and demand, market characteristics, housing substitutability, interest rates, and local economic conditions.

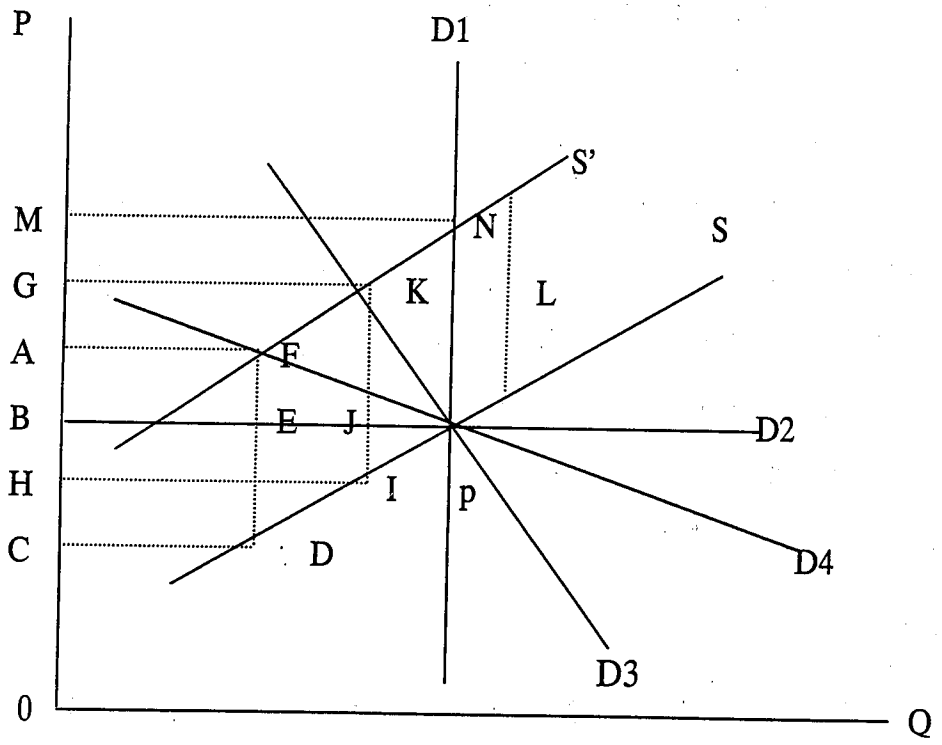

Figure 1: Demand Elasticity and The Impact of Exactions on Home Buyers

In figure 1, D1 and D2 represent two different housing demand curves. While demand curve D1 is perfectly inelastic, the burden of MBPN may pass on to the housing purchasers. On the contrary, while demand curve D2 is perfectly elastic, the levy of fees on developers will not influence the burden of purchasers. In a real world, however, elasticity of demand normally locates between D3 and D4. D3 and D4 represent housing demand curves for people X and people Y respectively, where demand elasticity of Y is higher than that of X. Now, if governments charge the amount of exactions L, the charge amount ABEF of Y is lower than GBJK of X. Therefore, if housing substitutability exists among interjurisdictional boundaries and if locational amenities can be found in many jurisdictions, then it is doubted that developers can pass the cost of exactions along to the buyer in the form of higher prices. In Taiwan, for example, exactions do not necessarily increase housing prices but may conversely reduce the profits of developers and builders because the current

market is a buyer's market. If developers pass the costs on to the market, homebuyers will look for other products in the existing inventory because of the high demand elasticity.

3.To Leave for Other Places

Should the cost not be transferred to the market, the developers must internalize it. Of course, the developers would consider the cost-benefit tradeoff sufficient to wait and to pay. In terms of economic benefits, private investment in infrastructure must be based on the condition that the land value increment after investment is greater than the cost for the infrastructure that the developers pay. If both alternatives present a bad deal, developers may then decide to relocate to an area where there is no such requirement.

C. Home Buyers

A concurrency policy may distort the supply and demand of residential development in an area where lacks adequate service level or governmental finances. On the supply side, growth control techniques result in slowing the supply of land may produce scarcity effects that manifest as shifts in the housing supply curve and attendant price increases. On the demand side, to the extent that growth controls may reduce or internalize expected negative externalities and congestion costs associated with growth, controls may also produce amenity effects. Such amenity effects would manifest as changes in the demand curve and likewise may be capitalized in land values, the price of a house rises as commute time falls (Engle, Navarro, and Carson, 1992: 269).

