



THE INFLUENTIAL FACTORS ON LAND VALUATION: A STUDY COUNTRIES IN THE WORLD AND LESSONS FOR VIETNAM

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Abstract: Through research, it has been shown that within each group of directly or indirectly impacting factors, there are always factors with varying degrees of influence. Regarding natural factors, the location of the land parcel has the most significant impact on land prices, followed by factors such as shape, area, and soil fertility. However, assessing the extent of influence of these factors on land prices is relative, and the degree of impact depends on the specific context of the land parcel and its users. Each land user has different needs. Studying these influencing factors serves as initial theoretical groundwork for determining appropriate and accurate land pricing policies.

Keywords: land valuation, influencing factors, Vietnam

1. INTRODUCTION

Land is a precious natural resource, a national asset of great value, a special production material, and an essential component of the living environment. Given its immense economic value, land issues have always been hot topics for every nation and locality, and land has long been recognized as "valuable" (Dang Hung Vo and Nguyen Duc Kha, 2005; Hoang Van Cuong, 2010).

With the continuous development of the market economy, land is considered a special commodity that can be traded, bought, sold, and transferred in response to human needs. "Land price" serves as a link between the relationship of land-market-government management. The state regulates land management through land prices, in other words, land prices are an economic tool for land managers and users to access market mechanisms while also serving as a basis for evaluating fairness in land distribution, ensuring that land users fulfill their obligations, and allowing the state to regulate land relationships in accordance with planning and laws.

Effective land price management will be a powerful tool in land finance policies, ensuring a stable, long-term source of revenue for the state budget, healthy development of the real estate market, and addressing shortcomings in land management and use, ensuring efficient and economical land use. Land prices are influenced by various factors. Some factors directly affect land prices, such as natural factors, economic factors, and user psychology, while others indirectly impact land prices, such as macroeconomic policy factors, climate factors, social security factors, and international factors.

2. OBJECTIVES, SUBJECTS, CONTENT, AND RESEARCH METHODS

2.1. Research Objectives

Research and evaluate the factors influencing land prices.

2.2. Research Subjects

The group of factors influencing land prices in some countries around the world and in Vietnam.

2.3. Research Content

The origin of land prices.

Factors influencing land prices in some countries around the world.

Factors influencing land prices in Vietnam.

2.4. Research Methods

2.4.1. Data Collection and Primary Document Method

In addition to researching data, documents, legal texts related to land prices, land value areas, and local planning directions in the research area, it is necessary to

collect other information through two sources: External data (on-site) and internal data: Internal data collection includes spatial data and attribute data related to natural and socio-economic conditions, land data (climate characteristics, soil fertility, land use status, etc.), statistical land data from wards, cadastral maps, and current status maps from specialized agencies with selective inheritance. External data includes information obtained from the field to update and supplement information such as alley names, alley widths, alley conditions, market land prices, etc. Data collection methods include surveys, interviews with residents, and on-site surveys.

2.4.2. Data Synthesis and Processing Method

Synthesize the collected data in an Excel spreadsheet, including numerical and textual data.

Classify numerical data such as land prices, area, etc., in an easily understandable table and encode attribute data in textual form.

Experimental method: Experiment with real data to clarify the theoretical basis presented.

2.4.3. Expert Method

Consult the opinions of experts in the research field, refer to documents, studies, and scientific reports that have been published.

3. RESEARCH RESULTS

3.1. Origin of Land Value

3.1.1. Adam Smith's View on Ground Rent

Adam Smith (1723-1790), a prominent figure in classical political economics in England and the founder of the economic political theory system, presented and systematically analyzed the earliest theory of ground rent in his work "The Wealth of Nations." He argued that in a capitalist society, there are three basic classes: the laboring class, the capitalist class, and the land-owning class. He also divided income into three types: wages, profits, and ground rent.

According to Adam Smith, ground rent is the result of land ownership rights and is the income of the land-owning class in capitalist society. Ground rent is the price paid for using land, and it is the means by which landowners profit from their land ownership rights. It is income not derived from labor but received nonetheless.

