# Urban Spatial Plan Impact on Land Value

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Contributor: Hawnaz Magid Abdulla , Muammal Alaaddin Ibrahim

The availability of different types of zoning in cities due to urban planning, urban development, and design creates many problems, including land value and land price problems. On the land value side, several factors affect the land studied to determine its value. On the land price side, there is an exploratory reverse relation between land supply and its cost; an increase in supply leads to a reduction in land cost, while a lack of supply leads to a high price of land until the time comes that supply is equal to demand which is the satisfaction point.

urban spatial plan land value land price space syntax

## 1. Introduction

The availability of different types of zoning in cities due to urban planning, urban development, and design creates many problems, including land value and land price problems. On the land value side, several factors affect the land studied to determine its value. On the land price side, there is an exploratory reverse relation between land supply and its cost; an increase in supply leads to a reduction in land cost, while a lack of supply leads to a high price of land until the time comes that supply is equal to demand which is the satisfaction point. In new developments, the situation is different; increasing supply may not reduce the land price due to market fluctuation. In modern times, land has become a marketing resource used as a business tool; therefore, supply is less effective than it used to be. The availability of a weak economy and an oversupply of properties leads to low or no demand, and land prices tend to fall. On the other hand, land prices tend to rise with a strong economy, and a high demand for properties in a particular area, even with low supply. In addition, supply does not affect some properties in cities; for example, land in CBD areas, especially in developed countries, is increasing incredibly day by day without even considering supply.

In urban economy studies, various studies have attempted to determine land prices. According to the models recorded from the past three decades up until recent days, there is a need to obtain more accurate information about the relationship between the value of the urban street network and the price of land. Refs. [1][2] studied the effect of urban concentration and road networks on land value. The authors concluded that the impact on urban land values and the optimal space allocation for transportation activities still needs to be evident [2]. On the other hand, ref. [3] emphasized that land accessibility and location are the core concepts of land value and price. Land value occupies a more significant part of the research area, but it does so less implicitly in urban accessibility [3][4][5][6][7].

One of the critical characteristics of recent studies on urban morphology is the use of street networks to describe the built environment. Spatially, the city is not a collection of building blocks that may have geometrical regularities and ultimately architectural styles, but it is rather a network of interconnected open spaces created by those blocks of the urban grid [8][9][10]. Thus, the urban street or spatial grid can identify the diversity of a city. Many researchers have used street network patterns as an essential tool for urban assessment [11][12][13]. Ref. [14] (p. 66) identified that the sideways street could improve urban public spaces. Furthermore, ref. [10] studied 100 cities worldwide and demonstrated that cities could be analyzed according to their spatial network because of logical distribution: “Street networks organize and constrain a city’s transportation dynamics according to a certain spatial logic—be it planned or unplanned, ordered or disordered” [10] (p. 17). Such studies have unfolded cities in terms of their underlying spatial organization, tracing a connection between space and society, and revealing that the urban grid contains an imprint of a community [15]. Additionally, according to [16] (p. 53), the city’s communication generation mechanisms depend on the urban street network, which they defined as the spatial structure of the metropolitan area; this spatial structure can be described as a natural movement. The diversity of this natural movement causes the motion economy [16] (p. 54).

## 2. The Urban Economy and Urban Spatial System

As a fundamental component of the urban economy, the city center can define the origin of urban settlement and sustain it through economic growth. Several nodes can explain centrality as a theory of social and economic sciences in urban studies, with their association with the location of their network system. Traditionally, the city structure included a single city center. However, more recently, the city center has contained a monocentric city center and a multicenter of the urban form [17]. Changing economic development has led to a shift from a monocentric to a polycentric system. New urban economics can be traced back to Alonso (1964), Mutt (1969), and Mills (1967) as the creators of the pioneer theories of the urban internal structure linking land use to land markets. In urban land marketing, the Alonso bid rent theory (1964), based on van Thünen’s (1826) theory, explains the process of the formation and development of urban areas. The bid rent theory is the relation between the price and distance of land from the central business district (CBD). According to this theory, an urban spatial structure is the formation of a typical form of new classical economics; the spatial relationships between the different sectors explain the underlying drive for the functioning, appearance, and evaluation of cities. Bid rent theory is based on the reasoning that the more accessible an area is, the more profitable it is [18].

Regarding an urban street network and accessibility, ref. [19] pointed out that the city center should have a greater rate of employment for those who will thus choose to dwell in the city, considering the aspects of cost and also time. Ref. [20], in his book Edge City: Life on the New Frontier, discussed that the city’s edge is made up of many segregated centers out of the traditional business centers in suburban areas. According to [21], the new urban economic theory, as contemporary urban economics, works not only as a microeconomic theory but it also deals with urban spatial interaction theory; thus, this model balances supply and demand, the main features of urban economics. However, many other factors influence land markets at the microeconomic and macroeconomic levels; for many researchers, supply and demand primarily drive the market behavior [22][23][24] because some multi-collect

factors play significant roles in supply and demand. Based on [25][26] studies, urban land price can be determined by economic fundamentals, including supply and demand at the city level. Supply and demand are among the oldest determinants of land prices; according to [27], land supply and demand are two factors that influence 80% of land price increases.

On the supply side, urban planning and design play a more significant role in defining land value; land distribution is a fundamental factor affecting the land market. For example, residential properties with access to more metro lines and stations and bus stops were associated with higher housing prices, with metro stations exerting more effects [22]. Four influencing factors have the most significant influence on housing price, distance to the inner ring, distance to the hospital, bus density, and space to the subway station [28]. Macroeconomic variables such as location, the availability of service buildings and infrastructure, and commercial activities explain land price; therefore, spatially, at the urban level, the value of land does not share the same logic as land price. Some of the most expensive plots of land are located on the city side, or in the heart of the city, and some of the lower-priced plots are situated in the suburbs or formal areas. On the demand side, land price increases as demand for land increases. Additionally, a higher order for good land causes the price of the ground to be higher; in many cases, much higher than what is affordable. For example, more affluent residents may be willing to pay a higher fee for a good view of the lake, while infrastructure barriers have an adverse effect [29]. A study by [25] demonstrated that solid demand in the Chinese real estate market causes the housing demand to exceed the supply market and raises housing prices, which subsequently raises land prices. Otherwise, economic fundamentals determine land value and cost at the urban level. Increasing capital raises the prices of local housing [30]. It can be stated that the demand for accessible land close to amenities with an applicable infrastructure is growing without considering affordability.

The modern era of the urban system differs from the 19th century; it includes a monocentric sample that calls polycentric development more attractive than before. In this way, the urban polycentric structure encourages the agglomeration of the local economy. Thus, urban economy and form can be evaluated based on spatial distribution. From an economics perspective, Alonso's theory as a model economic distribution theory [5], and space syntax as the most relevant software for urban spatial analysis provides a better understanding of urban land economics.

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