Economic and Fiscal Impacts of Smart Growth Policies

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Land use regulation, smart growth policies and property values

Introduction

A notable barrier to sound land use planning and implementation in the West derives from concerns that smart growth policies will reduce property values. Information about the impact of smart growth policies on property values is therefore an important component of any argument for the establishment of such policies. This report will summarize recent relevant findings from published, mostly peer-reviewed literature regarding the relationship between property value and land use regulations promoting smart growth principles. The great majority of empirical studies show that land use regulations do not lower property values. In many cases, the opposite occurs: the amenity and scarcity effects of land use regulation offset the restriction effect, and property values increase.

Smart growth can be defined as compact, transit-oriented, walkable development that includes a mix of land uses with a range of housing choices. The goal of smart growth is to accommodate growth in a way that protects air quality, mobility options, housing choice, natural open space, economic vibrancy and quality of life. These principles and goals are reflected in a wide range of land use policies and regulations that have been implemented by state and local governments. These include urban growth boundaries, open-space ordinances, cluster development requirements and agricultural zoning, among many others.

A large body of literature exists that examines the effects of land-use regulations on property values. This review will focus primarily on recent empirical studies, drawing heavily on two documents published in 2007 that each present a literature review on the topic. Both of these resulted from the same research effort that examined relationships between property values and land regulation in Oregon (Escheverria 2007; Jaeger and Plantinga 2007). In addition to the literature in these reviews, several other articles were reviewed.

Theoretical Considerations

Economic theory indicates that land-use regulations produce three main effects that impact property values. These are the effects of:

1. restricting the allowable uses of a parcel of land (restriction effect);
2. creating benefits to the property owner and/or other property owners by regulation (amenity effect); and
3. limiting the supply of developable land (scarcity effect).

The restriction effect arises when a land use regulation disallows or restricts a particular type of development or use of a property. If the restricted use of the property would yield higher profits to the landowner than its current use, the regulation would decrease the value of the property. It is important to note that the restriction effect only occurs if the restricted or

disallowed use is truly viable and could be implemented in place of the current use. If a property is essentially not feasible to develop (e.g., a vertical cliff or a swamp) or if it is a long distance from a town or city and therefore not in demand for development, then no decrease in value would result from a regulation that restricts development (Jaeger and Plantinga 2007).

Amenity effects result when a regulation creates a benefit or "amenity" for property owners, thereby causing an increase in property value. The amenity can be as diverse as scenic views of agricultural land, a lack of undesirable environmental impacts such as dust, noise, and pollution, or desirable neighborhood elements like parks or running paths. The amenity effect occurs because property values are affected by characteristics of nearby properties. A regulation that protects everyone in the neighborhood from undesirable activities improves property values for all (Jaeger and Plantinga 2007).

When land use regulations limit the supply of land for development use in an area, the scarcity effect can cause an increase in value of developed properties and land that is available for future development. Also, where land markets are linked, such as in metropolitan areas or other places where several developing towns are clustered, scarcity effects from one land market can affect property values in nearby markets (Escheverria 2007; Jaeger and Plantinga 2007).

To summarize, restriction effects cause property values to decrease, while amenity and scarcity effects cause an increase in value. All three effects may impact the value of a specific property as a result of a particular regulation such that the individual effects are not separable. Furthermore, these effects may interact in complex ways. As a result, it is impossible using economic theory to definitively predict how a particular land use regulation will affect the property value of specific properties. To understand how land use regulations impact property values, it is necessary to conduct empirical studies of the relationship of land values to land use regulation. The next section will summarize of a selection of such studies.

Literature

Many land use policies, regulations, and zoning ordinances promote development that incorporates smart growth principles. In reviewing the literature exploring how property values are related to land use regulations and smart growth, several primary topics emerge:

- urban growth boundaries;
- open space;
- housing affordability;
- mixed-use zoning.

Urban growth boundaries have objectives of limiting urban sprawl, preserving open space and agricultural lands, and increasing housing density. Most of the empirical studies of the effects of urban growth boundaries on property values have found that *land* values within the boundary are increased by the imposition of a growth boundary. Dawkins and Nelson (2002) reviewed

literature on various international and U.S. urban containment policies and compared the effects of the policies on land and housing values. They found that these policies affect land prices; most of the studies reviewed showed an increase in land values inside the growth boundary. The results for the effect on *housing* prices are not as clear, with different studies indicating urban growth boundaries increase, decrease, or have no real effect on housing prices (Dawkins and Nelson 2002; Downs 2002; Nelson, Pendall et al. 2002; Jun 2006). Dawkins and Nelson (2002) suggest that the housing price effects of growth boundaries depend on many factors, including the type of policy and how it is implemented, local housing market structure, land ownership patterns, as well as other local land regulations.

