

УДК 338.51
DOI: 10.31732/2663-2209-2024-73-75-82

ЦІНОУТВОРЕННЯ НА РИНКУ НЕРУХОМОСТІ: АСПЕКТ НЕВИЗНАЧЕНОСТІ

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PRICING REAL ESTATE MARKET: THE UNCERTAINTY ASPECT

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Анотація. У статті розглядаються особливості ціноутворення на ринку нерухомості в Україні, якому притаманний високий рівень невизначеності. Метою статті є дослідження проблем та наслідків ціноутворення на ринку нерухомості в умовах невизначеності в Україні. Поставлена в статті мета була досягнута за допомогою методів індукції, дедукції, узагальнення та методу системного аналізу. У статті досліджено фактори, що впливають на ціноутворення на квартири, такі як взаємодія між попитом та пропозицією, психологічні фактори, процентні ставки, іпотечні ставки та зовнішні події, такі як пандемія та війна. Наприклад, пандемія Covid-19 призвела до зниження попиту на житло, особливо в містах, де рівень захворюваності був найвищим. Війни та конфлікти негативно впливають на галузь нерухомості, спричиняючи руйнування, загибель людей, економічну та політичну нестабільність. Невизначеність і ризиковані обставини часто змушують людей відкладати операції з нерухомістю. Українські девелопери відчувають значні труднощі, пов'язані з війною, які проявляються в тому, що покупці затримують погашення кредитів, припиняють регулярні платежі та не поспішають інвестувати в нові будівельні проекти. Інвестори стають обережними та уникають інвестицій в нерухомість, яка може втратити в ціні після завершення воєнного конфлікту. Як наслідок, ціни на квартири знижуються, а продаж їх стає складнішим. Автори припускають, що ефективними ціновими стратегіями для продавців нерухомості є встановлення конкурентоспроможної ціни або надання додаткових гарантій. У статті також наводяться приклади того, як на ринок нерухомості вплинула пандемія коронавірусу та війна в Україні. Автори підкреслюють важливість розуміння та управління невизначеністю в ціноутворенні нерухомості для прийняття обґрунтованих рішень. Стаття містить дані та статистичну інформацію з різних джерел таких, як українські портали нерухомості та Державна служба статистики України.

Ключові слова: ціноутворення, ринок нерухомості, невизначеність, маркетингова цінова стратегія.

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Abstract. The article examines the pricing peculiarities of the real estate market in Ukraine, which is subject to high uncertainty. The purpose of the article is to investigate the issues and consequences of pricing in the real estate market when faced with uncertainty in Ukraine. The purpose set in the article was achieved using methods of induction, deduction, generalization, and system analysis method. The article explores the factors that influence the pricing of real estate for apartments, such as interplay between supply and demand, psychological factors, interest rates, mortgage rates and external events like pandemic and war. For example, the Covid-19 pandemic has led to a decline in the demand for housing, particularly in the cities where the rate of illness was highest. War and conflicts have an adverse effect on the real estate industry, causing destruction, loss of life, and economic and political instability. Uncertainty and risky circumstances often cause people to delay their real estate transactions. Ukrainian property developers are experiencing hard difficulties dealing with war that manifest themselves in resulting buyers delaying loan repayments, stopping regular payments, and hesitating to invest in new construction projects. Investors become cautious and avoid real estate investments that may decrease in value after the war conflict ends. As a result, apartment prices decrease, and it becomes more difficult to sell them. The authors suggest that effective pricing strategies for real estate sellers include setting a

competitive price or offering additional guarantees. The article also provides examples of how the real estate market has been affected by the coronavirus pandemic and the war in Ukraine. The authors emphasize the importance of understanding and managing uncertainty in real estate pricing to make sound decisions aligned with goals and values. The article includes data and statistics from various sources, such as Ukrainian real estate portals and the State Statistics Service of Ukraine.

Keywords: pricing, real estate market, uncertainty, marketing pricing strategy.

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Problem statement. Real estate as a commodity has specific characteristics that determine its value to the consumer, such as the area, type, number of floors and age of the building, the area of the city, the availability of developed transportation and social infrastructure, green parks around the house, etc. The characteristics of these real estate attributes shape the consumer utility and determine its economic value, which can be measured through the price.