The concurrency intends to control the quality and pace of development. It may have the effect on housing price. At the same time, if the government requires developers to bear the costs of public facilities to mitigate the impacts of new developments, impact fees levied to pay for such public facilities are claimed as one of the reasons for higher housing costs. Therefore, critics assert that high housing costs, resulting from the imposition of concurrency techniques and impact fees, tend to block the opportunity for low-income groups to purchase a decent home.

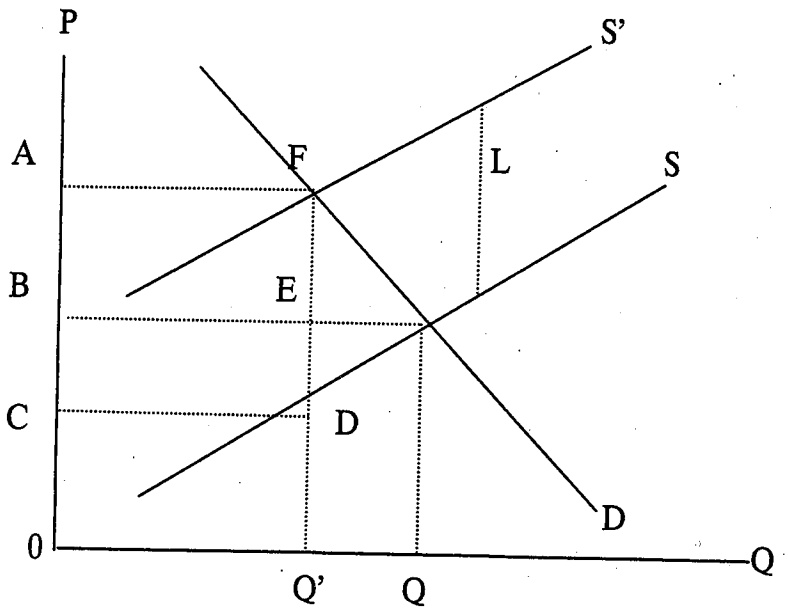

Figure 2 : The Impact of Exactions on Home Buyers

Another central issue raised in the exaction debate concerns who pays the exaction? Dedications of land or fees are costs to developers. It is possible that developers pass the cost of exactions along to the buyer in the form of higher prices if the demand for new construction is sufficiently inelastic. In Figure 2, if governments charge the amount of exactions L, developers will internalize the portion of BCDE and may shift ABEF to home buyers. In additions, exaction charges may result in reduction of housing supply, from Q to Q'. Several studies show that exactions have price effects on housing markets (Nelson, Nicholas, and Juergensmeyer, 1990:563). For example, Elliott (1981) found that the fees imposed in California communities are frequently associated with housing price increases. One study concludes that the cost of exactions is passed on to consumers - homebuyers, renters, or non-residential tenants (Huffman, Nelson, Smith, and Stegman, 1988:49). According to economic theory, who finally pays for the exaction depends on the competitiveness of the market and the elasticity of supply and demand. The empirical studies, however, indicate that the burden falls solely upon the purchaser, at least in rapidly growing areas (Nicholas, 1987:98).

The costs may result in higher priced housing units, where the costs of exaction are large, and the housing market permits them to be passed along to the new-housing consumer. Should housing prices rise, only higher-income households can afford it. As a result, the use of exactions reduces the accessibility of the community to lower-income groups. Lower-income households may be forced into other, less well-prepared community.

On the basis of equity, the costs should be imposed on whoever create the costs. Since the price effect may produce a ripple effect on the low-income groups in the form of high housing prices, those local governments that adopt similar approaches should assume the responsibility for mandating affordable housing requirements to provide housing opportunities for low- and other-income groups. After all, everyone should have equal opportunity for access to a decent home. Taiwan's Construction and Planning Administration intends to enact such a requirement into relevant laws.