An important component of most smart growth policies is land use regulations and restrictions that preserve open space in many different forms, including working agricultural lands, golf courses, greenbelts, forests, various types of wetlands and lakes, and prairie. The evidence from numerous empirical studies overwhelmingly indicates that proximity to all types of open space increases property values (Irwin 2002; Netusil 2005; Nicholls and Crompton 2005). Generally, the closer the property is to the open space, the higher the increase in value. The amount of increase tends to be higher if the open space is known to be permanent, i.e. it will have no future development. The relative scarcity of open space in the local area also affects the value increase. In rural areas with abundant open space, the increase is smaller than in urban and suburban areas where open space is relatively rare (White and Leefers 2007).

One segment of the literature examines the relationship of land use regulation and growth management policies to housing affordability. A comprehensive review of this extensive literature conducted in 2002 by Nelson, Pendall et al, concluded that housing prices are primarily determined by market demand. These authors note the difficulty of generalizing the effect of growth management policies on housing prices due to the wide range of policy language and approaches to implementation. This review also found that traditional zoning and land use regulation such as low-density requirements, minimum structure size, and restrictions on multi-family housing, can increase housing prices by limiting housing supply. The authors argue that growth management policies, if carefully written and implemented, can improve the availability of affordable housing, and even if housing prices generally increase, these are often offset by decreases in other living costs such as transportation and energy, as well as an increased quality of life.

Mixed land use zoning that includes shops, offices, homes and apartments within neighborhoods is prominent in many comprehensive smart growth policies that have been adopted. Two studies were reviewed that examined the effect of mixed land uses on property values; both employed hedonic price models. Cervero and Duncan (2004)) analyzed data from Santa Clara County, California, and found that properties in and near areas with multi-use zoning had price premiums over areas zoned exclusively for single-family housing. Using data from Washington County, Oregon (in the Portland metro area), Song and Knaap (2004) found that a mix of particular land uses with single-family homes increased property values. These particular land uses include parks and "neighborhood scale" commercial areas. They found

proximity to large or intense commercial development tended to decrease property values, as did proximity to multi-family housing. A key finding was that evenly distributed non-residential uses increased property values, implying that people value relatively homogenous residential neighborhoods. They conclude that mixed-use neighborhoods should be carefully designed so that the uses are compatible and the commercial development is appropriately scaled.

One reviewed study merits more detailed discussion. Jaeger and Plantinga (2007) comprehensively examined how Oregon's land use planning system affected property values. They used property value data collected in Oregon and Washington over intervals from the mid-1960s (before Oregon's land use planning system was implemented) through the early 2000s. Their analyses included the following results:

- Lands both inside and outside of urban growth boundaries, including those zoned for development and those zoned for exclusive agricultural and forest usage, have generally increased in value;
- Land values in Oregon have increased at about the same rates as similar lands in Washington (which has no comparable statewide land use system) since the Oregon statewide land use planning system was implemented in 1973;
- Over that same period, land having the most restrictive limits on development has increased in value at similar rates to unrestricted land.

They conclude that the data they examined "do not, therefore, support the belief that Oregon's land-use system has systematically reduced the value of restricted properties."

Conclusions

Although economic theory is unable to definitively predict the results of specific land use regulation on the value of particular land parcels due to the complex interactions of restriction, amenity, and scarcity effects, the great majority of empirical studies show that land use regulations do not lower property values. In many cases, the opposite occurs: the amenity and scarcity effects of land use regulation offset the restriction effect, and property values increase. Studies show that property values are primarily driven by market demand rather than by supply restrictions resulting from land-use regulations. While smart growth policies can cause housing price increases, affordability issues can be mitigated by carefully designed and implemented growth management policies. Moreover, higher housing costs are often offset by decreases in other living costs, such as for transportation and energy, and the increased quality of life that result from implementation of smart growth policies.

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Smart growth policies and fiscal impacts

Introduction

A primary influence on decisions about land use regulations is their likely impact on local fiscal balance. Providing evidence about the impacts of smart growth policies is an essential part of constructing an effective rationale for enacting regulations to promote smart growth principles. This report will review a sampling of relevant literature on the fiscal impacts of smart growth policies and summarize the findings. Extensive empirical research shows that incorporating smart growth principles of well-planned, compact development can significantly lower capital outlays for infrastructure, as well as decrease recurring operating and maintenance costs.

Smart growth can be defined as compact, transit-oriented, walkable development that includes a mix of land uses with a range of housing choices. The goal of smart growth is to accommodate growth in a way that protects air quality, mobility options, housing choice, natural open space, economic vibrancy, and quality of life. These principles and goals are reflected in a wide range of land use policies and regulations that have been implemented by state and local governments. These include urban growth boundaries, open-space ordinances, cluster development requirements, and agricultural zoning, among many others.

