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THE IMPACT OF THE WAR ON THE REAL ESTATE MARKET

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Abstract

The impact of war on the real estate market is a complex and multifaceted phenomenon that can have severe consequences for this sector of the economy. In modern society, the real estate market is one of the critical components of the country's economic development.

Population decline, socio-economic transformations and technological innovations create new challenges and opportunities for the real estate market. In 2023, the development of the Ukrainian real estate market is of particular interest. Changes in the political, economic and socio-cultural environment of Ukraine are creating new conditions for business. There are also new trends in the legislative regulation and taxation of real estate that affect the activities of market participants.

Per the topic's relevance, a detailed analysis and assessment of the Ukrainian real estate market is carried out. The main problems that need to be overcome for further market development are outlined, and effective methods of dealing with the identified problems are proposed concerning the forecasts of the Ukrainian real estate market after the war.

Keywords

real estate market, Ukrainian economy, market analysis, military conflict, Ukrainian real estate.

Problem statement

Unfortunately, the real estate market today is in a rather complicated state, and the population is facing a sharp rise in prices for finished buildings. It is difficult to make any predictions, as no one knows when the hostilities are expected to end, what consequences Ukraine will suffer, and what condition the already built facilities in cities and other settlements will be in. Ukraine's martial law has an impact not only on national markets but also on foreign ones.

Relevance of the topic

As a result of active hostilities, 74.1 million square meters of housing were destroyed or damaged as of September 2022, more than 7% of the total available housing stock. Studying the primary and secondary real estate markets allows us to identify trends and dynamics of changes in real estate values in Ukraine and globally. Therefore, constant analysis and monitoring of the real estate market is crucial to determine the further development of the market. In addition, the war makes its adjustments and changes the real estate market in the country.

Analysis of the latest research and publications

The current conditions of the real estate market are extremely difficult for research. One of the main problems is the complexity of long-term forecasts. Today, more than ever, it is crucial to analyze the peculiarities of the

national real estate market development, which is the subject of many works, including those by E. Lianze, V. Sharaev, I. Ivanov, O. Drapikovsky, V. Lirutseva and others. However, more attention should be paid to the peculiarities of market functioning in wartime with prospects for further recovery.

The purpose and objectives of the article

are to analyze the functioning of the market under martial law with a forecast for the postwar period, taking into account the experience of other countries.

Summary of the main research material and results

As an integral part of the market space, real estate markets have their regularities: when the discount rate, securities yields, inflation in the national currency and the strengthening of the national currency against other currencies decrease, capital inflows to the real estate market are stimulated, and real estate prices increase (Rubel, Samotoyenkova, 2020, p. 25).

Factors affecting the development of the real estate market are categorized. The most influential at the moment are external factors. Namely, military actions that affect not only the real estate market in Ukraine but also the entire global economy. External factors affecting the real estate market can be divided into three groups (figure 1) (Rubel, Samotoyenkova, 2020, p. 25).

