



# INFORMATION BASE AND ANALYTICS OF THE REAL ESTATE MARKET OF UKRAINE

June 2024



*Bona consulta homini optima est!*  
*Good advice is the best!*

## INTRODUCTION

The absence of a reliable analytical database for real estate transactions, both residential and commercial and industrial, remains one of the biggest obstacles to obtaining reliable data on its actual value.

This significantly complicates the process of conducting valuation, requiring considerable effort from experts to search for market analogs and reduces the accuracy and reliability of the results of such work.

The identified problem is substantial for appraisers and their clients. It does not require detailed explanations, but requires concerted efforts for its gradual resolution.

The VERITEX® Group forms the information and analytical base of the Ukrainian real estate market using appropriate automated and settlement products and application software packages. This allows us to effectively use such a database, to obtain generalized results on a scheduled basis, to formulate patterns in the modern real estate market, and to forecast its priority directions for further development.

The creation of the primary electronic database involves monitoring and accumulating information flows from the existing real estate market and subsequent in-depth processing. This is made possible through the application of methods such as mathematical and statistical analysis, geospatial and cluster analyses, machine learning and modeling, including neural networks and a combination of these methods.

The use of modern database management methods (PostgreSQL), geographic information systems (QGIS), and script libraries (Python) allows us to conduct this initial analysis as efficiently as possible.

**The main principles on which the information-analytical database is built include:**

- *Maximum coverage of the existing primary information database of the real estate market in Ukraine.*
- *Application of precise mathematical, statistical and other most appropriate modern models and criteria for analyzing large information arrays at all stages of processing the primary database;*
- *Conducting a complete probability-statistical analysis of the primary information database for all categories of real estate, obtaining key parameters of their market status and development evolution.*

- *Continuous verification of interim and final results for compliance within the applied analytical model.*
- *Consistent comparison of the developed analytical apparatus and obtained results with the most recognized domestic and foreign works in this field.*

The implementation of these principles ensures high reliability and accuracy of the obtained results and the conclusions formulated on their basis.

All this is in line with the main goal of creating and providing all interested organizations and professionals with reliable analytics of the state, trends and forecasts of the real estate market with a detailed analysis of the impact of the main pricing factors.

## **INITIAL INFORMATION BASE AND ITS PRIMARY PROCESSING**

Obtaining the initial information base and its primary processing form the basis of the subsequent real estate market analysis and directly affect the results of the entire analysis. Therefore, considerable attention is paid to this initial and quite complex stage of work.

In terms of its structure, the initial information and analytical base of the residential real estate market consists of the following blocks:

**BLOCK OF APARTMENTS:** primary and secondary market;

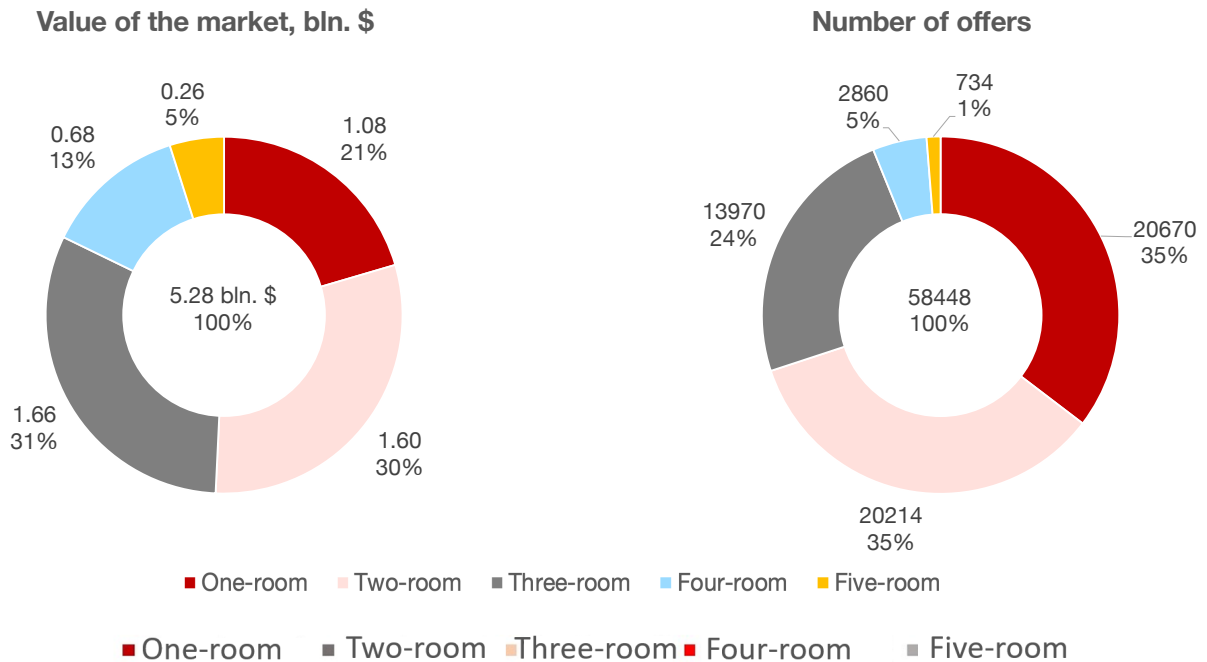
**BLOCK OF LAND PLOTS:** for construction, agricultural, industrial;

**BLOCK OF HOUSEHOLDS:** separate from land plots and joint with them

The processing of primary data sets for all three of these blocks of real estate is conducted on a unified methodological basis using the mentioned analytical tools. This ensures the unification of the methodology itself and the possibility of conducting a comparative analysis of the results for individual real estate groups.