Many empirical studies exist that examine the fiscal impacts of development that is dense and compact – two primary smart growth principles. There is a dearth of academic literature exploring the fiscal impacts of implementing other principles of smart growth, such as transit-oriented development and a range of housing choices. This review will focus primarily on empirical studies summarized in a Brookings Institution report published in 2004 that provides a comprehensive literature review on the fiscal impacts of compact and dense development (Muro and Puentes 2004).

Theoretical aspects

From a theoretical perspective, the relationships between fiscal impacts and the density and compactness of development are primarily a function of spatial influences on costs. As more people and dwellings collect within a small geographic area, the costs of providing infrastructure such as roads, water lines, and sewers should decrease for each additional person or dwelling. This will be due to the fact that the physical distances between the dwellings and other buildings will be smaller. This, in turn, will decrease the amount of roadway or water line or sewer pipe needed to serve each new resident, leading to decreasing costs per person. These economies of scale are largely a function of the *density* of development (Carruthers and Ulfarsson 2003).

Another spatial influence on costs arises due to the geographic extent of the area to which public services must be provided. In a more compact development pattern, the costs of

providing services such as fire protection, public transit, and road maintenance should be at lower per capita or per dwelling rates than in areas where the residents are spread out over a larger area. These economies of geographic scope are a function of the *compactness* of development (Carruthers and Ulfarsson 2003).

In theory, both of these effects work in conjunction to affect both capital infrastructure and service delivery costs, thereby providing significant fiscal benefits.

Literature

Although there were earlier analyses, empirical studies of the impact of development form on infrastructure costs and associated fiscal benefits became widespread in the 1970s as a series of reports on the costs of sprawl were published. The first of these was published in 1974 by the Real Estate Research Corporation. This study compared detailed cost estimates derived from hypothetical developments. The results showed that infrastructure capital costs for high-density development were about half of those for low-density development (Real Estate Research Corporation 1974).

The Urban Land Institute sponsored a study published in 1989 that examined different development patterns with a range of densities at various distances from existing infrastructure facilities. This study found a large range of costs, with the densest development patterns situated closest to existing facilities having costs for infrastructure that were less than 25 percent of those associated with the least compact development located farthest from central facilities (Frank 1989).

Several statewide studies of alternative development scenarios have been conducted, including those for New Jersey, Michigan and South Carolina. These studies compared projected costs for road, water and sewer infrastructure for compact development versus status quo development over a 20-year period. Results of the models indicated that compact, planned growth could decrease road expenditures by 12 to 26 percent and water/sewer infrastructure costs by 8 to 14 percent (Burchell 1992; Burchell 1997; Burchell, Zakrewsky et al. 1997).

Burchell and a team of researchers further extended their earlier analyses by projecting costs for sprawl development and compact development for a 25-year period for all 50 states in the U.S. Their model estimated savings of 11.8 percent for state and local road costs and 6.6 percent for water and sewer infrastructure associated with compact growth patterns (Burchell, Lowenstein et al. 2002).

A study by Carruthers and Ulfarsson (2003) used data for all 283 metropolitan counties in Arizona, California, Colorado, Florida, Georgia, Idaho, Nevada, New Mexico, North Carolina, Oregon, Tennessee, Texas, Utah and Washington to examine how per capita public expenditures were affected by the character of urban development. This research indicated that

increased density of development and decreased spatial extent of urbanized area were associated with lower per capita costs of most capital facilities.

Costs associated with ongoing maintenance and operation of infrastructure, provision of fire and police services, transit services, and trash collection, among other public services, are also significant sources of public expenditures. These costs are also affected by the form and pattern of development, as documented in many analyses. Several of the studies that looked at capital costs of infrastructure also examined recurring service, operations, and maintenance costs. The Real Estate Research Corporation study (1974) examined maintenance and operating costs associated with the hypothetical developments employed in the analysis. These costs estimated for the tenth year of operation were 14 percent lower for the high-density development in comparison to the low-density development.

The statewide studies of alternative development scenarios conducted for New Jersey, Michigan, and South Carolina by the Burchell teams showed small but significant fiscal benefits associated with increased density and compact growth. The savings resulted from increased delivery efficiencies, making use of existing excess operating capacity, and reductions in road maintenance costs from decreased needs for new roads, among other sources. The decrease in recurring costs ranged from 2 percent to 5 percent on road maintenance, debt service, and school costs (Burchell 1992; Burchell 1997; Burchell, Zakrewsky et al. 1997).

Burchell's nationwide sprawl cost study also estimated per capita costs for public services delivery. Decreased costs were partly driven by existing excess capacity in already developed areas and were reduced an estimated 3.7 percent at the end of the 25-year analysis period (Burchell, Lowenstein et al. 2002).