He also related ground rent to the monopoly of land ownership, considering ground rent as a monopoly price. Thus, Adam Smith came very close to the absolute theory of ground rent. This is his first theory of ground rent.

However, when explaining the origin of ground rent, Adam Smith believed that ground rent is a product of nature's contribution and is a part of production costs. The generation of ground rent is the result of nature's contribution to agricultural production. He argued that ground rent is one of the sources of value, a component of the value of products. This is his second theory of ground rent.

From the theory of class structure and basic income of classes in capitalist society, he concluded that the value of all products is composed of three income components: ground rent, wages, and profits. In other words, the value of land commodities is made up of ground rent, wages, and profits.

3.1.2. David Ricardo's View on Ground Rent

David Ricardo (1772-1823), a classical political economist of the capitalist bourgeoisie, was a major representative of classical political economics in England. In his work "Principles of Political Economy and Taxation," he developed the most thorough theory of labor value possible according to the perspective of the capitalist class. Building on Adam Smith's value theory, he refined and elaborated on the central ideas of Smith's value theory. He further distinguished between exchange value and use value, emphasizing that value results from the expenditure of labor creating and producing.

Regarding ground rent, Ricardo built his theory on the labor value theory and argued that ground rent arises from land ownership rights. He identified two conditions for ground rent to exist:

Limited land area.

Variation in the quality and location of land.

Because land has these characteristics, the value of agricultural products is determined by the amount of labor applied to produce them on the worst-quality land. Therefore, even though the same amount of labor is invested in land, the value of agricultural products differs depending on whether the land is of good, medium, or

poor quality. The excess profit obtained from initial investments in land, when compared to the worst-quality land, becomes ground rent.

Ricardo believed that the diminishing fertility of land over time, despite continuous investments of capital and labor, leads to diminishing returns. As a result, initial investments on land yield super-normal profits, which transform into ground rent. He categorized two forms of differential rent:

First form: Ground rent arises from differences in land quality and location, with equal investments in labor and capital.

Second form: Ground rent arises from continuous investments of capital and labor on the same land, but with varying levels of productivity.

Ricardo argued that ground rent is a result of the difference in labor productivity on different land parcels. Therefore, although only one type of capital (labor) is used in equal amounts, the value of agricultural products differs depending on land quality, leading to excess profits and the formation of ground rent.

However, there were still several limitations and shortcomings in Ricardo's theory of ground rent:

While he acknowledged that ground rent is derived from land ownership rights, he underestimated the significance of land ownership rights and did not clearly distinguish between feudal ground rent and capitalist ground rent.

He considered the conditions for the formation of ground rent as the cause of its existence.

He linked differential ground rent to the cultivation of good and bad land, proposing the "law of diminishing fertility of land," which is not entirely accurate.

In his theory of ground rent, although he did not fully accept Adam Smith's theory that the value of land commodities is composed of ground rent, wages, and profits, he did not recognize the concept of absolute ground rent. This is the major limitation of Ricardo's theory of ground rent.

3.1.3. Karl Marx's View on Ground Rent

Karl Marx (1818-1883), based on a critical examination of the rational aspects of Adam Smith's and David Ricardo's theories of ground rent, inherited, developed, and perfected his own theory of ground rent. He believed that landowners derive

income not through labor but through land ownership rights, and this income is called ground rent. In other words, ground rent is the realization of land ownership rights in the economy. According to Marx, in a regime of land ownership, all ground rent is the product of surplus labor, appropriated by landowners. In different societies, social relations manifest ground rent differently in terms of characteristics and content.

In feudal society, ground rent exists in the forms of rent in kind, rent in kind, and money rent. In capitalist society, ground rent is a component of surplus value that exceeds the average profit. This occurs because landowners charge land rent to capitalists for using land. There are two types of ground rent: differential ground rent and absolute ground rent.

Differential ground rent is a fundamental form of ground rent in capitalist society, resulting from the excess profit obtained by landowners from good and medium-quality land, which they lease to capitalists. Due to different conditions, differential ground rent is divided into two types: differential ground rent I, which arises from differences in land fertility with varying distances to the market; and differential ground rent II, which arises from varying productivity resulting from regular additional investments on the same piece of land.