Several studies have indicated that impact fees have price effects on housing markets. Some claim that it is possible that developers pass the cost of impact fees on to homebuyers in the form of higher prices. However, we noted that the final incidence of the fees, indeed, depends on several factors, such as the elasticity of supply and demand, market characteristics, interest rates, and local economic conditions. In Taiwan, for example, impact fees do not necessarily increase housing prices but may, conversely, reduce the profits of developers and builders because the current market is a buyer's market. If developers pass the costs on to the market, homebuyers will look for other products in the existing inventory because of the high demand elasticity. In fact, if developers work as speculators, the costs imposed on them may push them out of the market, which is good for the market.

V. Strategies for Dealing with These Issues

Unlike that of urban development in United States, the history of Taiwan has not been related to the availability of publicly provided infrastructure. This has raised several questions over the years. Local governments permit too much development for which their fiscal capacity is too weak to provide sufficient infrastructure for new development. High-growth areas are suffering from the decline of infrastructure quality; and low-growth areas are attracting increasing development activities without concurrently providing adequately needed infrastructure. Consequently, the timing of land development is controlled by the market and people increasingly resent the area in which they live.

It is no doubt necessary to improve the current state of infrastructure planning in Taiwan. In other countries, infrastructure has played a crucial role in shaping urban development (Catanese, 1988:83). Planning infrastructure has proven to be an effective tool for managing and guiding the timing, location, extent, and quality of urban development in the United States. Permitting development without planning infrastructure is irrational and too expensive for governments. We believe that the adoption of concurrency and exactions instruments can release current Taiwan's issues. However, as mentioned earlier, those two approaches still have a few technical problems to be solved. That is, before adopting them, there are something needed to do for Taiwan. This section will thus explore how planning infrastructure can help manage development, how governments can improve infrastructure deficiencies, and to what extent the private sector should finance the development.

A. Suggestions for Implementing Concurrency Requirements

1. Capital Facilities Planning

Capital facilities planning requires that local governments develop a capital improvements plan involving the following elements: (Lai, 1998a: 5-17)

(1) the establishment of overall objectives;

(2) an inventory of existing publicly owned capital facilities, showing locations and capacities;

(3) the estimation of future needs for capital facilities and funding;

(4) the estimation of backlogs and needed funding;

(5)coordination for unwanted facilities within jurisdictions; and

(6) a requirement to ensure that the plan's elements are coordinated and consistent (Walsh and Pearce, 1993:1040).

In practice, these elements provide the basis for effective planning infrastructure and objective decision making in development permission for Taiwan.

From the above elements, we obtain the basic information related to the existing infrastructure backlogs and future service demands. More importantly, they indicate the capacity for accommodating growth. Because development permission should be based on the available capacity of public facilities and services that ensure public infrastructure is in place concurrently with the impacts of new development, the government should establish facilities standards of adequacy to provide an objective reference for decision making. Secondly, since facilities capacity and service demands change over time, the government should establish a development monitoring system to provide clear knowledge for guiding decision making. Thirdly, existing facilities backlogs should be scheduled for improvements. The government should conduct the planning process to designate priorities for facilities installation, items, locations, and funding allocations. The important funding sources should be addressed. These issues are discussed below.

2. Establishing Standards for Public Facilities and Services

Local governments require the criteria provided by the establishment of standards of adequacy to judge geographically the level of service on which the rational development authorization is based. The role of standards is crucial. Standards can directly reflect capital infrastructure needs as well as the amount of public funding to meet those needs. Standards can indirectly indicate the amount of impact fees that developers should pay. In short, standards can help ensure that development

approval is tied to the carrying capacity of public facilities and services and provides a generalized view of infrastructure needs (backlogs and future needs) and needed funding.

Basically, we find it difficult to establish publicly acceptable standards. For example, if standards are set too high, too little development can be permitted under current fiscal difficulties in providing public facilities and services. The public would oppose these proposed standards. On the other hand, if standards are set too low, development may be permitted with inadequate public facilities and services. This would undermine the effectiveness of managing development.

With the arguments on the above, attention should not be paid to whether or not design standards are too restrictive but to what level of service they should reflect and how much flexibility should be allowed in addressing the overall objectives. It is clear that the answer depends on what the standards imply for the cost effectiveness of the pattern of investments (service efficiency)(O'Day and Lance A. Neumann, 1984:76) and ultimately the attainment of guidance and management of urban development.