A comparative analysis of county government costs in 10 counties in Kentucky examined per-unit costs for a range of services such as police, fire, highway maintenance, schools and waste management. The analysis indicated that these costs were lowest in counties with concentrated growth and highest in counties with low-density growth. This held true for counties with major metropolitan areas as well as those with small towns. The greatest impacts were due to costs associated with police and fire protection and schools (Bollinger, Berger et al. 2001).

The study by Carruthers and Ulfarsson (2003), using data for all metropolitan counties in 14 rapidly growing states, indicated that increasing density of development was associated with decreasing per capita service costs for police protection. Decreasing spatial extent of urbanized land was associated with decreasing per capita service costs for police and fire protection, trash collection, and road maintenance.

A regression analysis based on data from 248 large counties across the U.S. examined current account spending (on operations, maintenance, and services) as it relates to population density(Ladd 1992). In contrast to engineering-based analyses like the cost-of-sprawl studies, Ladd examined the relationship between population density and current account spending. She

found a u-shaped relationship between these factors, with the lowest spending at a population density of about 250 people per square mile. At both lower and higher densities the costs were higher. Ladd suggests that the difference between her results and those of earlier, engineering-based studies is partly a function of the difference between direct and final outputs. An example of this is difference is the distinction between the number of police patrols (direct output) versus actual public safety (final output). Ladd and others argue that high population densities create harsher environments for the provision of public services and thus require a higher level of direct output to achieve a given level of final output (Bradbury, Ladd et al. 1984; Ladd and Yinger 1991). So, for example, in areas of high population density, more police patrols would be needed to achieve a given level of public safety than in low population density areas.

Conclusions

Theoretical engineering and planning considerations predict that economies of scale and of geographic scope will arise from spatial influences on costs. Accordingly, these will lead to lower capital infrastructure costs and lower recurring costs for operations, maintenance and public services in areas of higher development density and compactness. In the case of capital infrastructure costs, extensive empirical research shows this is indeed the case; incorporating smart growth principles of well-planned, compact development can significantly decrease capital outlays for infrastructure by municipalities, counties and states. Most studies of recurring costs also indicate decreased costs associated with increased density and compactness, although the savings are much smaller than those associated with infrastructure, in most cases. Some research indicates that there may be an optimal range of population density with respect to ongoing costs and that, after a point, higher population density yields increasing costs. Additional empirical research regarding recurring costs and the relationship between direct outputs and final outputs would be useful.

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Smart Growth and Economic Prosperity

Introduction

Concerns about potential negative impacts of smart growth policies on local and regional economies are a primary source of resistance to enacting such policies. Providing evidence of the impacts of smart growth policies and principles on economic performance and prosperity is essential to allaying such concerns. This report will summarize recent findings regarding how key components of local and regional economic growth are associated with specific aspects of urban form promoted by principles of smart growth.

Smart growth can be defined as compact, transit-oriented, walkable development that includes a mix of land uses with a range of housing choices. The goal of smart growth is to accommodate growth in a way that protects air quality, mobility options, housing choice, natural open space, economic vibrancy, and quality of life. These principles and goals are reflected in a wide range of land use policies and regulations that have been implemented by state and local governments. These include urban growth boundaries, open-space ordinances, cluster development requirements, and agricultural zoning, among many others.

While very few studies directly investigate the relationship between smart growth policies and economic performance, an extensive literature exists within the discipline of urban economics examining how urban form and associated amenities influence economic growth and performance. This review will discuss the key components of local economic performance and show how they are related to smart growth principles.

Human Capital and Economies of Scale: Key Components of Economic Growth

Among the myriad factors known to contribute to local and regional economic prosperity, there are several that reflect community characteristics that are directly linked to the application of smart growth design principles. These economic growth factors include *human capital* and the factors that attract and retain it and various *economies of scale* that result from the geographic concentration of companies and people in a particular area. The following sections will examine each of these in some detail.

Human Capital

One of the most important factors for local and regional economic growth and prosperity is the presence of human capital – having a pool of highly-skilled and well-

educated employees. Areas that produce and attract such people tend to have robust economic performance. Several empirical studies have established this relationship (see for example, Glaeser 1998; Simon 1998; Glaeser 1999). A study conducted by Glaeser and Sainz found that areas with high skill (as measured primarily by the share of the adult population with a college degree) have higher population and productivity growth than areas with less-skilled workers (Glaeser and Saiz 2003).

To attract and retain highly educated and skilled workers it is essential for communities to provide good schools, social services, and a range of additional amenities. These all contribute to what is known as *quality of life*, which is a result of an individual's consumption of market goods, public goods, and leisure, as well as the physical and social characteristics of his or her community (Lambiri, Biagi et al. 2007).