Absolute ground rent is another fundamental form of ground rent in capitalist society, resulting from landowners benefiting from land ownership rights. It is the surplus of the value of agricultural products over the production cost created by agricultural laborers. This surplus exists regardless of whether the land is of good or bad quality, and all land tenants must pay it to the landowners. According to Marx, the monopoly of land ownership rights is the fundamental reason for the existence of absolute ground rent. In modern capitalist countries, the organic composition of capital in agriculture is equal to or even higher than that in industry. In this context, absolute ground rent does not necessarily result from the price difference between the value of agricultural products and their production cost but rather from the monopoly price of land.

From his research results on ground rent, Marx pointed out the limitations of Adam Smith's view that ground rent is a component of the value of land commodities. He also criticized Ricardo's major mistake of denying the existence of absolute ground

rent in capitalist society. Marx firmly asserted that ground rent is not a component of the value of land but rather reflects the price of land when it is treated as a commodity. The purpose of land purchase is to acquire the right to collect land rent. Therefore, the actual price of land is not the price of land purchase but the price of the rent income. The price of land is directly determined by how much land rent is charged and the level of profitability. When the amount of land rent remains unchanged, the land price is inversely proportional to the level of profit. When the level of profit remains constant, the land price is directly proportional to the land rent. Therefore, the formula for calculating land price is as follows:

$$G = \frac{T}{L}$$

In this context:

G represents the land price.

T represents the land rent.

L represents the profit rate.

Land is both a natural resource and an asset. As a natural resource, it is considered a product of nature and does not have a price. However, as an asset, it does have value, and the value of land is primarily determined by the price of land rent. The value of land includes the following components:

The cost of land exploitation.

The accumulated value in land business. This component consists of two parts: the value of products generated from labor and investment in land, which is transferred and accumulated in land products, and the value of the land itself, which is transferred and accumulated in the land.

The cost of building or repairing structures on the land (if applicable).

The cost of land exploitation in urban areas (for urban land).

3.2. Factors Influencing Land Valuation in Some Countries Worldwide

Valuation is a science that estimates the value of a specific asset for a specific purpose, at a specific point in time, considering all the characteristics of the asset and taking into account all the fundamental economic factors in the market, including various investment options (GS. Lim Lan Yuan - Department of Construction and Real

Estate - National University of Singapore). Land and real estate are also assets, so land valuation is similar to valuing any other asset. However, land valuation has its unique aspects, primarily related to its geographical location.

Each country has specific regulations regarding land valuation, depending on its legal framework. In developed and many developing countries, there is significant emphasis on investing in the theoretical and practical aspects of land valuation, and systems have been established and stabilized over time.

The purpose of land valuation can vary depending on different management objectives, and each country may have distinct goals for land valuation.

3.2.1. Factors Influencing Land Prices in China

According to the perspective of Ma Kha Vi in "Theory and Methods of Land Valuation," there are factors that influence land prices in China, and they can be categorized into common factors, regional factors, and individual factors based on their relationship with land and their scope of influence.

Firstly, common factors: These are factors that have a general influence on land prices and are community-related, affecting the overall land prices in normal economic and social conditions.

(1) Administrative factors: Primarily, these factors include government intervention in land prices, stemming from the overall societal interests and macroeconomic development perspective. This intervention significantly impacts land prices.

Land tenure system: It encompasses ownership and land use rights, directly affecting the existence and fluctuations in land prices.

Housing policies: Traditional housing policies involve welfare-based rent control and capital investment in real estate without engaging in personal business activities, relying on state finances. It is necessary to promote the commercialization of housing, thus encouraging healthy investment cycles and fostering reasonable land prices.

Urban planning: Regulations concerning land use, plot ratios, and architectural density play a substantial role in land prices.

Land price policies: These policies influence the trend of land prices. Loosened policies tend to result in higher land prices, while tightened policies lead to lower prices due to constraints. Management policies also impact investor sentiment regarding land prices.

Tax policies: Land prices are affected by tax rates, whether they are high or low. Higher taxes lead to reduced accumulation, decreased investment, and growth, ultimately reducing land demand and prices, and vice versa.