The real estate market contributes significantly to GDP. Additionally, affordable real estate prices enhance citizens' quality of life and improve firms' production capabilities. However, fluctuations in real estate prices increase uncertainty and may delay people's and companies' decisions to purchase property.

Purpose of the article. The aim of the study is to analyze the challenges and implications of pricing the real estate market in uncertain conditions in Ukraine.

Literature review. Jurado et al. [1] systemized that at a general level, uncertainty is typically defined as the conditional volatility of a disturbance that is unforecastable from the perspective of economic agents. Jurado et al. [1] believed that increases in uncertainty can depress hiring, investment, or consumption if agents are subject to fixed costs or partial irreversibility (a real options effect), if agents are risk averse (a precautionary savings effect), or if financial constraints tighten in response to higher uncertainty (a financial frictions effect).

Han [2] explained that the increase in house price uncertainty has two opposite impacts on the housing market: 1) financial risks reduce the demand for houses and increase people's desire to sell houses; 2) when people face high house price uncertainty, their demand for housing increases to hedge against future housing costs. Economic conditions directly affect the magnitude of these two effects.

Baek et al. [3] showed that real estate uncertainty shocks negatively affect the housing market, reducing housing prices, housing starts, and employment in the construction sector. Also, Baek et al. [3] found out that financial conditions dampen the dynamic responses of macroeconomic and housing markets to real estate uncertainty.

The uncertainty of real estate pricing is influenced not only by economic factors, but also by political situations and the level of corruption in local authorities, as demonstrated in the study by Ang et al. [4] for the real estate market in China. Regarding real estate market pricing, the authors [4] discovered a pattern of uncertainty associated with corruption in China: if a local government has more officials involved in graft probes, these legal investigations as uncertainty shocks could hinder local economic development and thus increase the financing cost of real estate construction; however, local governments with more officials involved in graft probes are typically those with good economic development and aggressive political leaders, hence they should have lower financing costs since corruption greases the wheels of economic growth.

Kaplanski et al. [5] found a significant and persistent seasonality in real estate prices in the U.S., the U.K. and Australia. The authors [5] justified that the real and nominal rates of return on real estate, as well as the rates of return over the risk-free interest rate, are very low, and even negative, during the fall and early winter and they are positive and relatively high during the spring and early summer. In their study, Kaplanski et al. [5] discovered a latitude effect: the larger the latitude, the more profound the observed seasonality in real estate prices.

Zhao et al. [6] emphasized that fluctuations in the real estate market affect the entire economic system and this requires the government to formulate relevant housing

policies to stabilize the operation of the real estate market.

Although we acknowledge the scientific achievements of scholars who have studied pricing problems in the real estate market, there is still insufficient research on pricing in relation to uncertainty.

The results of the research. The volatility can stem from different factors including the coronavirus pandemic, wars, falling unemployment rates, GDP growth, and so on. The determination of apartment prices has become a challenging task for both buyers and sellers.

Housing is regarded as largest fixed asset of a family that can affect the family's savings and consumption decisions to a large extent [7].

One of the primary drivers of real estate prices is the interplay between supply and demand. In times of uncertainty, potential buyers may be deterred due to financial instability and uncertainty, leading to a decrease in demand. This, in turn, can result in lower prices for apartments as sellers adjust their bids to attract buyers.

However, in times of high level of uncertainty, investors may consider real estate a safe haven due to rising GDP and falling unemployment. This can lead to increased demand for apartments and buildings and higher prices on the secondary real estate market.

The pricing of real estate in such conditions is influenced by psychological factors. Potential buyers who experience fear and anxiety due to uncertainty can affect the decision-making process of purchasing real estate, prompting sellers to reduce prices to draw in buyers and assuage their apprehensions.

Another factor that must be considered as an indication of uncertainty is the low interest rates. Investors in particular benefit from low interest rates, which improve the cost-effectiveness of financing both commercial and residential property. Investors often sell equities and buy bonds during periods when the stock market is perceived to be volatile or risky, such as now. The increased demand for bonds then drives up the price of

these bonds. Essentially, significant stock market sell-offs generate substantial cash to be invested. Rising bond prices lead to a reduction in the interest payments, which often moves in line with the price. As bond yields decrease, mortgage rates also decrease. Those who are involved in property flipping can take advantage of the lower interest rates, which will improve the affordability of homes.