Smart growth policies are instrumental in creating neighborhoods, communities, and regions having characteristics and amenities that contribute to a high quality of life in an area, thereby increasing the ability to attract and retain human capital. Walkable neighborhoods with accessible parks and abundant open space create a pleasant and desirable living environment. Mixed-use neighborhoods where residents can live, shop, socialize and enjoy cultural amenities are part of a high-quality lifestyle. Smart growth development creates a high quality of life that attracts and retains highly skilled and well-educated people who are an important component in a robust local and regional economy.

An extensive investigation of factors attracting human capital to particular regions was conducted by Richard Florida. He employed interviews and focus groups, along with multivariate regression analysis of 1990 data from the 50 largest metropolitan areas in the U.S. The focus groups and interviews indicated the importance of cultural amenities such as museums, art galleries, and nightlife for attracting and retaining highly skilled and educated people (Florida 2002). Florida also found that human capital, or "talent," (which he measured as the percentages of college degrees, employment as scientists/engineers, and employment as professionals/technicians) is associated with regions exhibiting diversity and openness, what he refers to as "low barriers to entry for human capital." His analyses revealed that talent is an important factor for increasing area incomes and attracting high-tech industries to a region.

A recent analysis of the relationship between quality-of-life indicators such as cultural and recreational amenities in U.S. metropolitan areas found that having an abundance of these factors lowers out-migration of young, college-educated people (Whisler, Waldorf et al. 2008). Another study modeled data for metropolitan areas in the U.S. using regression analyses and found that improvement in quality of life accounted for

about 40 percent of the growth in employment for college graduates in those areas (Shapiro 2006).

Economies of Scale

When firms and their employees cluster geographically, economies of scale are created by the spatial proximity. The main effects by which this occurs are *sharing of intermediate inputs*, *labor pooling*, and *knowledge spillovers*. The occurrence and operation of these effects varies depending on the mix of industries in an area. Clustering of industries and increased density, both of which are advocated as part of smart growth, contribute to effective economies of scale.

Sharing intermediate inputs occurs when the output of one firm act as the input for another company. An example of this is the buttons produced by one company are used by a firm making dresses. If several firms that require buttons as inputs are clustered, the company making the buttons will have lower unit costs due to economies of scale. If the button company and the dress companies are located in the same area, the dress companies save on transportation costs and can receive the buttons more quickly. The button designers and the dress designers can meet for lunch and talk about their products. Both types of firms benefit from these factors and become more profitable as a result.

Labor pools form when firms cluster in the same area. Large populations of highly skilled laborers are attracted to the area. When there are many firms in an area, even though the demand for employees for any one firm may fluctuate due to contractual or seasonal variation, the overall demand and wages for labor in the area remain stable. The workers can count on receiving a stable income and the firms can rely on paying stable salaries in times of high and low demand, thus increasing their profit. In this way, both firms and workers benefit from clustering.

When people and firms are concentrated geographically, this allows ideas to be easily exchanged. These effects are known as *knowledge spillovers*. There are two types. The first type is the so-called MAR spillovers, named after Alfred Marshal, Kenneth Arrow and Paul Romer, in which firms in the same industry are concentrated geographically (Glaeser, Kallal et al. 1992). Employees mingle within and outside of the work environment, allowing ideas, information, and knowledge to be shared formally and informally. Examples include Silicon Valley for the semi-conductor industry and Los Angeles for the motion picture industry. The second type is Jacobs spillovers, first theorized in 1969 (Jacobs 1969). This is the exchange of ideas among people and firms

having different perspectives. The early automobile industry in Detroit is an example: it evolved from the boat engine, machine tool, and steel companies that supported the shipbuilding industry in the area.

Economies of scale arising from these three effects are all facilitated by increased clustering and density of firms and people. Based upon this economic theory, researchers have investigated the relationship between urban density and factors that improve economic performance.

Carlino investigated the relationship between urban density and innovation by examining employment density and the locations of patents granted (Carlino 2001). He employed a multiple regression model with data from the 1990s for 270 metropolitan statistical areas (MSAs). The model results indicate that patents per capita is positively related to local employment density. On average, the number of patents per capita increased by 20 to 30 percent as employment density doubled. In the 270 MSAs examined for the study, employment density varied by more than 2000 percent, so the densest urban areas had a much higher level of patenting activity than the least dense cities. These results suggest that knowledge spillovers are greatly facilitated by dense urban areas and, by extension, that urban density is an important component in economic growth and development.

Ciccone and Hall were interested in investigating the large differences in the productivity of labor across the U.S. (Ciccone and Hall 1996). To do this, they examined the relationship between the county employment density and gross state product. They used data from 1988 for all 50 states and the District of Columbia in a non-linear regression model. Their results indicate that as employment density doubles, labor productivity increases by 6 percent. They found that employment density explains over half of the variation in labor productivity across the U.S. These results suggest that density of urban areas is an important factor in economic growth in these areas.

