

## **Influence of geographical factors on urban land valuation**

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One of the most relevant terms in present-day economic geography is 'land value'. It is a resource, influencing territorial development and physical planning in both short and long term prospective. Value formation for agricultural land, woodland and urban area is subject to various geographical factors. For farmland valuation the most important factors are soil fertility, type of terrain, specific climatic conditions, i.e. those more closely related to physical geography. The case of woodland valuation is similar. Unlikely, the area value in urban settlements is determined by rather economic geographical than physical geographical factors.

This paper intends to explore the influence of economic geography factors on valuation of urban territories, and consequently – on their land value for the purpose of large-scale evaluation.

This problem is still underexplored in Ukraine, since the term «area (land plot) value» is attributable to the market economy and did not have any practical relevance in a system of socialist economic planning. At present Ukraine is in transition to market economy, and therefore the term «area value» has become very meaningful in the process of developing various methodologies for land valuation within the urban settlements.

Our understanding of the value of urban territory is based on the generation of surplus value within the territory due to the advantages in geographical location and provision of infrastructure. Advantage in geographical location results in the formation of differential rent 1 within the urban settlement, which had been studied in-depth by numerous economists starting with Karl Marx. The level of infrastructure development, in turn, provides a source for the formation of differential rent 2. Geographers seem to consider important to perform studies on the disparities of differential rent 1 within the urban settlements, which would rather represent the geographical component of the differential rent.

Let us review the quantitative difference in area value per unit (sq. meter) of the cities, varying in population, geographical location, economic structure (function) and administrative status. This variation undoubtedly exists, which can be proven by the difference in market value of real estate (land plots, floor space of apartments and shopping centers etc.). Such difference originates from exercising the geographical component of the differential rent at the regional level.

Geographical location is one of the most prominent factors, influencing the value of urban territory. At the stage of land market development the influence of geographical location on the value of urban land is mainly manifested by the presence of urban settlements in certain regions of Ukraine, which create favorable or unfavorable conditions for the formation of geographical component of the differential rent. Location of urban settlements in the following places is considered as the decisive factor:

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- Resort areas on the seaside;
  - Resort areas in mountains (Carpathians);
  - Other resort areas;
  - Border zone;
  - Zones of radioactive contamination as aftermath of the Chernobyl accident;
  - Zones of environmental pollution, natural or man-induced hazard;
- Suburban areas of big cities.

Whereas location of an urban settlement in the resort, border or suburban areas tends to increase its rent potential, its location in the Chernobyl zone or in areas of environmental pollution and natural or man-induced risk has a negative effect on it.

Population size is also an important factor which controls the average value of urban territories to a high extent. It is evident, because population size of cities and towns shows a close correlation with the overall scope of investment into urban infrastructure and with social and economic development level of the cities.

An examination of average values of urban land in the settlements of different size makes it clear that, as a rule, this value tends to grow with the increase in population size (Table 1).

*Table 1. Average value of urban territory in the settlements of different size as of 1/01/ 2005*

Population size, thousand inhabitants	Average value, € per m <sup>2</sup>
Over 2000	30
1000 to 2000	21
500 to 1000	18
250 to 500	11
100 to 250	10
50 to 100	7
under 50	4

Administrative status though plays quite an important but not the decisive role in the formation of urban territory value. The Ukrainian urban settlements fall into the following categories by administrative status: capital of the state, city of Kyiv; city of Sevastopol of republican subordination and city of Simferopol, capital of the Autonomous Republic of Crimea; regional centers; district centers; cities of regional subordination; towns of district subordination; villages; and other settlements.

Similar to population size, one can find here a direct relationship between the level of the urban territory value and prominence in administrative status. For example, average land value in Kyiv could be 100-fold of that in the rural settlements.

Economic functions of urban settlements along with the population size and geographical location exert a major impact upon the geographical component of differential rent.

At present in economic geography there are several classifications and typologies of urban settlements, with respect to their economical structure or functions.

A typology of urban settlements was performed taking into account their economic functions as a factor affecting the formation of urban land value. The following settlement types were distinguished: multifunctional centers, old industrial centers, new industrial centers, rail junctions, ports, agricultural centers and resort & recreation centers.