The coronavirus pandemic's impact on secondary market apartment prices had several features. Mainly, it reduced demand for apartments, particularly in cities with high rates of illness.

However, based on DIM.RIA statistics, the Ukrainian real estate market for residential properties exhibited a behavioral pattern similar to that of many advanced economies. During the initial year of quarantine, the real estate market experienced considerable overheating. There was a surge of enthusiasm in all kinds of real estate, particularly in single-room apartments and private houses. From 2021 to 2022, the growth of interest in these types of properties was 2.41% and 1.46% respectively [8]. Coupled with the unstable economic environment, the average real estate prices increased by 7.96% [8].

Furthermore, war conflicts negatively impact the housing industry by causing destruction, loss of human life, and instability in the economy and political sphere. Due to uncertain and risky conditions, many people intentionally delay their real estate transactions.

It's worth noting that when evaluating real estate prices, it's vital to take into account developers' positions and decision-making factors. Since the Ukrainian real estate market is heterogeneous, we considered the primary real estate and secondary housing markets to analyze pricing nature more closely.

Amid economic uncertainty and in the aftermath of a full-scale invasion, Ukrainian property developers have seen customers delaying loan repayments, stopping regular payments and being reluctant to invest in new construction projects. As per INSPI Development's information, at the close of 2022, around 66% of development companies were facing bankruptcy [9].

As of October 2023, Ukrainian real estate information resource DIM.RIA reports that 75% of developer sales departments are operating. [10]. In comparison, as of April 2022, only 1% of sales and advisory services had resumed operations in the Greater Kyiv area [11]. However, by October 2023, this figure had increased significantly to 71.1% in the Greater Kyiv area.

The real estate market is affected significantly by war conflicts, and one of the primary outcomes is a demand reduction. People become cautious and avoid real estate investments that may decrease in value after the war conflict ends. Consequently, this lowers apartment prices and makes it more difficult to sell them.

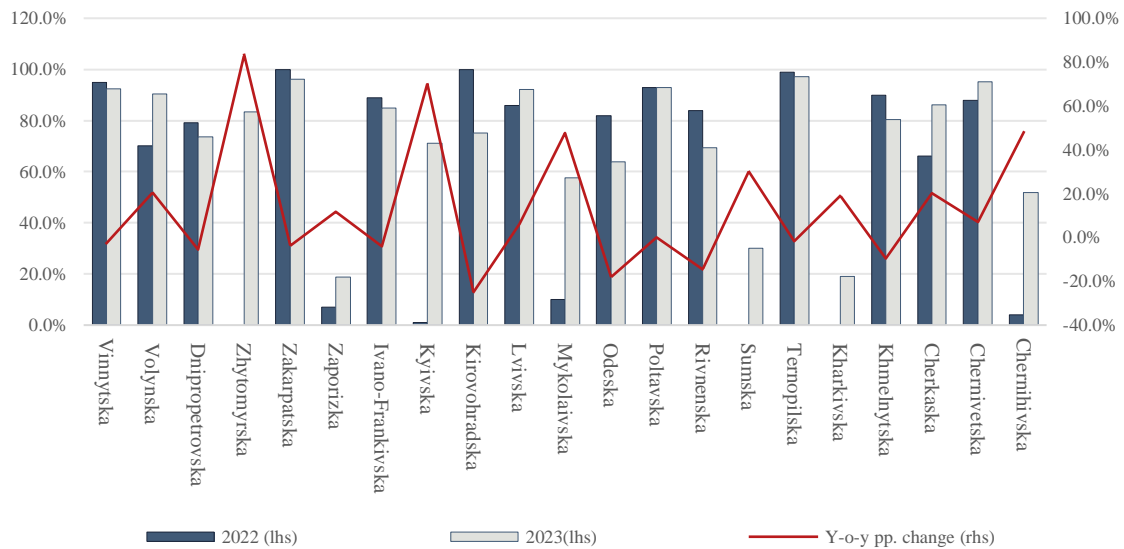


Figure 1. Share of operating sales departments by regions in 2022-2023

Source: created by authors based on the information [10, 11]

The conflict has encouraged people to be more selective in their purchases, especially for major investments such as real estate.