Cervero examined the relationship between urban form and economic performance using analyses at two scales: across metropolitan areas and within the San Francisco metropolitan area. The macro-scale model employed data for 47 metropolitan statistical areas (MSAs) drawn from a database compiled by the Rutgers University Center for Urban Policy Research with additional data including 1990 U.S. Census data (Cervero 2001). The results of this model indicated that high employment density was associated with increased productivity, as measured by gross metropolitan product. The micro-scale analysis was conducted using data for 34 transportation-based sub-county areas delineated across the nine-county San Francisco Bay metropolitan area. The overall results of the micro-scale models supported and confirmed the results of the macro-

scale analysis. These analyses suggest that higher employment densities lead to higher economic productivity.

Compact development and higher density are two of the primary design principles of smart growth. As the economic theory and supporting empirical research reviewed above strongly indicate, there are clear benefits for local and regional economies that derive from implementing smart growth policies that incorporate these principles.

A Direct Analysis of the Effect of Growth Management on Economic Performance

Nelson and Peterman conducted the only empirical study of the relationship between growth management and economic performance that could be found for this literature review. The study used data on 182 metropolitan statistical areas (MSAs) having a population between 100,000 and 500,000 in the 1990 Census (Nelson and Peterman 2000). A total of 26 of these areas were identified as having implemented growth management. Economic performance is measured as change in relative share of total personal income between 1972 and 1992. The results indicate that growth management is associated with improvement in market share as measured by personal income. Those MSAs that practice growth management achieved a one-percent increase in personal income market share as compared to other MSAs. This suggests that communities employing growth management have better economic performance than others.

Conclusions

Extensive empirical research has shown that local and regional economic performance and prosperity are driven largely by the presence of highly skilled and well-educated people complemented by certain economic efficiencies and that both of these are strongly influenced by community form and character. Communities that develop according to smart growth policies that incorporate principles of compactness and development density and that promote a high quality of life will enjoy enhanced economic performance and improved overall economic prosperity. Additional research examining the direct relationship between smart growth policies and economic performance would be useful.

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Smart Growth and Developers' Profits

Introduction

Developers are essential for the promotion and implementation of smart growth policies. Developers' concerns regarding the marketability and profitability of smart growth development is a potential source of resistance to its implementation. Providing developers information about the current and future market for smart growth development, along with how this may impact their profitability, is critical to ensuring their collaboration. This report will review the literature on smart growth and developers' profits, present an analysis of the potential future market for smart growth, and summarize the results of a survey of developers regarding profits and smart growth.

Literature on Developers' Profits from Smart Growth

Whereas an extensive literature exists that documents the lot price premiums deriving from various types of amenities associated with smart growth principles, such as proximity to open space or the presence of walking trails, there are hardly any studies that also examine the costs of the development, thereby allowing inferences to be made about profitability. Only one such analysis was discovered in the literature search conducted for this report.

A study of conservation subdivisions suggests they are more profitable to developers than conventional subdivisions (Mohamed 2006). The analysis compares conservation subdivisions versus conventional subdivisions in terms of price premiums, building costs, and absorption rates. The author utilizes a definition of conservation subdivision as "development projects with large communal spaces that evoke a stronger sense of social and environmental benefits." The study setting is South Kingstown, Rhode Island, where open space preservation has been adopted as a central land-use policy feature. South Kingstown is implementing a conservation subdivisions model referred to as Flexible Design Residential Project (FDRPs) requiring developers to set aside from 30 percent to 70 percent of a parcel as open space. Results from regression analyses indicated that lots in conservation subdivisions carry a price premium, are less expensive to build, and sell more quickly than lots in conventional subdivisions.

A report of a forum conducted by the Urban Land Institute and The Conservation Fund on lessons learned from conservation developments provided the perspective of developers regarding profitability (McMahon and Pawlukiewicz 2002). George Ranney, developer of the critically acclaimed Prairie Crossing conservation development project in Grayslake, Illinois, noted that the rate of return on that project was 12 percent compared to a typical return in the region of 6 to 7 percent. Jeff Kingsbury, the director of marketing for the Stapleton Redevelopment Project in Denver, noted that the absorption rate of that project was more than 600 houses per year.

Engineering Studies of Smart Growth Development Costs

The U.S. Environmental Protection Agency (EPA) has commissioned an engineering study comparing the costs associated with smart growth development to conventional development. While the full study has not yet been published, partial results have been referenced in presentations by EPA staff and in at least one publication (Langdon 2007). The study, conducted by Jonathan Ford of Morris Beacon Design, is based on a set of development scenarios that estimate the cost of conventional suburban development as compared to development incorporating smart growth principles on a 750-acre site in Mt. Pleasant, South Carolina. The analysis found that the infrastructure costs of conventional large-lot residential development would be 47 percent greater than for compact smart growth development. In comparing the initial investment a developer would require for a conventional project versus a smart growth project, the results indicate an increase of about 270 percent for the conventional development.