As to the debate over the appropriate level of standards, Walsh and Pearce (1993:1042) suggest that local governments may consider techniques that build flexibility into the system, particularly in areas where there are current infrastructure deficiencies due to past funding inadequacies. They suggest that local governments may consider phasing in the standards in the established urban areas over time to avoid public objections. Likewise, local governments may set lower standards for areas by encouraging urban infill and redevelopment, affordable housing projects, or other desirable public and private projects. Local governments may also consider higher standards to discourage urban sprawl and to control the quality of development in newly planned urban areas or nearby valued resources areas.

The central government of Taiwan has established facilities standards and revised these standards under the 1997 Rules for Overall Review of Urban Planning, as shown in Table 2. Because geographic differences and uneven funding capacities exist in local governments, these national standards should not be applied uniformly to various jurisdictions. This study suggests that

local governments could establish their own standards based on the national standards. In cases where the standards are set too low to attract development, the regional agencies or the central government should review the standards to ensure consistency with their overall objectives.

3. Establishing a Development Monitoring System

Extensive development lacking adequate public facilities and services is often allowed by local governments. This occurs, in part, because local governments do not have accurate information about the capacity of public infrastructure in their jurisdictions. Sometimes, decision making in development permission is too political to yield a rational manner with regard to infrastructure capacity. The establishment of a development monitoring system is intended to provide knowledge of development-generating service demands and the current capacity of public infrastructure geographically. Local governments can thus have accurate information about how infrastructure capacity would be affected by cumulative developments.

Table 2：Taiwan's Performance Standards for Public Facilities

Items	Standards（ha/1,000 pop.）		Notes
Playgrounds		0.08	Area of each playground is no less than 0.1 ha.
Parks	Below 10,000 population		Should not be provided if there is open space or farmland outside the park area.
	Below 50,000 population	0.15	1.Area of neighborhood park is based on the standard of neighborhood unit. 2.At least one community park for each planning area. 3.Area of each neighborhood park is no less than 0.5 ha. 4.Area of community park is no less than 4 ha where pop. is over 100,000.
	50,000-10,000 population	0.175	
	100,000-200,000 population	0.20	
	200,000-500,000 population	0.22	
	More than 500,000 population	0.25	
Fields	Below 30,000 population		
	30,000-100,000 population	0.08	Area is no less than 3 ha, half of that can be accounted as park area.
	More than 100,000 population	0.07	
Elementary School	Below 50,000 population	0.20	Area of each school is no less than 2 ha.
	50,000-200,000 population	0.18	
	More than 200,000 population	0.14	
Jr. High School	Below 50,000 population	0.16	Area of each school is no less than 2.5 ha.
	50,000-200,000 population	0.15	
	More than 200,000 population	0.14	
Sr. High School & Vocational School			Standard is set by the Ministry of Education.
Markets			Based on practical demands.
Administrative Authorities Autos			Based on practical demands.
Car Parks	More than 200,000 population 8% of the total commercial area		Area of car parks for markets, administrative facilities, fields, leisure, and others is based on practical demands.
	10,000-100,000 population 10% of the total commercial area		
	More than 100,000 population 12% of the total commercial area		
Roads			Based on traffic volume and standard of road design.
Green Areas			Based on natural topography and planning purposes.

Source：1997 Rules for Overall Review of Urban planning of Taiwan.

In a development monitoring system, the analysis of public facility supply capacity as well as the demands for off-site public improvement needs created by new developments relies on computer technology. Each new development or project proposal is added to the system so that decision makers at every permit level can determine instantly whether adequate infrastructure exists to accommodate any new development. Therefore, this system can warn decision makers when demand exceeds supply capacity and inform planners about system capacity expansion to meet projected demand (Kushner, 1988:33-40).

The planned population decides on the level of investment in public infrastructure in Taiwan. Often times, however, we find a lack of a rational nexus between public facility provision and urban development. Thus, public facility backlogs and service inefficiencies often exist. A call for sufficient information stems from subjective and inefficient public infrastructure provisions and allocations. The monitoring system is a database computer program. Providing updated information to assist the private and public sectors in making rational judgments on the adequacy of public facilities and services.