# 1. INFORMATION AND ANALYTICAL BLOCK OF THE APARTMENT MARKET

As of the end of June 2024, the database, in particular, the volume of the secondary apartment market includes about 884,316 unique offers from all over Ukraine. The majority of this market structure (>90%) is made up of 1-2-3-room apartments. The share of these apartments in terms of value is also major.



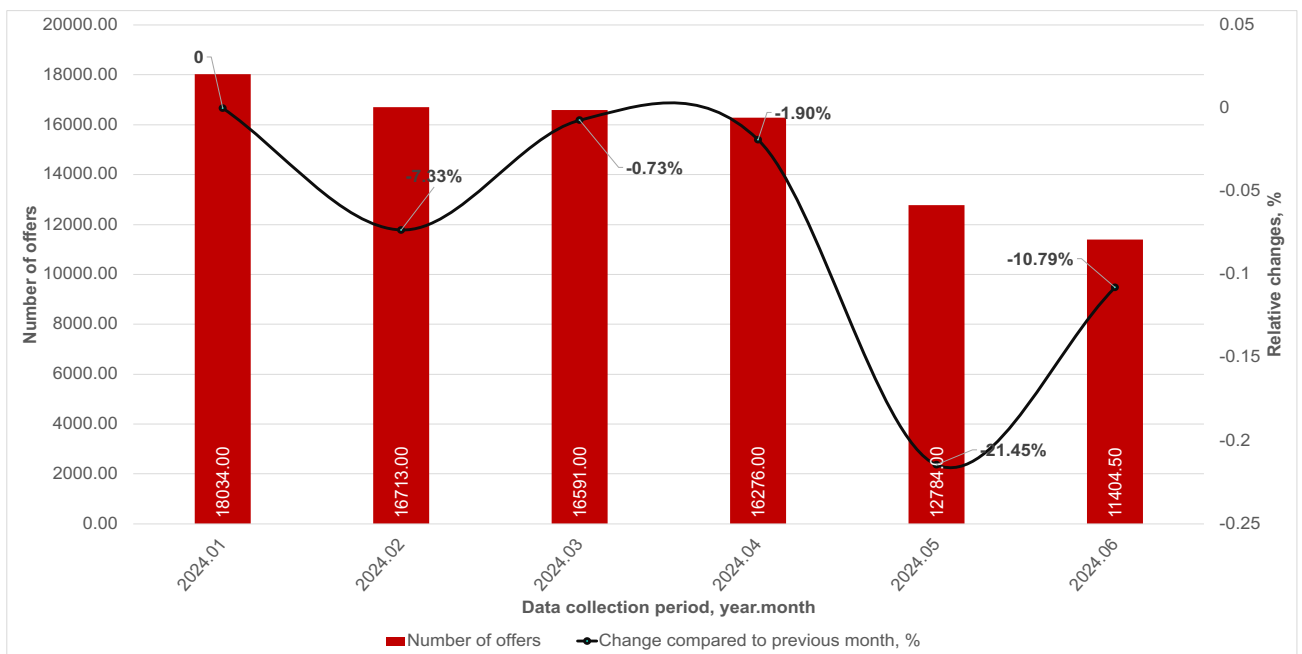
*Fig. 1.1. Volume of the secondary apartment market in Ukraine as of June 2024*

The total number of existing offers for sale in the second quarter of 2024 amounted to 58,448 apartments (Fig. 1.1). The largest share of offers for sale falls on one- and two-bedroom apartments, which accounted for 35.4% and 34.6% of the total number of apartments offered for sale, respectively. For three-room apartments, this share is also significant, reaching 23.9%. For 4-, 5- and more-room apartments, respectively, 6.2% of the total number of offers remains.

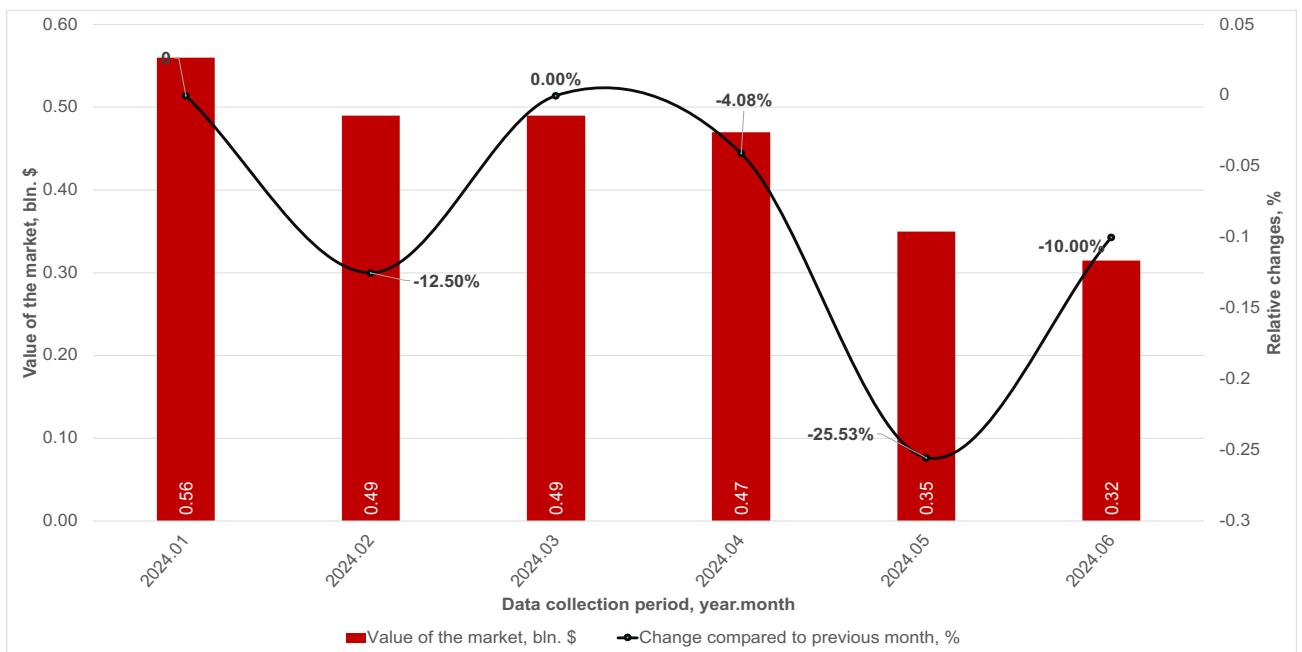
In monetary terms, the volume of the secondary apartment market in Ukraine in June exceeded \$5.2 billion (Fig. 1.1). The largest share belongs to two- and three-room apartments, with 30.3% and 31.5%, respectively, while one-bedroom apartments constitute 20.4%. The share of 4-room apartments in monetary terms is already 12.5%, and for 5-room and more, it is 5.1%.