Lower development costs alone are not sufficient to establish that smart growth development is more profitable than conventional development. However, there is evidence that there are price premiums for smart growth developments. An analysis of property values at the Kentlands and other smart growth developments in Maryland found premiums of 6.5 to 16 percent for properties (Tu and Eppli 1999). There is also ample evidence that amenities associated with smart growth development, such as proximity to parks and open space, create lot price premiums (see for example (Irwin 2002; Netusil 2005). The combination of decreased costs and increased lot prices suggests that smart growth development can indeed be more profitable for developers.

Demand Projections for Smart Growth Development

A series of academic studies, consumer preference surveys, and market analyses have established the existence of current demand for smart growth development and have projected increasing demand in the future.

A study that reviewed many consumer surveys and analyzed demographic and other trends projected an increased demand for denser, more walkable residential neighborhoods in the U.S. (Myers and Gearin 2001). These researchers predicted that as the baby boom generation moves past the age of 45, this shift will cause a doubling of demand for more compact housing for the period 2000-2010, accounting for 31 percent of total homeowner growth during the period.

The results of a nationwide survey conducted in 2004 for the National Association of Realtors and Smart Growth America indicate that people in the U.S. prefer smart growth communities over sprawling communities (Belden Russonello & Stewart 2004). People are concerned about the time they spend commuting to work and see the solutions as improved public transportation and changing patterns of housing developments, as opposed to increased road capacities. This survey also found that the public prefers investing in existing communities

before creating new development farther out, developing affordable housing, preserving open space, and developing walking and biking paths.

The EPA commissioned a whitepaper by Charles Lesser and Company examining the market for smart growth (Logan, Siejka et al. 2007). The analysis reviewed consumer demand studies and in-house consumer surveys conducted by the firm. The study estimates that at least one-third of the current consumer real-estate market has a preference for smart growth development and predicts that demand will grow due to demographic trends and changing preferences of buyers. Through an examination of the current housing market and the number of existing smart growth developments, the authors concluded that the market for smart growth is underserved and noted that this provides business opportunities for builders and developers.

Summary of Developer Surveys

To gather information regarding developers' perspectives on smart growth and profitability, a survey was developed and administered to five developers active in smart growth projects. The survey instruments and results are appended to this report. The following section will provide a summary of the survey results.

Five surveys were conducted -- four of developers working in urban settings and one working primarily in rural areas.

The urban developers do infill and projects on the urban edge. The rural developer is mainly involved in conservation subdivisions. All of them employ smart growth principles in all of their projects. The most frequently employed principles/characteristics include higher densities, walkable designs, and a mix of land uses.

All of the developers report that there are price premiums for homes and lots in smart growth developments, and they all indicated that costs are higher for smart growth developments, in sharp contrast with the EPA study cited above. Only one developer reported higher absorption rates; one indicated that the rate was lower in the early stages of a project and higher later, and two felt that it depends on other aspects of the project.

A range of smart growth characteristics were reported to be most effective in generating profits, including walkability, efficiency, consumer amenities, and achieving a "marriage of the use to the site."

Regarding the level of profits in smart growth projects, three of the four responded that "it depends." The indication was that profitability depends on many factors, and the smart growth characteristics are simply one set of factors. One developer mentioned that there would not be "quick profits" with smart growth projects. Another indicated that there are non-monetary benefits to the community from smart growth projects and a developer choosing to do such

projects would see an enhanced reputation, thereby realizing future benefits from projects coming to them.

Local governmental policies seen as promoting profitable smart growth development included allowing higher densities, making investments in redevelopment of infrastructure, zoning explicitly allowing mixed use, and creating an environment and development approval process that promotes smart growth.

Local governmental policies noted as hindering smart growth included uncertainty, lack of flexibility of planning staff, the need for education of jurisdiction employees, subjectivity of application of the laws, exactions not applied fairly or proportionately, impact fees that benefit sprawl development, lack of minimum density regulations, suburban-oriented zoning regulations regarding parking and setbacks, and a filtering process in which there are rulings by exclusions that are attempting to solve worse case problems.

Economic challenges to implementing smart growth policies include the pressures of a fast-paced and overactive real estate market, inverted impact fees that become more expensive as the urban core is approached, structural costs, and redevelopment costs.

The primary other challenge to smart growth implementation noted was lack of understanding of smart growth by local governments, customers, and developers. Another issue noted was the fact that not all the elements are feasible now. For example, smart growth requires transportation planning and infrastructure, which may not yet be in place in many jurisdictions.