Administrative changes: Generally speaking, these changes tend to increase prices, with two main types: upgrading and transferring management rights from one area to another.

(2) **Population factors:** Population status is the most significant factor in the socio-economic context.

Population density: As population density increases, land demand and land prices tend to rise.

Population quality: This is correlated with the level of education and cultural background. Higher-quality populations contribute to social stability and a better living environment, indirectly increasing land demand and prices.

Population composition: The prevalence of small families commonly leads to an increase in housing demand, correspondingly driving up land prices.

(3) **Social factors:** The state of social development and stability has an impact on land prices.

Political stability: When domestic political stability prevails, real estate investment operates normally with lower risks, instilling investor confidence and leading to price increases. Conversely, when political stability is compromised, land prices may decrease.

Social security: The state of social order, whether good or bad, affects prices. If investors perceive security, land prices tend to increase. There is a certain correlation with the state of domestic politics.

Real estate speculation: Sudden impacts on prices, especially in the housing market. When supply is less than demand, speculation leads to higher land prices. When supply exceeds demand, selling pressure causes prices to drop.

Urbanization process: Regions with a dense population and a high rate of immigration tend to experience rising land prices.

(4) International factors: The development and improvement of the real estate market are intertwined with international circumstances.

World economic conditions: The economic development of a country is closely related to the global economy and the real estate market. Economic recession leads to price drops, while recovery and growth result in price increases.

International political factors: International political relationships often encompass economic aspects. Favorable international relations benefit foreign investors in real estate and drive land prices higher.

(5) Economic factors:

Economic development status: National income is a crucial indicator; when it increases, land prices also rise. The trend in land demand corresponds broadly to the economic cycle.

Reserves and investments: These are positively correlated. Higher reserve levels, influenced by capacity and desire for reserve holdings, lead to increased land demand, thus higher prices.

Financial revenue and expenditure: This reflects a country's economic strength, externally manifested as cash supply. If cash supply increases, circulation increases, demand rises, and prices increase. Conversely, when cash supply decreases, land prices may decrease.

Income levels and consumption: As income levels rise, there is a higher demand for quality and spacious housing, leading to increased land prices.

Commodity price fluctuations: There is a direct correlation with the real estate market. If commodity prices increase substantially, land prices rise as well. However, this price surge is primarily observed in urban areas, with rural regions less affected.

Interest rates: Investment and land acquisition often involve the use of capital. Real estate investors and valuation personnel need to understand interest rate fluctuations.

Second, regional factors:

This factor encompasses the natural conditions, as well as the socio-economic conditions of a location. The local characteristics resulting from the interaction of these factors have a decisive impact on the price levels in that particular region.

(1) Location: Primarily, this refers to economic location (land classification, distance to city centers, commercial hubs, population centers, and the influence of these centers on other areas within the city or types of land).

(2) Transportation conditions: This includes the type, convenience, and connectivity with the outside, as well as the structure and density of transportation networks, road conditions, public transportation, etc.

(3) Infrastructure conditions: Infrastructure and supporting facilities play a significant role.

(4) Environmental quality: Both human and natural aspects of the environment are considered.

(5) Urban planning constraints: Factors that primarily affect land prices are the nature and structure of land use, land use restrictions, traffic management regulations, etc. The extent of their impact on land prices in a region is directly related to the characteristics of different functional zoning and land use within the city.

Third, individual factors:

These factors are specific to each individual plot of land and are also known as land parcel factors. They affect the prices of individual plots differently and include nine elements: area, width, depth, shape, slope, primary infrastructure conditions (telephone, gas, heating systems, etc.), urban planning constraints (plot density, building height, etc.), location, and land use duration.

3.2.2. Factors Affecting Land Prices in Taiwan

According to the perspective of Professor Lam Anh Ngạn in "Real Estate Valuation" in 1995, the factors influencing land prices can be categorized into four main types:

Economic Factors:

Demand variables affecting land value include employment levels, wage ratios, income levels, purchasing power, financial availability, interest rates, and transaction costs.

Supply variables include the availability of land, development and construction costs, financial factors, taxes, and other expenses.

These variables can vary from one region to another.