This picture is quite natural as it reflects the structure of the housing stock, the construction of which has historically evolved over the last decades. The statistical regularities in the distribution of key characteristics and parameters of these distributions are crucial for property valuation, allowing for a comprehensive probabilistic and statistical analysis. The importance of obtaining such distribution parameters is determined by the nature of the data, which has a probabilistic basis.

The indicators of the volume of the secondary market in Ukraine for the first half of 2024, presented in dynamics, provide an overview of the overall situation, taking into account the influence of various factors that either restrained or stimulated market activity (Fig. 1.2, 1.3). We observe that the overall trend throughout the first six months is downward. It is evident that the full-scale war, which continues to negatively impact the real estate market, is the main cause of the general contraction.

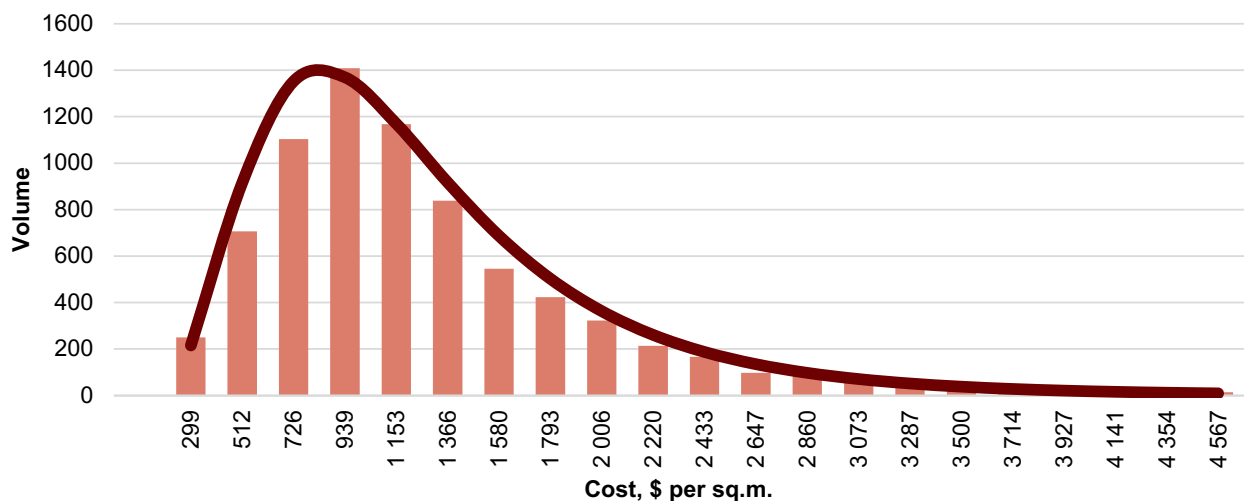


*Fig. 1.2. Dynamics of the number of offers on the secondary apartment market in Ukraine, 1H 2024*



*Fig. 1.3. Dynamics of the volume of the secondary apartment market in Ukraine in 1H 2024, billion \$*

Statistical analysis of the total amount of available primary information after its initial filtering based on the Romanovsky criterion for statistical "outliers" shows that the distribution density of one of the main and widely used monetary criteria - the cost per square meter of area - is not symmetrical and has a pronounced positive (right-sided) asymmetry (Fig. 1.4).



*Fig. 1.4. Density of distribution of the cost of 1 sq. m. of apartments in the secondary market of Ukraine as of June 2024.*

The analysis shows that all distributions of statistical data for certain time periods and geographical regions of this key financial parameter, which is widely used in the valuation of residential and industrial premises, share a similar overall pattern.