The application of a monitoring system has the following merits related to managing the timing and extent of development: (1)The system can demonstrate the community's capacity to accommodate proposed new development and, therefore, eliminate subjective political decision making which often ignores inadequate facilities (Kushner, 1988:2-63). (2)The system can provide objective criteria for development permission tied to the concurrency requirements. (3)The system can assist local governments by ensuring that permitted new development is consistent with local development plans and that growth is phased with adequate public facilities and services.

Basically, this system requires sufficient staffing to collect and update the data at the outset. This is a challenging assignment for local governments because the system needs technical assistance from regional agencies and financial assistance from the central government to meet its objectives.

4. Planning Public Funding

By 1996, about 20,500 hectares of reserved public facility land and planned road had not been expropriated by governments. The money needed to expropriate them amounts to 8 trillion. Inadequate public funding has led past deficiencies from bad to worse in Taiwan. Because of permitted new development, the situation has deteriorated even further. Before allowing more new development, local governments must therefore decide what funding sources will be available, what the priorities for facility improvements should be, and what the schedule for facility improvements will be.

The subsidies for the local governments in Taiwan come mostly from the provincial government and/or the central government and the betterment levies on private landowners. These piecemeal funding sources cannot catch up with existing tremendous deficiencies. Private involvement in providing public facilities and services will continue. But new funding sources should be channeled into legal forms where the government will necessarily exercise some control and responsibility (Petersen, 1993:115), such as development impact fees, so that developers can share the rational responsibility for mitigating the effects of new development.

As to limited funding sources, with the information available from the planning information system, local governments must establish priorities for facility improvements to bring existing deficiencies up to standard, including items, locations, and funding allocations. These priorities should be coordinated with the timing of capital facility improvements so that they can channel infrastructure improvements to these areas in which they are most needed and can be most efficient. This can involve a planning process to formulate (1) immediate action recommendations to deal with the most urgent issues and (2) a generalized schedule with annual action programs based on funding sources. This planning process should proceed by continually modifying and updating the capital improvements plan.

B. Suggestions for Impact Fees Programs

The application of impact fees is intended to mitigate governmental fiscal difficulties, to diminish unjust windfalls to landowners and developers, and also to achieve concurrency requirements. This section thus suggests that if impact fees programs are applied in Taiwan, the basic elements of impact fees programs are as follows:

1.Enabling Authority

The government must have the authority under existing law to adopt such programs. The principal sources of power for local governmental units to exercise land-use control are the enactment of the Legislative Yuan of the Republic of China. With specific authorization, local governments have the power to impose conditions on land uses. A few years ago, several local governmental units in Taiwan imposed fees on developers in exchange for issuing a development permit. The fees imposed are arbitrary and unreasonable and lack enabling authority. For example, one township imposes levies on developers of 20,000 NT dollars per pin (1 pin = 35.58 square feet). The fees collected are not necessarily earmarked to benefit those who pay them. These local governments that illegally imposed unauthorized fees on developers forced the central government to face critical funding issues. The central government has adopted the charges of the so-called "Land Conversion Feedback" to solve external problems caused by land conversion. It provided at least 14 relevant ordinances for governments to charge the feedback fees. Now, Construction and Planning Administration, Ministry of Interior drafts the authority of impact fees program.

2.Basic Legal Requirements

The regulation of impact fees must have a public purpose within the constitutionally acceptable objectives and must be reasonable such that a causal relation can be established and proportionality in burden and benefit can be proven. From a legal perspective, the constitutionality of imposing impact fees must meet the following requirements: (1) the legality of impact fees programs rests on the proof of some rational link between the needs created by the new development and the infrastructure being exacted; (2) a causal relationship must be established and proportionality in burden and benefit must be proven; (3) the contributed fees must be expressly designated and used

to mitigate impacts reasonably attributable to the proposed development(Davidson, 1986:171); (4) the new development is liable for only the costs of that portion of the facilities needed by the development and not for the total cost of the facilities from which it benefits only partially; (5) the fees collected should be earmarked for expenditures directly benefiting the developers; and (6) the fees should be spent for the earmarked purpose within a reasonable time or be refunded; (7) the government must set levels of service, establish impact measurements, and provide for credits or refunds (Merrill and Lincoln, 1993: 293).