Social Factors:

These factors help explain land use patterns, demand, and prices. Social scientists argue that basic human desires for land and social equality are the driving forces behind land occupation and subsequent land use until a new balance is achieved with different land use patterns and land values. Other factors influencing land use patterns and values include age, education, crime rates, and pride of ownership.

Legal, Government, and Political Factors:

Policies can either promote or hinder economic growth and land demand. Land development mechanisms include taxation, zoning, land use control, and leasing. The quality of government services at the local and national levels (e.g., infrastructure, education, public transportation, law enforcement) also impacts land demand.

Natural Environment and Location Factors:

These factors largely explain land value patterns within a city or market area. When analyzing these factors, it is important to distinguish between characteristics and location attributes. Characteristics include the physical attributes and natural characteristics of a land parcel, such as size, terrain, and other natural features, which affect land value by enabling owners to utilize the land's inherent resources. Location attributes focus on a land parcel's position relative to other parcels, affecting value through proximity or accessibility to other resources. A successful land pricing model should incorporate both location and characteristic variables. These factors collectively contribute to the complex dynamics of land prices in Taiwan, with each playing a distinct role in shaping the real estate market.

3.2.3. In Turkey

According to researchers in Konya and Istanbul, Turkey, land value in residential areas depends on conditions within the scope of the street, and this dependency is reflected through urban parameters.

First is accessibility: Accessibility parameters are defined as the distance between each independent street and the nearest public service units. These

characteristic public service units include elementary schools, high schools, universities, cultural centers, healthcare services, commercial centers (CBDs, shopping centers, retail centers), recreational areas (green spaces, sports facilities, playgrounds), police stations, churches, and the coastline.

Second is visual and environmental quality factors: The parameters of these factors represent environmental functions, thus affecting land prices and are assessed on a scale of 1-5. Here, they are divided into two types: building frontage and streets. Experts have determined the value of building frontage based on the following urban design parameters: architectural and historical significance, building materials, aesthetics and diversity of building frontage, visual effects of the building in its environment, harmony among grouped buildings in terms of height and size, functional and physical relationships among buildings, types and colors of building materials, etc. Parameters to determine street value include street size that allows service vehicles to access easily, road surface materials, traffic density of motor vehicles and pedestrians on the street, the existence of parking lots, location and use of trees on the street, location of trash bins on the street, frequency of cleaning services in a week, frequency of urban infrastructure usage, noise level on the street, landscaping, good seating and viewing points on the street, existence of billboards on the street, good camouflage of infrastructure elements like cable lines, the presence of a common design language on the street, etc.

Third is security: Four criteria are used to determine the safety level of streets: security of parking lots, street lighting at night, street activity level, and transparency of residential areas on the street.

Fourth is spatial structure: The interaction between spatial structures and land value will be analyzed using the Space Syntax Method.

Fifth is the street-density relationship: An index called "livable area index" is used to determine the relationship between streets and their density. This index provides a correlation between the total built space area and the total open space area within a neighborhood. The concept of open space has been defined in more detail in this study, dividing open space into three parts: pedestrian areas, parking areas, and recreational and entertainment areas (Bolen, et al, 2005).

3.3. Factors Influencing Land Prices in Vietnam

To carry out land valuation activities, it is essential to distinguish between the components of land prices and the factors influencing land prices.

Group of factors related to individual land parcels.

Group of factors related to the market.

Group of factors related to the government and legal system.

3.3.1. Factors Associated with Land Parcels

a. Natural Factors

Location of the land parcel: The profit potential of a land parcel is directly related to its location. The higher the profit potential due to the land's location, the greater its value. Each land parcel simultaneously exists in two types of locations: absolute location and relative location. In a general sense, both types of locations contribute equally to the land parcel's value. However, in specific cases, the contribution to the overall value of the land parcel may differ between the two types of locations. This explains why land parcels in urban centers or certain regions have higher values compared to similar land parcels in peripheral areas. It also explains why land parcels at intersections of roads or streets have higher values compared to similar land parcels in the same area that are not at intersections. Evaluating the advantage of a land parcel's location is extremely important, especially in valuation activities. The valuation experience of many countries shows that an accurate and objective assessment of the impact of location factors can only be achieved based on market prices and vice versa.