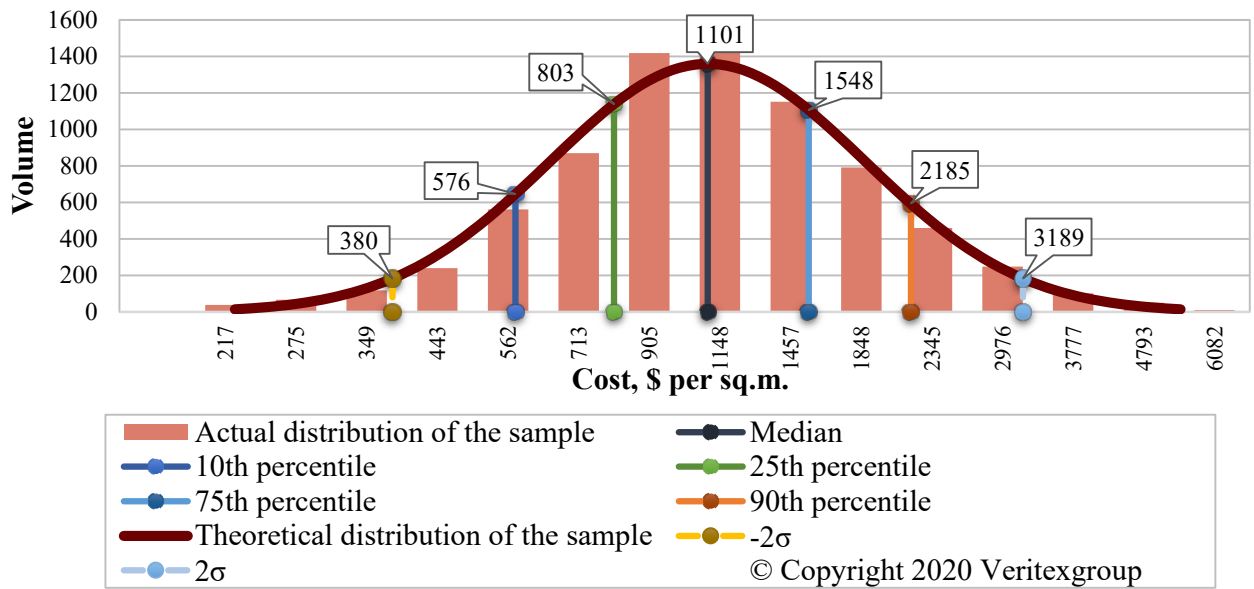
Based on this, we repeatedly assessed the consistency of the distributions or their "agreement" with the most well-known theoretical distributions. Such a check was carried out using one of the most statistically powerful criteria - Pearson's  $\chi^2$  criterion. Repeated calculations allowed us to conclude that the closest theoretical distribution to the obtained statistical samples is the logarithmically normal distribution of the parameter of the cost of 1 square meter of living space.

This general conclusion is undoubtedly important, as it allows us to estimate the parameters of the closest theoretical distribution from a statistical sample, and therefore to determine with the highest reliability the statistical characteristics of the key financial indicator of value, which is 1 square meter of the analyzed premises.

Since the analysis was carried out primarily for the overall most representative statistical sample throughout Ukraine, we can conclude that this distribution law is most consistent with the theoretical one for the specified monetary parameter - the cost of 1 sq. m. of apartments in US dollars.

Below are the density distributions of the cost per square meter of apartments in the secondary market offerings across Ukraine as a whole and in the largest cities (Kyiv, Odessa, Kharkiv, Dnipro, Lviv) as of June 2024, when approximated by a lognormal distribution law (Fig. 1.5, 1.6). Based on the nature of the distribution and for the convenience of processing real estate market statistics, the sample was logarithmized by the decimal logarithm. The values of the cost per square meter were obtained by the inverse logarithm method applied to aggregated values of the obtained statistical indicators.



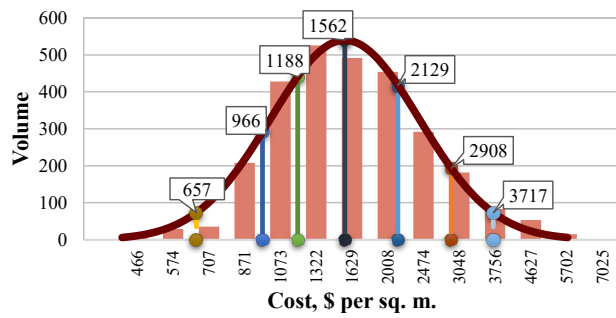


*Fig. 1.5. Description of the density of distribution of the cost of 1 sq. m. of apartments in the secondary market of Ukraine as of June 2024 by the log-normal distribution law*

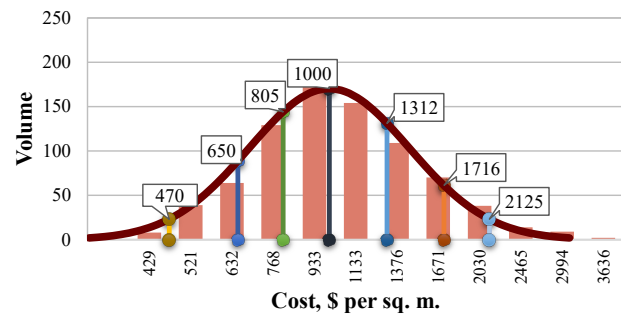
Thus, based on the obtained results, we can justify the application of such an approach. Therefore, all further processing of the primary information database is based on determining the parameters of the log-normal distribution law adopted as the theoretical law for the entire general population of the information database on the distribution of the cost per square meter of living space.

The median values of apartment costs in Kyiv, Odessa, Kharkiv, Dnipro, and Lviv on the secondary market in June 2024 were \$1562/sq.m., \$1000/sqm, \$735/sq.m., \$885/sq.m., and \$1547/sq.m., respectively. Compared to 2023, this indicator decreased in Kyiv, Dnipro, and Kharkiv. In Odesa, it remained stable, while in Lviv it increased. In general, the median cost of apartments in the country is \$ 1101 per square meter, so we can observe significant differences in both the levels of average cost for different regions and the degree of their volatility (Table 1.1, Fig. 1.6). At the same time, obtaining only averaged cost indicators for each individual city is not sufficient, considering the geographic zoning and differentiation of cost indicators within the city.

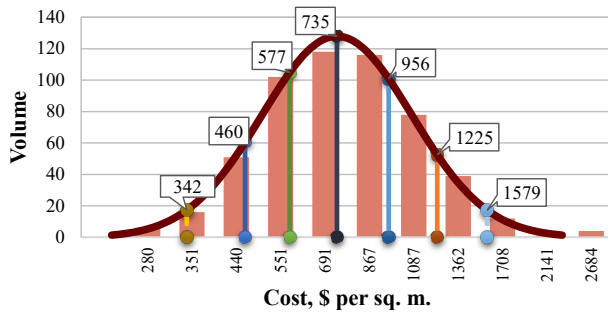
The summary table of distribution parameters for this indicator, including all regional centers without exception, includes not only the mean and median values but also the level of their dispersion and variation, providing a complete description of the probabilistic and statistical parameters of these distributions (Table 1). In particular, this table provides data for values "mean plus and minus  $2\sigma$ ," corresponding to the limits of 95.46% of the corresponding distribution.