During a time of high uncertainty and security risks, we reference the 2022 survey conducted by DIM.RIA to illustrate the behavior of Ukrainians. As of May 2022, the majority of those surveyed in Ukraine,

regardless of their residence, expected to spend \$30,000 to \$50,000 when purchasing a property [12]. In a following study from 2023, 39% of participants indicated their willingness to spend \$10,000 to \$25,000, while 34% expressed their readiness to spend from \$30,000 to \$50,000 [11].

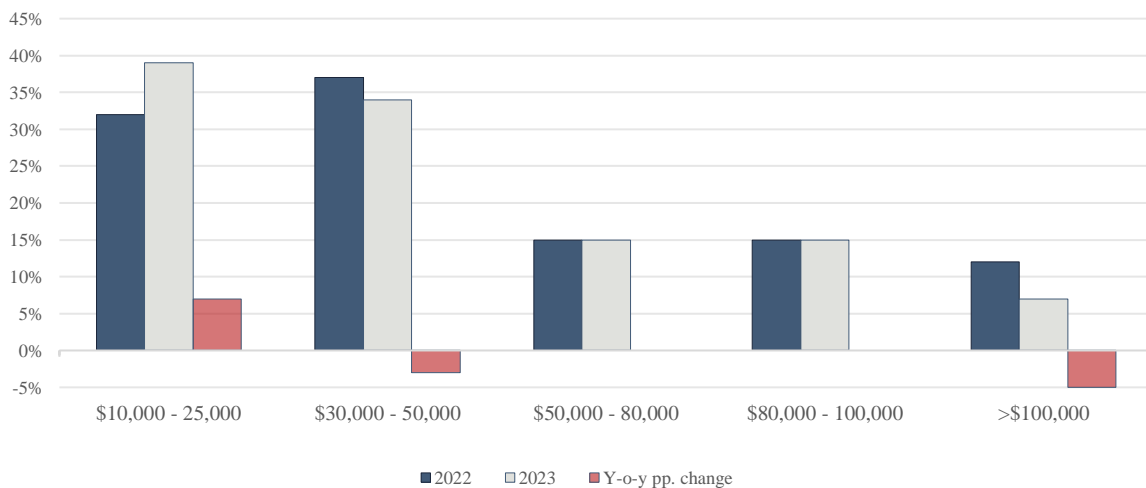


Figure 2. Ukrainians budget for buying a residential property

Source: created by authors based on the information [12, 13]

According to DIM.RIA data, in October 2023 the primary estate market recorded the highest average price per square meter in Kyiv and amounts up to 57,460 UAH, including all types of apartments classified by number of rooms [10].

At the analysis of the cost per square meter over the year, the Ivano-Frankivsk region had the most significant price increase of 48% [10].

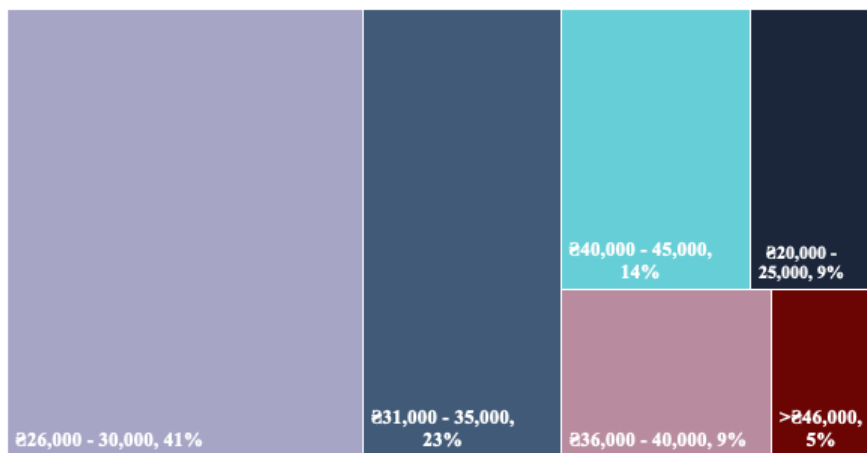


Figure 3. Average cost per square meter in a new building in Ukraine as of October 2023

Source: created by authors based on the information [10]

As a result of the survey, housing prices on the secondary market were on the rise throughout 2023 year in all regions of Ukraine. The Chernihiv region recorded the largest price increase of 42% for one-room apartments. The highest average cost of one-room apartment is \$87,374 in Kyiv [10].