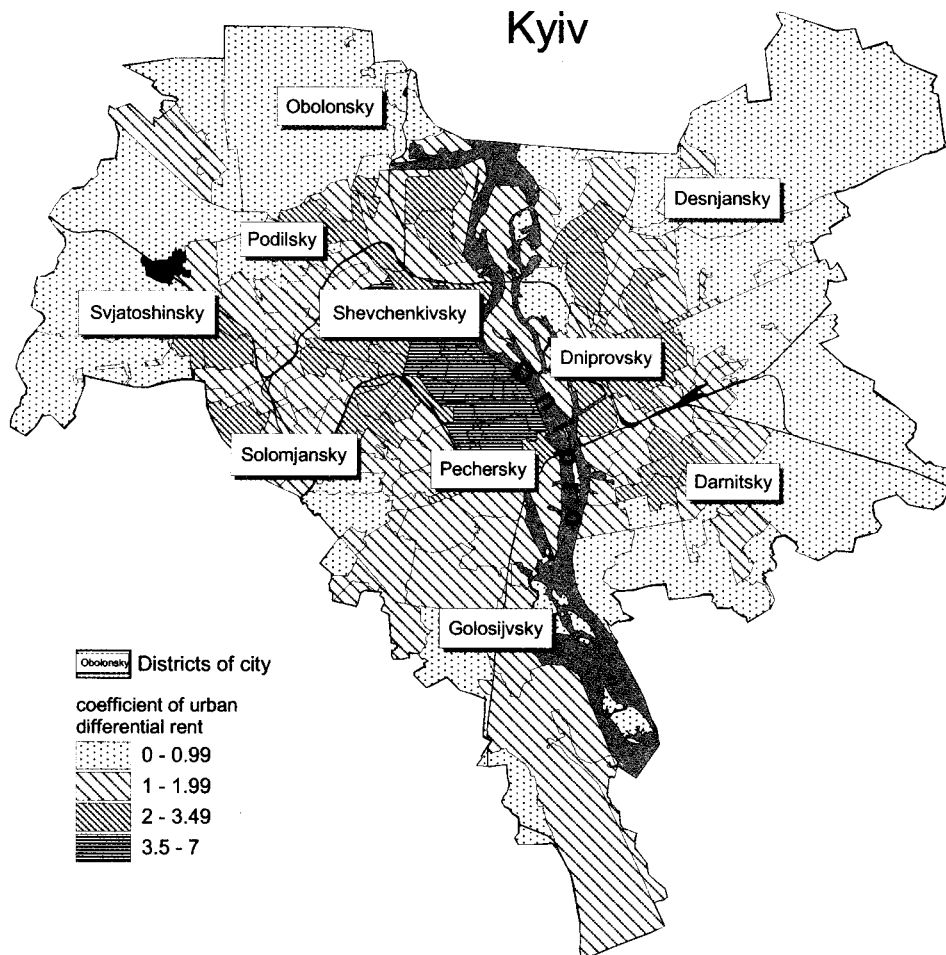


Fig. 1. Urban land valuation in the City of Kyiv

The highest average value of urban territories is basically similar for the *multifunctional centers* with well-branched system of industries, developed market infrastructure and high indicators of social and town planning attractiveness. They include 31 Ukrainian cities; of them Kyiv, Kharkiv, Dnipropetrovsk, Donetsk, Odesa, Lviv, and Zaporizhzhya are the largest.

*Old industrial centres* are featuring relatively low average values of urban land, since social, economical and town planning processes run counter their attractiveness and thus predestined reduction of differential rent. In Ukraine altogether 82 such industrial centers were selected, including: Kryvyi Rih, Dniprodzerzhinsk, Makiivka, Lysychansk, Krasnyi Luch, Horlivka. A high number of settlements of urban type in Donetsk, Luhansk and other regions also belong to this type.

Unlike the old industrial places, *the new industrial centers* provide favorable conditions for increasing the differential rent due to development of industries attractive

for investment (electrical engineering, oil processing, and certain branches of chemical industry). Among the total number of new industrial centers (44 cities and towns) one can distinguish townships near to nuclear power plants (Kuznetzovsk, Netishyn, Energodar, Yuzhnoukrainsk), centers of oil processing (Lysychansk, Kremenchuk, Nadvorna, Boryslav) and pulp-and-paper industry (Malyn).

Nowadays easy and comfortable transport accessibility pushes up the value of urban territories. Land value has increased remarkably in the urban settlements being *rail junctions* (Lozovaya, Fastiv, Kovel, Zhmerynka etc.), sea and river *ports* (Yuzhnoe, Illichyvk, Ochakov etc.). As a total 55 towns with rail junction function and 9 ports were selected in Ukraine. A majority of the settlements of urban type also fall in this category.

A distinct place in typology belongs to settlements being *resort & recreation centers*. First of all it is Yalta, Alushta, Alupka, Saky, Truskavets, Svaliava and Myrhorod. The number of resorts and recreational centers is 26. Part of the townships also fall in this type.

The most numerous category of the urban settlements in Ukraine is that of *agricultural centers*. Manufacturing capacities in these settlements are primarily represented by agrifood industry and manufacturing of consumer goods, which in the present situation as a rule do not stimulate the growth of differential rent. The total number of agricultural centers amounts to 200.

Complex influence of spatial factors on the geographical component of the differential rent can be characterized by an averaged indicator (coefficient). The weight of various factors influencing the rent value can be approached by expert evaluation based on the analysis of market value of urban land (*Fig. 1*).

Studies on the influence of geographical factors upon the formation and behavior of the urban land value has significant theoretical and practical implications and should be continued in future town planning and geographical studies.