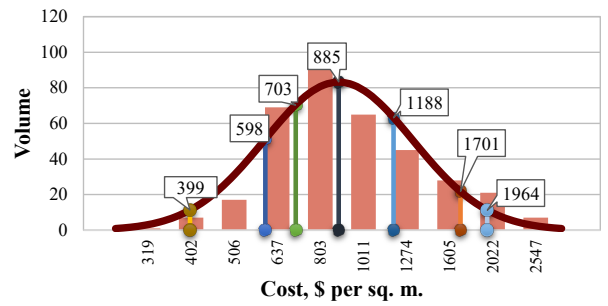
Kyiv



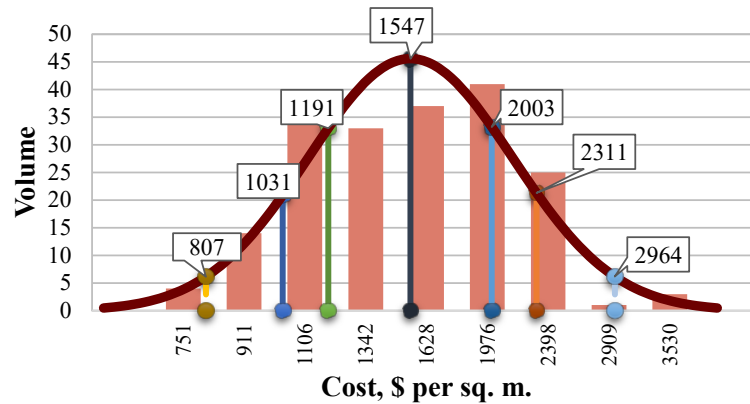
Odesa



Kharkiv



Dnipro



Lviv

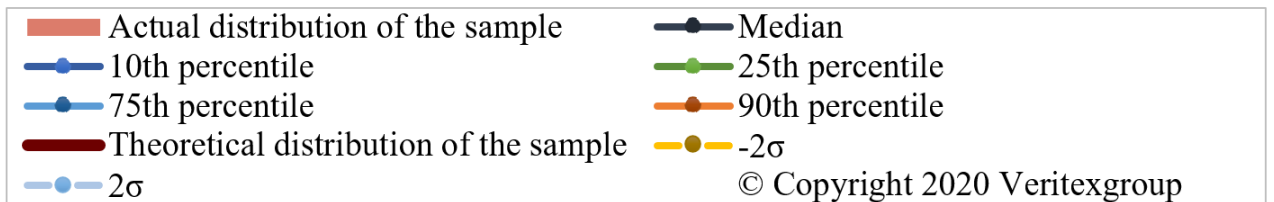
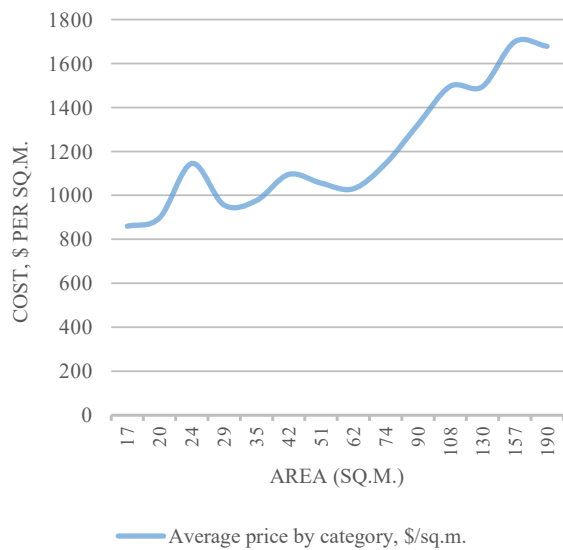


Fig. 1.6. Description of the density of distribution of the cost of 1 sq. m. of secondary market apartments in the largest cities of Ukraine as of June 2024 by the log-normal distribution law

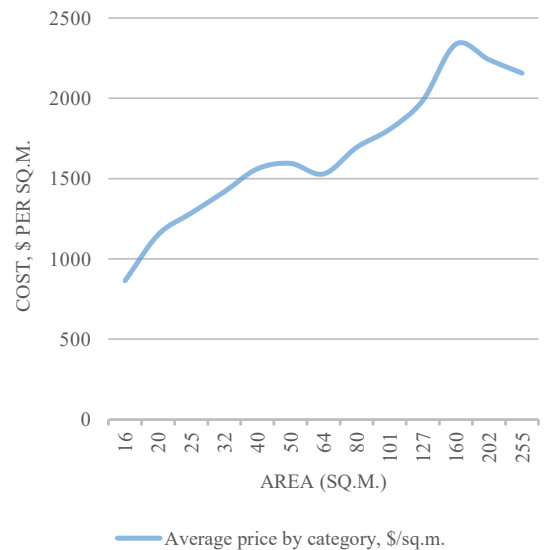
*Table 1.1. Parameters of distributions of the cost per square meter of secondary market apartments in regional centers of Ukraine as of June 2024*