3.The Impact Fees Are Not a Tax

What distinguishes taxes from fees is that the primary purpose of the former is to raise the general revenues which benefit the entire community, and the latter serves to regulate the financing of a specific municipal service or facility (Alterman, 1989:35). Therefore, if fees are collected for a general purpose and not for a specific public improvement, they can be challenged as an unauthorized tax. Furthermore, fees also may be labeled as a tax if the ordinance does not restrict the use of the fees so that they sufficiently benefit the development that pays the fees. That is, the significance is that fees must be justified in law by a direct relationship between the payer's activities and the expenditure purpose (Altshuler & Gomez-Ibanez, 1993: 4). Taxes need bot be.

4.Fair Apportionment of Costs

Related to the basic issue of fairness or equity is apportionment as it is related to impact fees. The fees imposed must thus count for the development's fair share of the total cost of all the facilities and services that serve their development. While determining the fair share, the authorities must identify the equality among different groups of landowners or residents. Equity is open to interpretation. However, it should not mean an equal burden per unit or per acre. Determining the fair share of costs to be borne by new development has been discussed in many studies. For example, Nelson, Nicholas, and Juergensmeyer(1990: 34-37) suggested that the proportionate share of costs should consider the following seven factors: determining cost of new facilities, determining how existing facilities were financed, determining how much new development has already paid for

existing facilities benefiting existing development, determining how much new development will pay in the future for existing facilities benefiting existing development, determining credits for facilities installed by new development, determining extraordinary costs, and allowing for time-price differentials inherent in fair comparisons of amounts paid at different times. The suggestions may differ in focus, however, to assure that double charging is avoided and that developers pay only for the proportionate share of impacts created by their developments.

Based on the above discussion, impact fees programs must meet the basic legal requirements by addressing the rational nexus between new development and the new facilities required to accommodate that development and to ensure equity by calculating the proportionate share of costs. The government must ensure that those who pay the fees will actually benefit from them. The government cannot use impact fees to extort money in exchange for issuing a development permit. The government cannot blatantly allow unjustified variances in exchange for fees (Levy, 1989:489). The government must seriously consider impact fees programs as they relate to local market conditions, legal situations, and political constraints. The government must ensure that the application of impact fees programs is compatible with growth management principles.

VI. Conclusions

Over the years, the government seldom links development permits to adequate level of services. As shown in Table 1, we find that the problem of public facility backlogs has led to poor quality of the living environment. As a result, introducing concurrency requirement and impact fee programs is good for Taiwan in that they can balance the amount of land development and provision of public facilities and improve the quality of the living environment. More important, they can promote service efficiency and provide a more efficient land use pattern and more equitable land allocation.

Providing that the government implements concurrency policy, they should fully understand the market situation. The concurrency requirement may produce limits on permits that may further

hold back development when the local market is very hot. But it may strategically adjust requirements when market cools off and vacancy rates are high. However, three areas remain to be resolved--funding, staff planners, and data--the latter two of which is highly dependent on the first one. The concurrency system demands a constantly updated information system with up-to-the-minute data showing the level of public facility and service, land use, development pace, resource lands, environmental conditions, the economic situation, and other elements. These updated data are often lacking. This is troublesome because an effective planning context and strategic policies rely heavily on these data. Without complete data, governments cannot set priorities for actions and resource allocations, and equity and efficiency cannot be achieved. Established plans often require revisions during specific periods. Adequate money and updated data support timely revisions to meet future needs. In practice, however, inadequate funding and data undercut the effectiveness of policy implementation and make administrative feasibility more difficult. A new funding source, mandated by law, should thus be given to local governments. Once the funding issue is resolved, it will become possible to recruit a sufficient number of staff planners and develop needed databases.

At last, planning and management for public facilities and services are indispensable. Planning-based infrastructure management is intended to promote service efficiency and incorporate an adequacy requirement to guide urban development. The long-term backlogs of public facilities and services that result primarily from the provision of public infrastructure is not related to urban development; and development activities are free from the responsibility of considering their impacts on the capacity of nearby public infrastructure. Within this context, this recommendation is intended to manage land development in coordination with the capacity of public infrastructure and suggests that developers pay as they grow. In the process of achieving these goals, this paper suggests that future study can be focused on how to establish a planning information system, how to establish a development monitoring system, and how to finance growth through impact fees programs.