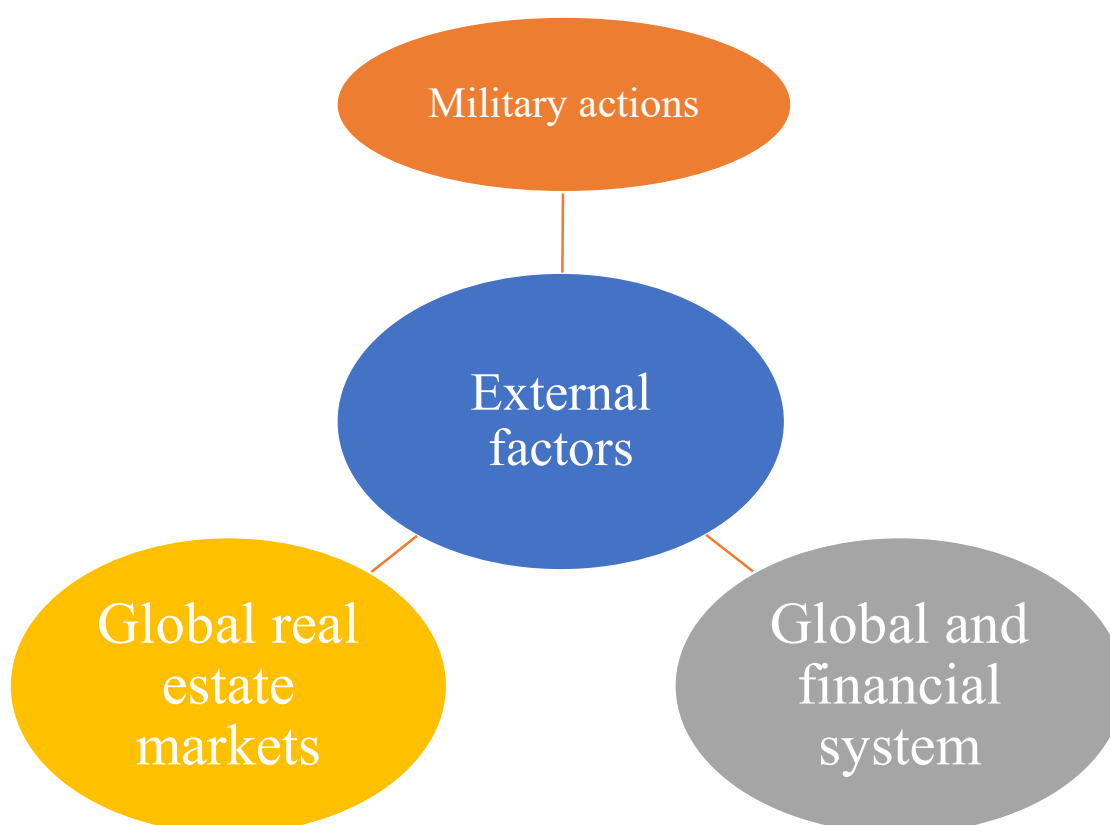


Figure 1. External factors affecting the real estate market

Source: compiled by the author.

If we talk about internal factors, we can distinguish the following (table 1).

These groups of factors will have a significant impact on the future development of the real estate market. To adjust the value of real estate in a particular region or area, additional factors affecting local real estate values should be added.

Table 1: External factors influencing the real estate market

Factor	Characteristics
Market	Supply and demand, market risk, market flexibility, and the interaction between the primary and secondary real estate markets.

Political	These include the socio-economic orientation of the ruling party's policy, the frequency of election campaigns, government actions in the economy, and the actions of local governments in relation to various segments of the real estate and land market.
Economic	Level of development, GDP growth, monetary policy, mortgage lending, inflation, business activity, employment, and purchasing power.
Social	The level of socio-economic structure of the population, professional level of the population, consumer demand of the population, income level of different social groups, and generally accepted housing conditions.
Demographic	The level of socio-economic structure of the population, professional level of the population, consumer demand of the population, income level of different social groups, and generally accepted housing conditions.
Geographical and natural	Population size, population growth, fertility, mortality, population density, migration processes, and urbanization.
Scientific and technical	Technology and organization of construction, housing cost parameters, safety parameters.

Source: compiled by the author on the basis of data (Rubel, Samotoyenkova, 2020, p. 26).

Factors affecting the value of local real estate include:

- Location;
- Number of storeys;
- Materials of walls and floors;
- Structural features of the building and floor plan;
- The general condition of entrances, common corridors and adjacent areas;
- Availability of autonomous heating and total utility costs;
- Availability of security and video surveillance;
- Availability of underground or outdoor parking;
- Availability of bomb shelters (Rubel, Samotoyenkova, 2020, p. 27).

The restructuring of the Ukrainian economy will largely depend on investment flows. Ukraine has already identified regions and cities in which foreign investors and even the country as a whole will invest significant material resources. Electronic maps and city development plans have already been prepared using a geographic information system. Unfortunately, a lot depends on the volume and intensity of investment. This directly affects the development of a particular territory—namely, the development and active growth of the real estate market.

We also identified factors that affect the primary real estate market. It is important to summarize the prospects for developing the primary real estate market and the interaction of the primary real estate market with the secondary market. Let us consider the factors affecting the primary real estate market:

- Domestic inflation rate;
- Exchange rate of the franc against foreign currencies;
- Gross national product growth rate;
- The growth rate of the gross national product;
- The level of wages received by the population;
- Interest rates on bank mortgage loans;
- Energy prices;
- Prices for construction materials;
- Prices for construction and installation works;
- Prices for fuels and lubricants;
- Cost of land for construction;
- Additional costs for land allocation and design;
- Costs of connecting the building to networks (water, sewerage, heating, electricity, gas) (Rubel, Samotoyenkova, 2020, p. 27).