Size, shape, and area of the land parcel: Some measurements regarding the size and area of the land parcel are optimal when they satisfy specific needs of the majority of the population in the region. For example, in Hanoi, for residential purposes, the optimal land parcel size typically ranges from 4 meters to 5 meters in width and 10 meters to 15 meters in depth.

Terrain of the land parcel: The elevation of the land parcel in relation to nearby land parcels directly affects its price. However, the degree of impact of terrain factors

depends on the characteristics of the neighboring area, whether it is residential, industrial, agricultural, or commercial. If the neighboring area is residential with good drainage services, higher-elevation land parcels will have a higher value, and vice versa. If the neighboring area is an industrial zone (e.g., cement or steel production), land parcels at higher elevations and upwind locations will be less affected compared to those at lower elevations and downwind locations.

Surface and subsurface characteristics (soil fertility, physical properties of the soil layer): The extent to which these factors affect land or property prices depends on the intended use. For example, the thickness and fertility of the surface soil layer have a significant impact on land value when the land is used for agriculture or forestry but have a lesser impact when the land is used for construction, which is more related to the mechanical properties of the soil layer.

Architecture of structures attached to the land for land parcels with buildings or constructions (referred to as real estate): The architecture of real estate directly influences its value. If two real estate properties have the same location and construction costs but one has an attractive architectural design that aligns with market preferences, it will command a higher price.

Natural factors: The influence of nature on the price of a specific real estate property depends on the geographical area. In coastal cities, residential properties with a sea-facing frontage often have higher values compared to similar properties facing away from the sea. Properties located outside levees along the Red River are at a higher risk of flooding and thus have a higher risk factor than properties with the same purpose and similar locations but situated inside the levees.

Environmental factors: Environmental factors affecting property prices include water quality, air quality, noise levels, and more. The impact of these factors on land and property prices is most pronounced in urban areas, industrial zones, and economic zones.

b. Economic Factors

Profitability potential: In the context of land use planning, land parcels with high profitability potential over a longer period of time command higher prices. Criteria for evaluating profitability potential include annual income, income over a period, or one-

time income (measured per unit area, typically in square meters or hectares) and the effective business period (the period with net income after tax, measured in square meters or hectares).

Support facilities for production and business activities associated with the land parcel; amenities serving human life: The efficiency of support facilities associated with the land parcel for production and business activities and the utility of amenities serving human life, such as electricity, water, sanitation, temperature control, and communication, are both integral components of property value. Support facilities directly attached to the land parcel that have high value but low utilization efficiency and modern-life amenities that are incompatible with the architecture of the associated property can lower the property's price compared to its intrinsic value.

External infrastructure outside the land parcel: Although they do not directly contribute to the value of the land parcel, the scale and quality of external infrastructure significantly influence the prices of nearby land parcels. Well-planned and high-quality external infrastructure projects can increase the value of neighboring land parcels, while inadequate infrastructure can have the opposite effect.

c. Legal Factors

Legal factors associated with each land parcel include land use planning, legal aspects of land use, and any restrictions on exercising land use rights, home ownership rights, and other property rights associated with the land:

Land use planning: The type of land, land use objectives, and land function are determined based on land use planning. With the same land area, location, and type of land, different land types, objectives, or functions allowed for use can result in different land prices. Among the factors affecting land prices, the legal status of the land parcel in relation to land use planning is one of the most significant.

Legal aspects of land use: The legal aspects of land use include the legal rights to land use and the legal status of the current land use situation (land use objectives, land use area). It also includes the legal status of existing structures.

d. Psychological and Environmental Factors

Psychological and environmental factors often associated with each land parcel include:

The psychological factors of land transfer recipients, property buyers (feng shui), and property users (spirituality).

Environmental living conditions (for residential land parcels and residential properties) such as air quality, water quality, and noise levels.

These factors collectively contribute to the overall value of a land parcel or real estate property, and their impact can vary depending on the specific circumstances and location.