Another factor affecting the housing market in an armed conflict is the risk of destruction and property damage. People fear that their apartments may be destroyed by fighting or become the target of military operations. Housing prices and demand are also affected by this risk.

These fears are also reflected in the real market: according to statistics from LUN web resource, a Ukrainian real estate site, as of

September 2023, the number of new buildings on sale decreased by 18% year-over-year in the central regions and by 38% year-over-year in Eastern Ukraine [14]. Due to safety risks, the reverse situation was typical for Western Ukraine - growth by 3% [14]. According to the information provided by State Statistics Service of Ukraine, as for the first half of 2022, the total area of residential buildings, putting into service, contracted for 2,48 million sqm or -50% year-over-year. By the first half of 2023, the situation slightly recovered by 48% year-over-year, but the pre-war level of property construction has not been reached yet (4,8 million sqm in the first half of 2021 compared to 3,6 million sqm in the first half of 2023) [15].

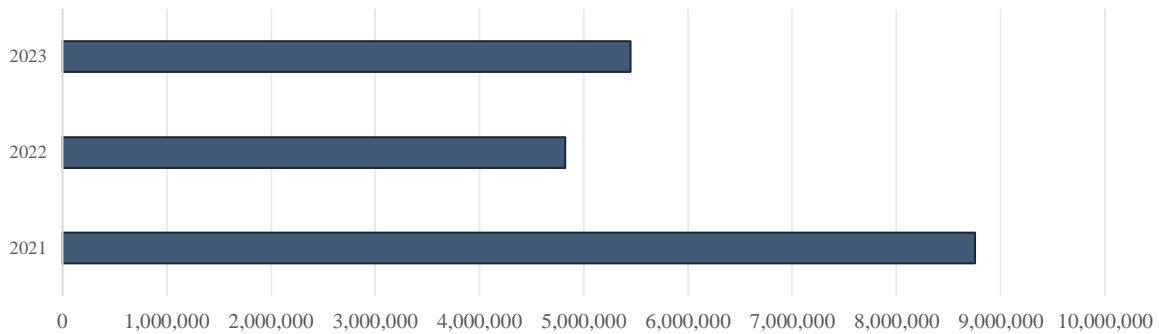


Figure 4. The total area of residential buildings, putting into service in 2021-2023.

Source: created by authors based on the information [15]

The uncertainty of armed conflict in the housing market is caused by several factors. One is uncertainty about the duration and outcome of the conflict. People do not know when the conflict will end and how it will affect the real estate market. This uncertainty creates risk and affects decisions to buy and sell apartments.

Despite the challenging financial and economic climate, Ukrainians are demonstrating a keen interest in acquiring property. As indicated by analytic data furnished by the Ukrainian real estate site LUN, people's desire to purchase property rose notably by the 7th week following the onset of the war, though not in all regions of Ukraine. Since the start of the war, the Zakarpattia region has observed a significant growth in views, with a 72% increase in interest compared to the last week of January 2021. In the 7th week of the conflict, the Kirovohrad region has shown the highest interest in primary real estate, with the number of views increasing by 103% compared to the 6th week. The Khmelnytsky region recorded a 29% increase in views, while the Ivano-Frankivsk region witnessed a 25% growth. During a country's military conflict, apartment prices can change rapidly and unpredictably.

Realtors cannot always provide up-to-date data on prices and transactions. This makes it difficult to determine the real value of housing and creates problems when setting prices.

In the first few months of the war, there were no transactions in the residential property sector, largely because market participants

were unable to access the state property registry. Beginning in May 2022, the Registries have gradually started to reopen, indicating a slow but steady increasing demand.

In accordance with the details provided by the Ministry of Justice of Ukraine, there was a 69% reduction in the volume of residential property purchase and sale agreements in 2022 compared to the preceding year, amounting to around 99 thousand agreements (information for the year 2023 is not present).