What is happening now with the real estate market in Ukraine, and what consequences can we expect after the war? We propose to make a detailed analysis in stages: global real estate market trends (to find out the reasons for the problems that will arise in the further analysis of the real estate market in Ukraine); Ukraine until February 24, 2022; Ukraine during martial law and expected forecasts for the post-war period.

To begin with, let us look at global real estate trends as they identify possible reasons why Ukraine and the global real estate market could have faced problems despite the war.

The needs and preferences of the public are changing due to technological development and economic

turmoil, which affects the implementation of real estate projects (Karapetian, Kvasovskiy, 2017, p. 126).

Today, priority is given to integrated regional development rather than pointed development. The solution is to organize the environment based on "everything you need at hand": diverse buildings, necessary infrastructure, a developed public transport network and recreational areas. European cities often choose this solution to create comfortable living spaces.

Such facilities appear regularly around the world. They combine three or more functions, for example, a business centre with apartments and retail space. Multifunctional projects allow developers to spread potential risks.

In order to improve the cost-effectiveness and quality of project maintenance, as well as reduce maintenance costs, developers are introducing and using new technologies and real estate management techniques. The introduction of such tools increases the market value and competitiveness of real estate, especially office real estate, and helps to attract tenants (Karapetian, Kvasovskiy, 2017, p. 128).

For example, innovative technologies can reduce the consumption of resources (energy, water) in buildings and optimize the amount of waste, especially by monitoring the fullness of garbage cans and adjusting waste collection schedules accordingly. They also have a positive impact on the environment by reducing greenhouse gas emissions. This topic is particularly relevant in connection with the requirements implemented by European countries to achieve sustainable development goals.

The movement in this direction will continue, and soon, innovative technologies will become mandatory for use at all stages of the building life cycle, from design to operation and demolition. (Karapetian, Kvasovskiy, 2017, p. 132).

These trends are expected, including in Ukraine. Today, it is not easy to create competitive facilities without considering them. When the war is over and competition in the domestic market intensifies, the number of projects focusing on quality from concept to implementation will naturally increase.

Before the full-scale invasion, the demand for land for residential development was high; since 2017, the market has gradually moved away from spot developments. Companies are focusing on constructing residential complexes (live-work-play estates), which own 10% (or more) of non-residential land and contain the essential elements necessary for living. Thus, in recent years, the capital market has seen a significant increase in the share of residential complexes with business and social infrastructure (Kobzan, Pomortseva, 2023).

When the conflict escalated, there was a massive movement of people from the eastern and southern regions of Ukraine to the west. A fascinating question is whether the population will return. We can accurately predict that people will return to the big cities that were not destroyed. Businesses will rebuild the cities where they operate, and higher education institutions will start operating normally. State-owned and municipal enterprises will also resume their daily activities.

Surveys can be used to identify potential real estate buyers. It is worth noting important information about the image of potential buyers who are actively buying real estate on the market:

1. Lonely young people seeking independence.
2. Young families.
3. Pensioners saving money for real estate.
4. Creative people for use as a home and office.
5. Business people.
6. Interested persons.
7. Investors who want additional income from renting (Kobzan, Pomortseva, 2023).

In terms of commercial real estate, especially the office sector, there has been an active process of project development over the past few years.

It is not surprising that the total area of commissioned housing has decreased significantly during the large-scale military operations. Thus, in 2022, only 7.1 million square meters (18,300 private houses and 74,300 apartments) were commissioned, which is 38% less than in 2021. Investments in residential construction have also declined significantly (Kobzan, Pomortseva, 2023).

As a result, the volume of new construction in almost all regions has significantly decreased. Contractors mostly try to complete work started before the occupation and do not start new projects.

The war has put commercial and residential real estate construction on hold (except in some western regions). However, even during active hostilities, buyers prefer quality projects with developed infrastructure and housing.

For example, the invasion of Ukraine has increased the demand for business centres where landlords can create a comfortable working environment, provide an adequate level of service, and meet tenants' electricity and security needs without power outages. Currently, the office sector is risky for new development projects due to

the unstable economic situation. However, once the war is over and business starts to grow, demand for office space is expected to increase.