3.3.2. Factors Related to the Market

a. Real Estate Supply Factors in the Market:

Real estate supply in the market refers to "clean land," which is real estate that has been completed and is ready for immediate transaction. Real estate supply includes the supply of land and the supply of developed real estate (land with constructed buildings). They are determined by the following criteria:

Land Supply: The criteria for determining land supply include the area of agricultural land, undeveloped non-agricultural land, and unused land. In areas where agricultural land and undeveloped non-agricultural land are scarce or in short supply, land prices are typically higher than in areas where such land is more abundant.

Real Estate Supply: The criteria for determining real estate supply include the stock of residential properties, land with completed construction but not yet transferred or leased in urban areas, residential areas, industrial zones, and economic zones. When the supply of land and real estate increases while demand remains constant, land and real estate prices tend to decrease, and vice versa.

b. Real Estate Demand Factors in the Market:

Real estate demand in the market refers to the demand with the ability to pay when transactions occur. Real estate demand includes demand for land and demand for real estate. They are determined by the following criteria:

Land Demand: The criteria for determining land demand include the need for land for investment in urban development projects, industrial zones, economic zones, and land for production and other business purposes. It also includes land for constructing public facilities and agricultural land, as well as land for rural residential purposes.

Demand for Residential and Construction Projects: The criteria for determining demand for residential and construction projects include the housing needs of the population, the need for production and business space to support industrialization and modernization, and the need for technical infrastructure and social infrastructure to support economic growth.

c. Supply and Demand Factors in Real Estate Market:

Supply and demand factors affect land prices not only when the supply-demand relationship is imbalanced but also throughout the market's cyclical movements. Among them, land prices are most affected when the supply-demand relationship reaches an imbalance and least affected when the supply-demand relationship is in equilibrium.

3.4.3. Factors Related to the Government and Legal System

Changes in the state structure result in changes in the country's direction, policies, and laws in general. While the value of assets acquired through property rights as defined by law is crucial, changes in the state's direction and policies can impact the real estate market as a whole and investment activities in real estate in particular. These changes can either increase or decrease the demand for land and housing. The direction of this impact, whether positive or negative, encouraging or restrictive, depends on the specific policies of the government. In other words, it also depends on the political intentions and the level of government control over the real estate market. In our country, policies that directly affect land and real estate prices include:

Financial policies applied to individuals who are granted land by the government, lease land, reclaim land, and those who receive land use rights.

Credit policies regarding investment activities in the real estate sector.

Investment policies related to agricultural and non-agricultural production and business activities.

Tax policies concerning real estate.

3.3.4. General Formula Representing the Impact of Factors on Land Prices

Based on the studies and analyses mentioned above, the impact of factors on land and real estate values can be represented by the following general formula:

$$Value = f(X1, X2, X3, X4... Xn)$$

In which: $X1 \rightarrow Xn$ are factors influencing land prices.

In the case of land or real estate generating direct income (income-generating real estate) such as commercial or service land, the land value is considered to reflect the entire economic impact of the factors that contribute to its value (utility) as mentioned above. This can be represented in principle by the formula below:

$$Value = f(at.Vt.Pt)$$

In which:

"at" represents the income level in one year (the base year);

"Vt" is the income ratio over the years compared to the base year (%) - it measures the change in income over the years relative to the base year.

"Pt" is the profit rate (for capital cost).

4. CONCLUSION

Through this research, it is evident that within each group of direct or indirect influencing factors, there are always elements that have a significant impact and those with a lesser impact. Regarding natural factors, the location of the land plot has the most significant influence on land prices, followed by factors such as shape, area, and soil fertility. However, assessing the degree of influence of these factors on land prices is relative, as it depends on the specific circumstances of the land plot and its intended use. Different land users have varying needs. Entrepreneurs seek land with favorable business locations, while elderly individuals prefer land near hospitals or parks with a peaceful environment. Families with young children prefer land close to schools or office locations, and farmers favor land with large areas and good soil fertility for convenient irrigation, and so on. Additionally, there are individual cases that can cause abnormal increases or decreases in land prices. Land prices are influenced by numerous factors to varying degrees, all of which determine the land's profit potential. However, this benefit varies for each type of land user. The assessment of the degree of influence of these factors is, therefore, relative in nature.

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