In the context of military uncertainties, the increase in real estate costs can be attributed to higher costs for construction materials (due to the destruction of some factories) and disruptions in the raw materials supply chain, as well as the depreciation of the hryvnia and the need for additional expenditure to maintain operations during power cuts. As per data provided by Ukrainian development firms, there is a deficit of skilled workforce on construction sites in Ukraine, with shortages extending to 50% for both technical and labour positions. The scarcity of personnel is associated with a positive trajectory in the increase of workers' wages (15-25% of increase). Nevertheless, limited demand is preventing developers from substantially increasing residential selling prices.

Another factor is the instability of the economy during armed conflict. Conflicts often lead to job cuts, a worsening economic situation, and rising inflation. All this affects people's purchasing power and their willingness to invest in real estate.

In addition, political instability is also a contributing factor to the uncertainty of armed conflict. Uncertainty about future decisions and political changes affects the housing market and creates risk for potential buyers and sellers.

In the face of uncertainty, it is important to develop effective pricing strategies for real estate sellers.

One such strategy is to set a competitive price. Sellers may try to attract buyers by offering their properties at a lower price than their competitors.

Another marketing pricing strategy is to set a stable price and offer additional guarantees. Sellers can offer additional terms and guarantees to convince buyers of the stability of the price and quality of the property.

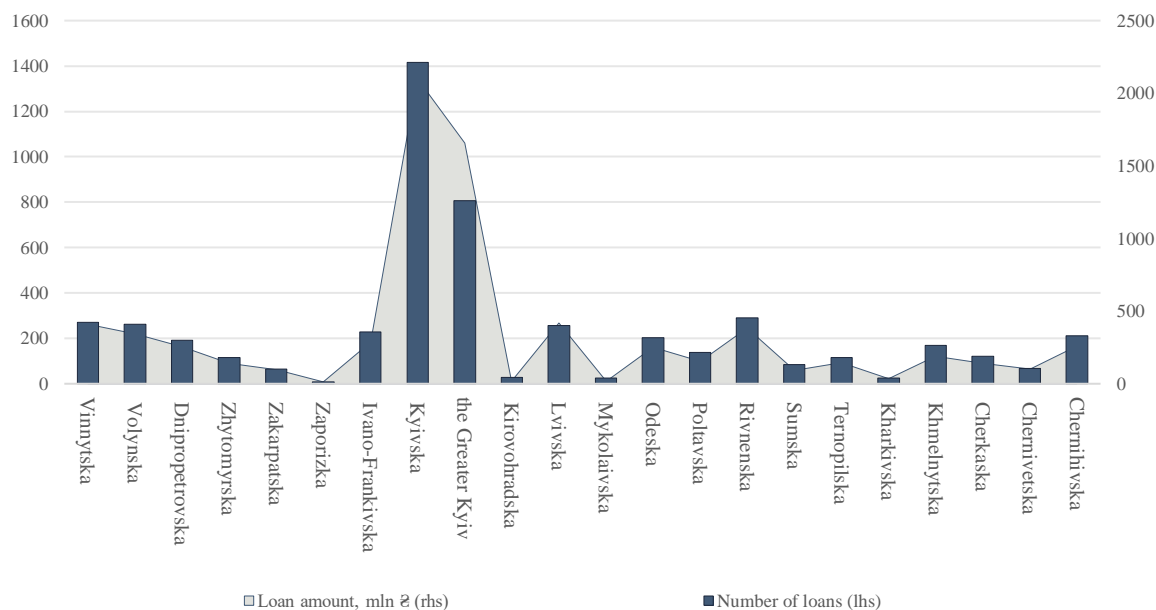


Figure 5. Cumulative distribution of "EOsela" social loans by regions (October 2022 through November 2023)

Source: Created by authors based on the information [16]

Due to widespread destruction of residential buildings and in an effort to stabilize the real estate market, the state introduced the "EOsela" social program in October 2022 [16]. The program offers a mortgage with an annual interest rate of 2% for up to 20 years to specific categories of citizens, including military personnel, medical professionals, teachers, educational and scientific staff, and those who have been temporarily displaced [16]. As of the end of November 2023, UkrInfZhytlo issued 5,101 loans worth UAH 7,504.4 million [16]. Of the buyers in this category, 69.1% made their purchase in the secondary real estate market, 29.7% directly from the developer, and only 1.2% preferred to buy on the primary market

[16].