Another factor that negatively affected the development of construction was a significant increase in the exchange rate, as well as high inflation, which reduced the purchasing power of the population while prices for construction projects increased.

In October-December 2022, construction companies faced new challenges. In order not to disrupt construction work, they were forced to either adhere to power outage programs or buy powerful generators. Some developers found it more profitable to suspend construction, which also contributed to the decline in (Fisunenکو, 2022, p. 111).

However, large-scale rocket and artillery attacks remain the most severe threat to the residential real estate market in many regions. As a result of active hostilities, 74.1 million square meters of housing were destroyed or damaged as of 2022/9, accounting for more than 7% of the existing housing stock (Minfin, 2023).

The scale of the destruction is enormous. Available data alone indicate that it exceeds all new housing built in the last seven years. Given the intense rocket attacks in the last months of this year and the impossibility of calculating the damage in the occupied territories, the scale of housing destruction is likely to be even greater.

The war has made people cautious about making large purchases, especially housing. In the first months of the war, market participants did not have access to the State Register of Property Rights, which also hindered transactions in the housing sector; since May 2022, the register has gradually opened, and demand has begun to recover (Minfin, 2023).

However, given the uncertainty of the outlook physical and economic risks, many potential buyers and investors have taken a wait-and-see attitude, regardless of the region.

Now, what is happening to the real estate market today, in 2023?

First, it is a reformatting of the entire market. As a result, many experts believe that the primary market no longer determines housing prices but the secondary market, as before the significant invasions. Moreover, the value is determined by rents for existing properties, as real estate is the only instrument where people can invest and get at least some return.

Today, those who agree to invest in real estate are willing to invest with a return on capital (fixed value) of 5% per annum, which means a payback period of 20 years. In other words, after 20 years, the investment will be fully paid off, and the investor will receive an income equal to his or her initial investment and still own the apartment. It determines the present value of the property.

For example, if the rent for an apartment is UAH 10,000 per month, the value is $10000 \times 12 : 5\% = 24000$ 000 UAH or approximately 65 000 USD (at some exchange rate on some date) (Minfin, 2023).

Investors accept such a low rate of return on capital because they still hope that the war will end, the market will pick up, and they will be able to earn more. They may resell their apartments or raise the rent.

Of course, the specific rental price depends on the property's location, whether it has been renovated, and the quality of the furniture, kitchenware, and plumbing. If the apartment is located in a residential complex with a good reputation among property owners and has been renovated, the rental price will be much higher.

The analysis shows that these rental prices are almost the same as in 2020, so the prices of apartments for sale have returned to almost the same level as before the occupation. Many real estate agents note this fact, and at first glance, it may seem strange. The prices of apartments were strongly influenced by the possibility of selling them to foreign investors, which is currently absent in Ukraine.

Unfortunately, the Ministry of Justice has not yet published data on the number of real estate transactions in 2023, only for 2022. However, the general trend is apparent (table 2).

Table 2: Number of transactions in the real estate market

Type of transaction/ year	Number of transactions, units.						Growth rate, 2022 to 2021, %.
	2017	2018	2019	2020	2021	2022	
Real estate (except for land plots)	437 082	371 327	481 013	463 286	540 850	182 809	-66,2
Alienation of non- agricultural land plots	211 479	218 441	224 795	275 976	374 312	172 300	-53,9
Alienation of agricultural land plots	0	0	0	0	84 336	74 645	-11,5

Source: compiled on the basis of data (Novakovska, Ishchenko, Skrypnyk, Stetsyuk, 2023, p. 133)

The results could have been better. Due to the war, the total number of transactions in 2022 alone was 66.2% lower than in 2021. In other words, buyer transactions in 2022 accounted for only a third of those in 2021.

This situation can be improved by transactions with land plots, primarily agricultural land. However, it is worth noting that the number of buyers of apartments and houses fell threefold. Indeed, the market has collapsed in quantity but has levelled off in value. Unfortunately, this trend is still ongoing, as is the war.