Most of the developers felt that increasing gasoline prices will increase the market demand and viability for smart growth projects.

Most also felt that smart growth projects will retain value and have better economic performance in the long term.

Conclusions

There is clearly an existing demand for smart growth development, and it appears this demand will likely increase substantially due to demographic trends and changing buyer preferences. The fact that the supply of developments with smart growth characteristics is not currently meeting this demand provides opportunities for builders and developers.

The evidence regarding profitability of smart growth development is mixed, with academic and engineering studies suggesting that smart growth projects are more profitable and the developers surveyed for this report indicating that profitability depends on the specific project and factors in addition to smart growth characteristics. However, the research for this report found no indications of *lower* profits associated with smart growth development. Additional empirical research and more extensive and rigorous developer surveys would provide more

understanding of the relationship between smart growth development and profits for the developer.

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Smart Growth and Sustainability

The "Triple Bottom Line" of Economy, Environment, and Equity

Smart growth principles provide an effective means by which to strive for development that is sustainable; development that "meets the needs of the present without compromising the ability of future generations to meet their own needs," as stated in the now well-known definition first provided by the Bruntland Commission in 1987. The three pillars of sustainability -- economy, environment, and equity -- are all addressed in smart growth principles. The four narrative reports above explicitly address economy. The implications for our environment and social equity, while not a direct focus of this work, are not separable from the economic aspects. The following paragraphs will provide a brief summary assessment of the smart growth concepts explored in the four narrative reports against the "triple bottom line" of economy, environment, and equity.

Economy

Economic aspects of smart growth examined in this project include its impacts on property values, fiscal balance, developers' profits, and economic prosperity. The research is generally positive with respect to all four of these aspects. The implementation of land use regulations and policies that incorporate smart growth principles generally have a positive effect or at least no negative effects on property values. The social effects of housing price increases will be discussed in the section on equity.

The evidence for the effects of smart growth development on the fiscal balance of local governmental jurisdictions clearly indicates its benefits, both with respect to capital outlays and recurring expenditures for operations and maintenance.

There is abundant evidence of a current and growing market for smart growth development. According to empirical research and surveys of developers, the implementation of smart growth principles creates price premiums. The evidence on costs is mixed, with engineering and academic studies indicating significantly decreased costs, while developer surveys indicate increased costs, leaving the profitability question essentially unanswered. However, no evidence was uncovered of decreased profits associated with smart growth development.

Extensive empirical research has shown that local and regional economic performance and prosperity are driven largely by the presence of highly skilled and well-educated people, complemented by certain economic efficiencies, and that both of these are strongly influenced by community form and character. Communities that develop according to smart growth policies that incorporate principles of compactness and development density and that promote a high quality of life will enjoy enhanced economic performance and improved overall economic prosperity.

Environment

Many of the environmental issues faced by society result in part from how we have designed, developed, and constructed our homes, communities, cities, and transportation infrastructure. Air and water pollution, solid waste issues, biodiversity decrease, habitat fragmentation, loss of agricultural lands, climate change – all of these have been exacerbated by our choices regarding how we develop our environment for human habitation and industry.

The implementation of smart growth principles holds great promise for reversing the negative impacts of sprawling development and for achieving environmental sustainability. Compact, walkable, transit-oriented development with a mix of land uses that incorporate open space can address aspects of most current environmental issues society faces. Such development can greatly decrease the need for driving, thus decreasing air pollution and the need for materials to construct so many automobiles. The reduction of impervious surfaces through greater development density can reduce surface and groundwater pollution resulting from stormwater runoff. Higher densities allow more wildlife habitat to remain intact. Working landscapes such as prime farm and ranchland can remain productive. Smart growth is thus a key component for reaching environmental sustainability.

Equity

Extensive research points to the sprawling pattern of development prevalent in the U.S. since about 1950 as partly responsible for an increase in class and racial inequity regarding housing, employment, transportation, and education (Starrett 1999). The implementation of smart growth development principles can assist in eliminating these inequities by increasing public and private investment into existing communities, providing incentives for affordable housing, and providing more transportation options for access to employment.

On the other hand, one of the most common criticisms of smart growth development is that it drives up housing costs, thereby negatively impacting moderate- and low-income people. As noted in the narrative on smart growth and property values, while smart growth policies can cause housing price increases, affordability issues can be mitigated by carefully designed and implemented growth management policies and tools such as community land trusts. Moreover, higher housing costs are often offset by decreases in other living costs, such as transportation and energy, and the increased quality of life that results from implementation of smart growth policies.

Conclusion

Smart growth development can make important contributions towards achieving sustainability. Through implementation of smart growth policies, the triple bottom line goals relating to economy, environment, and equity can be substantially advanced.

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