Reference

Alterman, Rachelle, 1989, *Evaluating Linkage and Beyond: The New Method for Supply of Affordable Housing and Its Impacts* (Cambridge, MA: Lincoln Institute of Land Policy).

Altshuler and Gomez-Ibanez, 1993, *Regulation for Revenue: The Political Economy of Land Use Exactions* (Cambridge, MA: Lincoln Institute of Land Policy).

Anderson, John E., 1993, "Land Development, Externalities, and Pigouvian Taxes," *Journal of Urban Economics* Vol. 33, pp. 1-9.

Anderson, John E., 1986, "Property Taxes and the Timing of Urban Land Development," *Regional Science and Urban Economics* Vol. 16, pp. 483-492.

Arnott, R. J. and F. D. Lewis, 1979, "The Transition of land to urban use, *Journal of Political Economy* Vol. 87, pp. 161-170.

Bentick, B. L., 1987, "A Development Gains Tax Will Accelerate the Time of Development Unless There is also a Tax on Redevelopment," *Public Finance/Finances Publiques* Vol. XXXXII, No.2, pp. 320-324.

Bentick, B. L. and Thomas F. Pogue, 1988, " The Impact on Development Timing of Property and Profit Taxation, *Land Economics* Vol. 64, No. 4 (Nov.), pp. 317-324.

Benton, J. Edwin and John L. Daly, 1996, "County Impact Fee Adoptions As Policy Innovations: A Search for Theory," *International Journal of Public Administration* Vol. 19, No. 7, pp. 1037-1064.

Boggs, H. Glenn II and Robert C. Apgar, 1991, "Concurrency and Growth Management: A Lawyer's Primer," *Journal of Land Use and Environmental Law* Vol. 7, No. 1, pp. 1-27.

Catanese, Anthony James, 1988, "Planning Infrastructure for Urban Development," in *Public Infrastructure Planning and Management,* ed. by Jay M. Stein (Newbury Park, CA: Sage Publications).

Davidson, Jonathan M., 1986, "Plan-Based Land Development and Infrastructure Controls: New Directives for Growth Management," *Journal of Land Use & Environmental Law* Vol. 2, pp. 151-175.

Engle, Robert, Peter Navarro, and Richard Carson, 1992, "On the Theory of Growth Controls," *Journal of Urban Economics* Vol. 32, pp. 269-283.

Elliott, 1981, "The Impact of Growth Control Regulations on Housing Price in California," *Am. Real Est. & Urb. Econ. A. J.* Vol. 9, No. 2, pp. 115-133.

Evans, A. W., 1987, "The Effect of A Development Gains Tax on the Timing of Development," *Public Finance/Finances Publiques* Vol. XXXXII, No.2, pp. 325-331.

Fagin, Henry, 1955, "Regulating the Timing of Urban Development," *Law and Contemporary Problems*, Vol. 20, No. 2, pp. 298-304.

Freilich, Robert H., 1974, "Development Timing, Moratoria, and Controlling Growth," *Planning, Zoning, and Eminent Domain,* pp.147-219.

Huffman, Nelson, Smith, and Stegman, 1988, "Who Bears the Burden of Development Impact Fees?" *JAPA* Vol. 54, pp. 49-55.

Kelly, Eric Damian, 1993, *Managing Community Growth: Policies, Techniques, and Impacts* (Westport, CT: Praeger Publishers).

Kivell, Philip, 1993, *Land and the City: Patterns and Processes of Urban Change* (New York: Routledge).

Kushner, James A., 1988, "The Development Monitoring System (DMS): Computer Technology for Subdivision Review and Growth Management," *Zoning and Planning Law Report* Vol. 11, No. 5, pp. 33-40.

Lai, Tsung-Yu, 1998a, The Impacts of Concurrency Requirements and Development Exactions on Land Development, *The International Conference on Environment Planning, Land Development and Management of Asia-Pacific Rim Nations,* Taipei, Taiwan (January), pp. 5-1~5-27.

Lai, Tsung-Yu, 1998b, *A Study on National Land Development and Growth Management Systems* (Taiwan: Council for Economic Planning and Development)(June).(in Chinese)

Levy, Lawrence A., 1989, "Impact Fees, Concurrency, and Reality: A Proposal for Financing Infrastructure," *The Urban Lawyer* Vol. 21, No. 3, pp. 471-490.