In August of this year, Ukraine expanded mortgage lending for various social groups to 7% (previously, according to the government program, military personnel, law enforcement officers, doctors, and teachers could get loans at 3%). Although the number of applications confirms the high demand, there is only reason to expect a significant improvement in the market once the war ends. In particular, according to the latest estimates, as of June 2023, just over 1,600 loans had been issued (Novakovska, Ishchenko, Skrypnyk, Stetsyuk, 2023, p. 138).

On the other hand, the situation in the country affects the availability of commercial real estate projects. It is necessary to liberalize financing in this area and create favourable conditions for companies working on commercial real estate projects. Otherwise, it won't be easy to open new facilities and create jobs, especially since legislative initiatives that allow for soft loans with a zero interest rate, unfortunately, do not apply to this type of activity.

Market conditions are the main factor affecting the intensity of real estate development. However, for the effective implementation of modern projects, it is essential to update industry standards, create a transparent legal system, and minimize corruption. We took data from the National Association of Realtors, and here is what we found out.

Experts from the National Association of Realtors (NAR) reviewed the 2021 U.S. International Residential Real Estate Transactions Report, published in early 2022, to identify investment changes in the overall U.S. real estate market due to the Russian Federation's large-scale invasion of Ukraine (Association of real estate specialists (realtors) of Ukraine, 2021).

Based on the recalculation results, the experts found that the decline in international real estate transactions had a minor direct impact on the US real estate market, as foreign buyers accounted for about 2% of existing real estate sales (Novakovska, Ishchenko, Skrypnyk, Stetsyuk, 2023, p. 135).

According to a report by experts, in 2022, the volume of real estate purchases by foreigners fell to its lowest level since 2011: 107,000 homes worth USD 54.4 billion were purchased by foreign buyers between April 2020 and March 2021, amounting to USD 1.96 trillion over the same period. This figure represents only 2.8% of the US\$1,960 billion (Novakovska, Ishchenko, Skrypnyk, Stetsyuk, 2023, p. 136).

According to Polish experts and analysts, the war in Ukraine has had a significant impact on the Polish economy and the functioning of the real estate market and, consequently, on the increase in investment flows. Logistical ties with Eastern markets have already been suspended, and the demand for labour to invest in real estate construction has increased significantly. It naturally increases employment opportunities for Polish citizens and gives a new impetus to socio-economic growth (Delo, 2023).

Thus, the relationship between military conflicts and the real estate market is quite complex. While wars hurt real estate prices, in some cases, they can also lead to increased demand. In addition, military conflicts have a significant impact on economic and social conditions, which can also affect the real estate market.

For example, the war in Syria has destroyed many buildings and infrastructure and claimed the lives of many residents. As a result, real estate prices in the country have fallen significantly (Delo, 2023).

However, in some cases, military conflicts lead to an increase in real estate prices. For example, after the war in Iraq, some areas previously controlled by insurgents became safe to live in, and new housing was built there. As a result, real estate prices in these areas rose.

In October 2022, the Ministry of Economy, in cooperation with the Ministry of Digital Transformation and Ukrfinzhytlo, launched the eOselya affordable housing financing program (Koba, 2022, p. 24).

The program offers mortgages at 3% per annum for military and law enforcement personnel, doctors, teachers and scientists. According to the Ministry of Economy of Ukraine, since the program's launch, 948 households have received preferential loans for the purchase of housing, totalling more than UAH 1.2 billion. However, the government needs help financing the available loans. The eHouse project has not yet justified itself, as only 0.5% of loans have been approved since October 2022 (out of more than 46,000 applications), and only a few dozen transactions have taken place in the primary market. Some improvements to the system (especially in terms of lending decision-making mechanisms and related financing) could significantly increase the number of real estate transactions, with at least 10% of them occurring in the primary market.

The programme also planned to expand the category of citizens eligible for mortgages at 7% per annum, but even those in important professions cannot get a loan due to lack of funds (Koba, 2022, p. 25).

Comparing all the stages analysed above, we can conclude that 2022 started with a strong momentum, and this trend could probably continue. Before the outbreak of war, the pace of orders for new housing remained at the level of 2021. In the first six weeks of the year, the total area of newly constructed housing reached almost a fifth of the future annual volume.

The decline in new supply occurred in almost all regions of Ukraine, with the exception of some areas. Construction declined the most in the east and south of the country, where housing commissioning fell by 70-90% year-on-year.