Region	Supply volume	Median ( $\mu$ )	Average price	S <sub>ig</sub> ( $\sigma$ )	Coefficient of variation	Lower bound of the confidence interval	Upper bound of the confidence interval
Ivano-Frankivsk	108	2,97	1018,73	0,14	0,21	495,55	1773,52
Vinnitsia	99	3,06	1195,69	0,10	0,15	735,93	1809,09
Dnipro	360	2,95	1013,59	0,17	0,27	399,19	1964,20
Donetsk	3	3,02	1186,24	0,17	0,25	492,33	2254,61
Zhytomyr	21	3,04	1028,81	0,11	0,17	663,72	1831,54
Zaporizhzhia	138	2,75	587,98	0,13	0,19	315,48	1009,89
Kyiv	2809	3,19	1783,45	0,19	0,29	656,89	3716,64
Kropyvnytskyi	35	2,89	841,23	0,14	0,22	404,72	1519,07
Luhansk	3	2,94	867,34	0,01	0,01	842,60	908,64
Lutsk	35	2,99	1061,69	0,11	0,17	589,25	1646,03
Lviv	192	3,19	1624,64	0,14	0,22	807,43	2964,22
Mykolaiv	127	2,79	660,90	0,13	0,20	339,08	1116,00
Odesa	828	3,00	1119,80	0,16	0,25	470,48	2125,47
Poltava	62	2,96	946,48	0,12	0,18	523,59	1579,38
Rivne	54	3,01	1078,10	0,10	0,15	638,45	1621,00
Sumy	48	2,82	701,44	0,13	0,20	357,17	1207,76
Ternopil	74	3,00	983,60	0,10	0,15	639,61	1579,34
Uzhhorod	75	3,16	1394,89	0,16	0,24	694,25	2957,13
Kharkiv	543	2,87	802,39	0,17	0,26	341,82	1579,25
Kherson	6	2,61	456,02	0,13	0,19	229,48	728,71
Khmelnysky	124	2,94	914,01	0,11	0,17	509,97	1461,06
Cherkasy	52	2,99	1003,42	0,13	0,19	551,86	1746,59
Chernivtsi	36	3,05	1162,17	0,13	0,19	625,31	1982,01
Chernihiv	37	2,86	849,84	0,14	0,21	389,04	1375,06

It is important to establish the correlation between the cost per square meter and the total area of apartments. The analysis of this relationship for one, two, and more room apartments shows that the average cost per square meter is relatively stable up to the total area of approximately 65-70 square meters. Only starting from this level of total area, a significant increase in the cost per square meter is observed. The dependence of the average cost on the area of apartments is presented below in the form of ranges (Figure 1.7, Figure 1.8).



*Fig. 1.7. Dependency of the average cost on the area of apartments in Ukraine in June 2024*



*Fig. 1.8. Dependency of the average cost on the area of apartments in Kyiv in June 2024*

At the same time, for one-bedroom apartments, the dependence of the cost per square meter on the apartment's area is directly proportional, as with the increase in the area, a single living room becomes more spacious, and the value of one square meter becomes larger.

Factor analysis is a cornerstone in processing large volumes of data. It allows predicting and modeling the influence of various factors on the target indicator. Without collecting systematically organized market information and its in-depth analysis, the study of the impact of individual factors is impossible.

Below is an example of factor analysis of the influence of the floor (Table 1.2), type of renovation (Table 1.3), and number of rooms (Table 1.4) in the secondary housing market on the cost per square meter, considering the building's floor level (distinguishing between new and old construction) and location. It is assumed that major cities and the rest of Ukraine have different dynamics of local economic processes.

Table 1.2. Dependence of the median cost of 1 square meter on the building's floor level, location, and apartment floor

Number of floors at the building	Location	Floor of the apartment	Median cost, \$ per m2	Absolute difference with the baseline, \$ per m2	Relative difference from baseline, %
More than 9 floors	Ukraine as a whole	First	436	0	-0,04%
		Average	436	0	0,00%
		Last	394	-42	-9,72%
	The biggest cities *	First	987	-388	-28,20%
		Average	1375	0	0,00%
		Last	1224	-151	-11,00%
	Other cities	First	879	-89	-9,22%
		Average	968	0	0,00%
		Last	885	-83	-8,57%
Less or exactly 9 floors	Ukraine as a whole	First	310	-10	-3,08%
		Average	319	0	0,00%
		Last	272	-48	-14,88%
	The biggest cities *	First	920	-179	-16,26%
		Average	1099	0	0,00%
		Last	967	-132	-12,01%
	Other cities	First	729	-64	-8,03%
		Average	793	0	0,00%
		Last	700	-93	-11,69%

\* Kyiv, Dnipro, Lviv, Odessa, Kharkiv

Table 1.3. Dependence of the median cost of 1 square meter on the building's floor level, location, and the category of apartment renovation

Number of floors at the building	Location	Floor of the apartment	Median cost, \$ per m2	Absolute difference with the baseline, \$ per m2	Relative difference from baseline, %
More than 9 floors	Ukraine as a whole	Housing condition	815	0	0,00%
		Just built	1042	227	27,89%
		Cosmetic repair	978	163	19,99%
		Eurorenovation	1319	505	61,93%
		Author's project	2000	1185	145,46%
			Housing condition	994	0

	The biggest cities *	Just built	1203	209	20,98%
		Cosmetic repair	1000	6	0,59%
		Eurorenovation	1500	506	50,88%
		Author's project	2243	1249	125,63%
	Other cities	Housing condition	631	0	0,00%
		Just built	748	117	18,54%
		Cosmetic repair	820	189	30,03%
		Eurorenovation	1049	419	66,39%
		Author's project	1178	547	86,80%
	Less or exactly 9 floors	Ukraine as a whole	Housing condition	455	0
Just built			769	315	69,23%
Cosmetic repair			763	308	67,84%
Eurorenovation			1016	562	123,59%
Author's project			1413	959	210,95%
The biggest cities *		Housing condition	902	0	0,00%
		Just built	841	-61	-6,75%
		Cosmetic repair	876	-26	-2,90%
		Eurorenovation	1200	298	32,98%
		Author's project	2057	1155	127,99%
Other cities		Housing condition	386	0	0,00%
		Just built	720	334	86,55%
		Cosmetic repair	694	308	79,85%
		Eurorenovation	930	544	141,02%
		Author's project	1100	714	185,00%