The buyer's needs and interests are important to have in mind. To attract customers, sellers can offer additional services and benefits, such as free repairs or allowing customers to pay in installments.

Conclusions. In general, pricing real estate in times of uncertainty is a multifaceted process that is influenced by supply and demand, psychological factors, and external events such as pandemics, wars, employment decline, and GDP growth. Therefore, when making a decision to buy or sell real estate during times of uncertainty, it is important to consider all relevant factors and take an informed approach.

References:

1. Jurado, K., Ludvigson, S. C., & Ng, S. (2015). Measuring uncertainty. *American Economic Review*, 105(3), 1177-1216.
2. Han, L. (2010). The effects of price risk on housing demand: empirical evidence from US markets. *The Review of Financial Studies*, 23, 3889-3928.
3. Baek, I., Liu, J., & Noh, S. (2024). Real estate uncertainty and financial conditions over the business cycle. *International Review of Economics & Finance*, 89, 656-675.
4. Ang, A., Bai, J., & Zhou, H. (2018). The great wall of debt: Real estate, political risk, and Chinese local government financing cost. *Georgetown McDonough School of Business Research Paper*, (2603022), 15-02.
5. Kaplanski, G., & Levy, H. (2012). Real estate prices: An international study of seasonality's sentiment effect. *Journal of Empirical Finance*, 19(1), 123-146.
6. Zhao, C., & Liu, F. (2023). Impact of housing policies on the real estate market-Systematic literature review. *Heliyon*.
<https://doi.org/10.1016/j.heliyon.2023.e20704>
7. Fan, Y., & Yavas, A. (2020). How does mortgage debt affect household consumption? Micro evidence from China. *Real Estate Economics*, 48(1), 43-88. <https://doi.org/10.1111/1540-6229.12244>
8. DIM.RIA (2021) How the real estate market has changed over the year of quarantine [Electronic resource]. Retrieved from <https://dom.ria.com/uk/news/kak-izmenilsya-rynok-nedvizhimosti-za-god-karantina-infografika-253730.html>.
9. Interfax (2022) Ukrainian development companies are on the verge of bankruptcy [Electronic resource]. Retrieved from <https://interfax.com.ua/news/economic/876653.html>
10. DIM.RIA (2023) Real estate market in October: what prices soared for, in which regions it is now easier to find housing for rent and other changes for the month [Electronic resource]. Retrieved from <https://dom.ria.com/uk/news/rinok-nerukhomosti-uzhovtni-na-scho-zletili-czini-v-yakikh-regionak-258099.html>
11. DIM.RIA (2022) Analysis of changes in the primary real estate market during martial law [Electronic resource]. Retrieved from <https://dom.ria.com/uk/news/analitika-izmeneniya-rynka-pervichnoj-nedvizhimosti-vo-vremya-voennogo-256028.html>
12. DIM.RIA (2022) What are the plans of Ukrainians for housing after the victory? [Electronic resource]. Retrieved from <https://dom.ria.com/uk/news/yaki-plani-ukraincziv-schodo-zhitla-pislya-peremogi-256147.html>
13. DIM.RIA (2023) Ukrainians' plans for real estate: results of the audience survey [Electronic resource]. Retrieved from <https://dom.ria.com/uk/news/plani-ukraincziv-schodo-nerukhomosti-rezultati-opituvannya-auditorii-257568.html>
14. LUN.UA (2023) Real estate market statistics [Electronic resource]. Retrieved from <https://misto.lun.ua/stat/kyiv>
15. State Statistics Service of Ukraine (2023) The total area of residential buildings, putting into service in 2021-2023 [Electronic resource]. Retrieved from <https://ukrstat.gov.ua/operativ/operativ2023/bud/>
16. Statistics on the EOselya program (2023) [Electronic resource]. Retrieved from <https://ukrfinzhytlo.in.ua/analytyka-mb/#1684920904343-23c4484a-9888>