According to the materials of Hochschule Mittweida University Of Applied Sciences, it can be concluded that the starting point for managing real estate cycles is not the most accurate long-term forecast. This is because real estate cycles are very complex (Hochschule Mittweida, 2023).

It is difficult to predict the state of the property market after the war, but we can assume that the situation will be as follows. Once the State Register and the State Land Cadastre are fully restored, we may see housing prices fall in the east of the country and rise in the west as people leave the country. Due to the war, housing construction in Ukraine has partially stopped. Materials and work have risen sharply in price. There was no demand for primary housing. Ukrainians are not ready to invest in primary real estate at the moment. Prices quoted by buyers do not correspond to the real value. The number of purchase and sale transactions has dropped significantly since the start of the war.

If the war continues until 2024, the situation in the primary housing market will remain very difficult. In addition, the overall economic situation in Ukraine will deteriorate, and possible power cuts will result in a large number of development companies being unable to meet their obligations to creditors and entering bankruptcy proceedings. A large number of investors who have purchased housing by instalments or mortgages will not be able to repay their debts. The outlook for the Ukrainian property market today depends on developments related to the war. Demand on the property market is likely to shift significantly towards suburban properties and economic sectors. This trend will continue beyond 2023 (Koba, 2022, p. 27).

For a successful project, it is necessary to create a real estate portfolio that is as resilient as possible to the following cycles:

- cyclical valuations
- good timing;
- high degree of diversification;
- high investor reliability (Hochschule Mittweida, 2023).

So, if we talk about the real estate market after the war, we can expect a recovery in prices in the first place. This is due to the following factors (Table 3):

Table 3: Reasons for price recovery

Reason.	Contents
Psychological	We understand the war will be long, but we want to live for the present. We want to work normally, help the army, rest, raise our children and grandchildren, and not hope for an imaginary "reconstruction".
Buy cheap because of the war	Owners refused to lower prices and waited for prices to rise before renting out their homes. It led to a reduction in supply in the sales market.
Deferred demand	Buyers are postponing their purchases in anticipation of falling prices. However, prices for good properties (close to the metro, renovated and with quality amenities) are falling.
Loss of housing as a result of destruction in the frontline areas	It is not those who have lost their homes who buy them, but those who intend to rent them out to internally displaced persons who have money and can pay the rent.
The inability of ordinary citizens to invest in other instruments because there is simply no alternative for them	As many IDPs came to Kyiv to escape the rockets and find work, the demand for rental housing increased, and people started buying rental housing. Currently, IDPs are renting and are not ready to wait to complete new housing, and interest in new housing has dropped significantly.

Source: compiled by the author based on data from Zaslavska, 2023, p. 10.

As of the end of 2022, there are no clear trends in price dynamics in the housing market. On the one hand, construction costs are rising due to the destruction of some building materials factories, a complicated supply chain for raw materials, the devaluation of the hryvnia, and additional costs of operating during power outages. On the other hand, limited demand means that contractors cannot raise apartment prices significantly (Zaslavska, 2023, p. 10).

The situation on the secondary market is even more uncertain. This is due to the fact that owners prefer a wait-and-see attitude in order not to lose potential sales income in a falling market. However, where there is genuine interest, owners often make concessions to an already small number of buyers.

Conclusions

Based on the research conducted, it can be concluded that military conflicts and geopolitical instability have a significant impact on the property market. In such situations, property prices may fall, investment risks may increase, and the procedures for buying, selling and renting may become more complicated. However, despite the risks, investing in real estate under martial law may in some cases be profitable, as new opportunities may arise, such as the restoration of infrastructure and the reconstruction of destroyed buildings (Zaslavska, 2023, p. 12).

In order to reduce the risks of investing in real estate in such situations, it is advisable to pay attention to additional factors, such as the economic, security and political stability of the country, as well as the psychological state of people, their competence, experience and knowledge in the field of real estate and knowledge of the specifics of the real estate market in each region. Given that military conflicts can significantly change the real estate market, investors should carefully analyse the situation and thoroughly research the relevant information.

Therefore, in order to successfully invest in real estate under martial law, investors should not only be prepared to take significant risks, but also analyse the local real estate market in detail, identify risks and opportunities, and develop new investment opportunities by diversifying their investment portfolio.

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