\* Kyiv, Dnipro, Lviv, Odessa, Kharkiv

Table 1.4. Dependence of the median cost of 1 square meter on the building's floor level, location, and the number of rooms

Number of floors at the building	Location	Floor of the apartment	Median cost, \$ per m2	Absolute difference with the baseline, \$ per m2	Relative difference from baseline, %
More than 9 floors	Ukraine as a whole	1	1202	0	0,00%
		2	1235	33	2,74%
		3	1282	79	6,60%
		4	1592	390	32,44%
		5	1786	583	48,51%
	The biggest cities *	1	1293	0	0,00%
		2	1341	49	3,77%
		3	1381	88	6,80%
		4	1695	403	31,14%

		5	1905	612	47,35%
	Other cities	1	992	0	0,00%
		2	947	-45	-4,50%
		3	888	-104	-10,52%
		4	805	-187	-18,81%
		5	848	-144	-14,55%
Less or exactly 9 floors	Ukraine as a whole	1	955	0	0,00%
		2	875	-80	-8,33%
		3	830	-124	-13,00%
		4	852	-102	-10,70%
		5	998	43	4,55%
	The biggest cities *	1	1083	0	0,00%
		2	1021	-62	-5,76%
		3	978	-105	-9,70%
		4	1011	-72	-6,65%
		5	1068	-15	-1,42%
	Other cities	1	837	0	0,00%
		2	760	-77	-9,21%
		3	700	-137	-16,38%
		4	679	-158	-18,89%
		5	613	-224	-26,79%

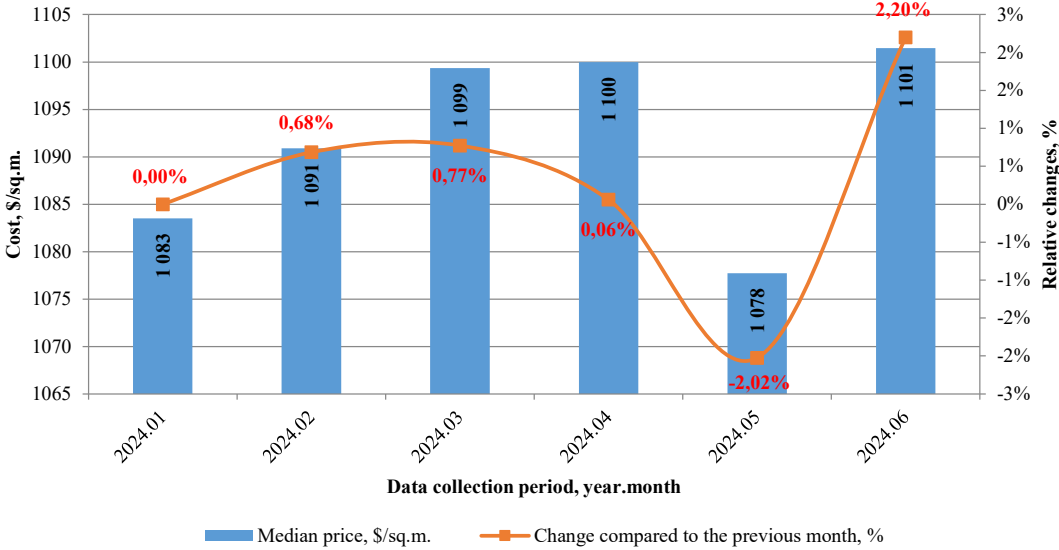
\* Kyiv, Dnipro, Lviv, Odessa, Kharkiv

Based on the obtained results, it can be stated that the floor of the apartment affects the cost differently, depending on the location and type of building fund. In new buildings, apartments on the top floor usually have the best panoramic views. Apartments on the top floor in old buildings do not have such an advantage, so their cost decreases. Therefore, in new buildings, the top floor is more expensive than the first, and vice versa for the old fund. The cost of the first and last floors for the old fund in major cities is approximately at parity.

The analysis of the impact of the renovation class on the cost of housing allows us to conclude that the price difference between a habitable condition and cosmetic repairs is practically absent in major cities, regardless of the type of building fund. In turn, the presence of euro renovation or elite-level housing significantly increases its cost.

An important element in analyzing the initial information base of the real estate market is determining the temporal dynamics of its development. The information provided in Figures 1.9, 1.10, 1.11 demonstrates the uneven dynamics of housing prices in the first half of 2024. Overall, Ukrainian market shows a slight increase in the median price during all six months, with the

exception for May. In Kyiv and Kharkiv, the trend of this indicator continues to be downward during the first half of 2024. The dynamics of the median price in Odesa has remained mostly stable (\$1,000 per square meter). In Dnipro, this indicator fluctuated, with a noticeable decline in May this year and, despite a slight increase in the following month, it did not reach the level of the beginning of the year (\$961 per square meter). Accordingly, last year the cost of housing in Dnipro was growing, but with the increase in the number of air attacks on the city in this period, it began to decrease. The cost of housing in Lviv, as in the previous year, continues to grow. It should be noted that the highest value of the median price was recorded in June (\$1,101 per square meter). The lowest value was in May (\$1,078 per square meter).