Merrill, William W. and Robert K. Lincoln, 1993, "Linkage Fees and Fair Share Regulations: Law and Method," *The Urban Lawyer* Vol. 25, No. 2, pp. 223-308.

Mills, David E., 1980, "Market Power and Land Development Timing," *Land Economics* Vol. 56, No. 1, pp. 10-20.

Mudge, Richard R. and Susan Jakubiak, 1987, *Financing Infrastructure: Innovations at the Local Level* (Washington, DC: National League of Cities).

Nelson, Arthur C., James C. Nicholas, and Julian C. Juergensmeyer, 1990, "Critical Elements of Development Impact-Fee Programs," *Journal of Urban Planning and Development* Vol. 116, No. 1 (May), pp. 34-47.

Nelson, Arthur C., James E. Frank, and James C. Nicholas, 1992, "Positive Influence of Impact-Fee in Urban Planning and Development," *Journal of Urban Planning and Development* Vol. 118, No. 2, pp. 59-64.

Nicholas, James C., 1987, "Impact Exactions: Economic Theory, Practice, and Incidence," *Law and Contemporary Problems* Vol. 50, No. 1, pp.85-100.

O'Day, D. Kelly and Lance A. Neumann, 1984, "Assessing Infrastructure Needs: The State of the Art," in *Perspectives on Urban Infrastructure,* ed. by Royce Hanson (Washington, DC: National Academy Press), pp. 67-109.

Petersen, John E., 1993, "Infrastructure Financing: Examining the Record and Considering the Options," in Jay M. Stein ed., *Growth Management: The Planning Challenge of the 1990's* (Newbury Park, CA: SAGE Publications), pp. 94-116.

Platt, Rutherford H., 1996, *Land Use and Society: Geography, Law, and Public Policy* (Washington, D.C.: Island Press).

Porter, Douglas, 1988, "Management or Meltdown—The Growth Control Issue," *Institute on Planning, Zoning, and Eminent Domain,* Janice R. Moss, ed. (New York: Matthew Bender & Co., Inc.), Chapter 10.

Porter, Douglas R., 1997, *Managing Growth in America's Communities* (Washington, D.C.: Island Press).

Singell, Larry D. and Jane H. Lillydahl, 1990, "An Empirical Examination of the Effect of Impact Fees on the Housing Market," *Land Economics* Vol. 66, No. 1 (February), pp. 82-92.

Shoup, D. C., 1970, "The Optimal Timing of Urban Land Development," *Regional Science Association Papers and Proceedings,* pp. 33-44.

Stuart, Greg, 1994, "Concurrency-Management Practices in Florida: Comparative Assessment," *Journal of Urban Planning and Development* Vol. 120, No.2 (June), pp.59-73.

Walsh, Thomas M. and Roger A. Pearce, 1993, "The Concurrency Requirement of the Washington State Growth Management Act," *University of Puget Sound Law Review* Vol. 16, pp.1025-1057.

Wickersham, James H., 1994, "The Quiet Revolution Continues: The Emerging New Model for State Growth Management Statutes," *Harvard Environmental Law Review* Vol. 18, pp. 489-548.

Wicksell, K., 1934, *Lectures on Political Economy, Volume I: General Theory* (New York: Macmillan).

土地政策工具對開發活動及公共設施提供之影響

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摘 要

民國 40 年以來，台灣地區的土地政策對刺激經濟成長扮演了一個重要的角色。基於經濟成長的考量，政府鼓勵土地開發活動，然而，政府長期以來財務資源不足的情況下，無法充分進行公共設施的興建工作，以致開發活動所造成的公共設施興建成本，在制度不健全的情形下，反而讓社會大眾承擔土地開發衍生的外部成本，卻讓產生成本的開發業者自外於內部化的機制。有鑑於此，政府近年來企圖建構發展許可制，以同時性策略配合開發影響費或相關方式之課徵，作為取得開發許可的要件之一，藉以解決開發活動所造成的公共設施不足問題。因此，本文企圖探討這些改良性土地政策之實施，對政府、開發業者、購屋者，以及公共設施的提供會產生何種影響，並提出解決目前存在的公共設施需求問題的可能對策，以供政府相關單位之參考。

關鍵詞：土地政策，土地開發，公共設施，開發影響費，同時性政策