*Fig. 1.9. Dynamics of changes in the median value of the cost per square meter of apartments in the secondary housing market in Ukraine in the first half of 2024.*



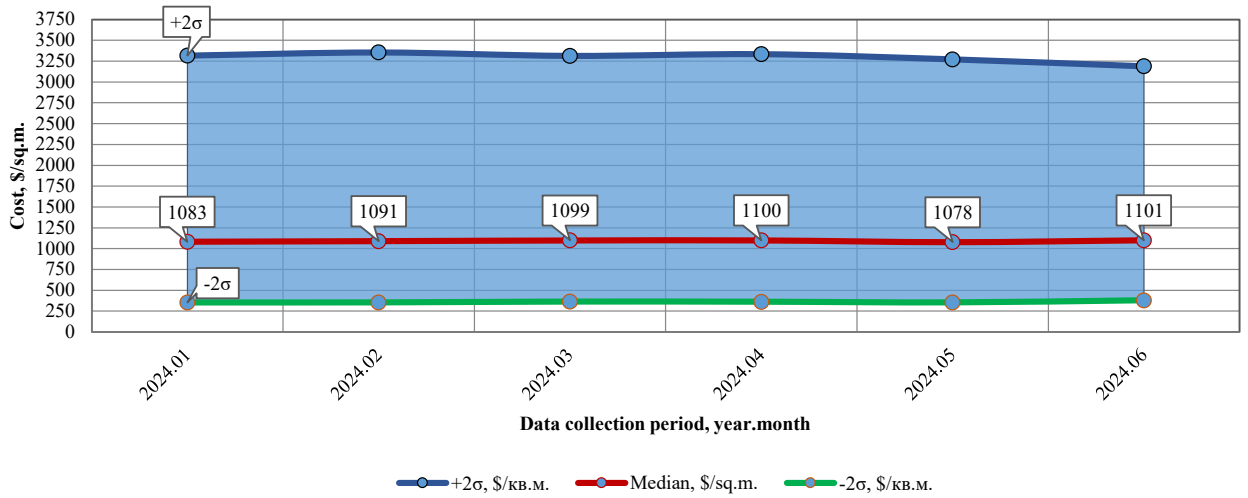
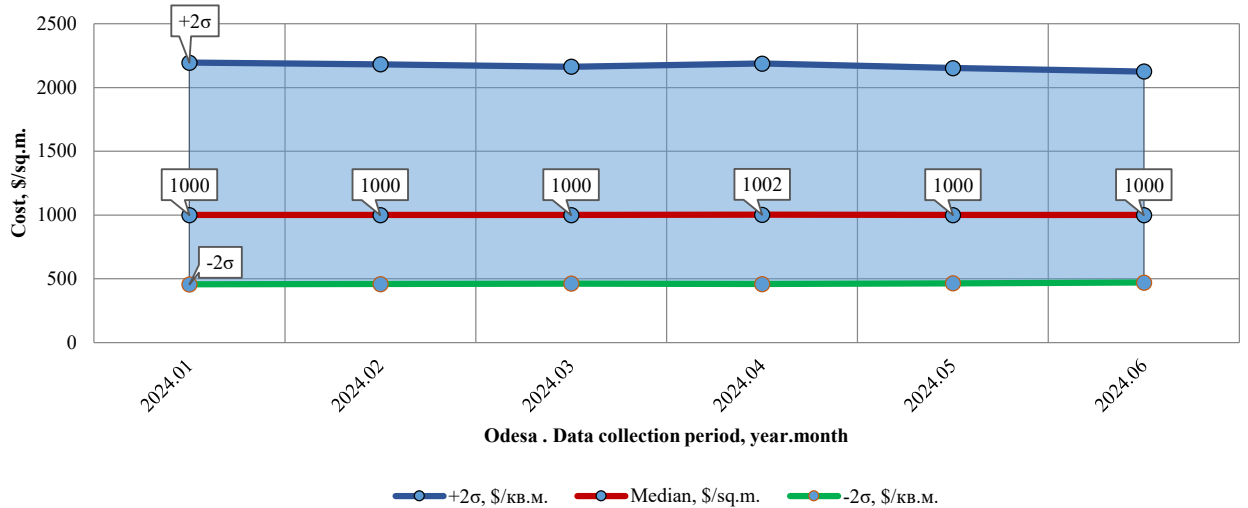
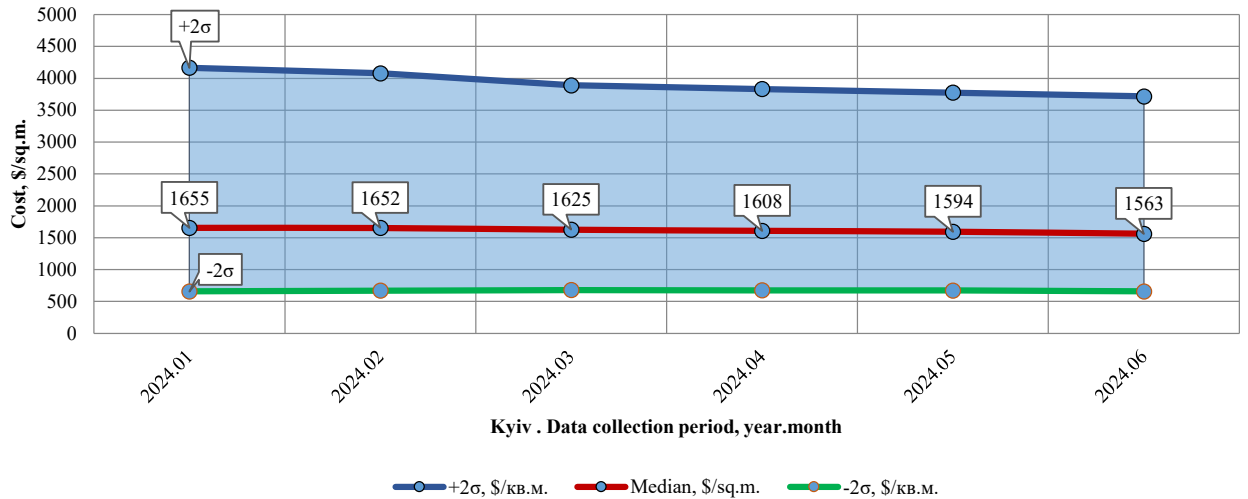


Fig. 1.10. Dynamics of the median and marginal (95.46%) levels of the cost per square meter of housing in Ukraine as of June 2024.



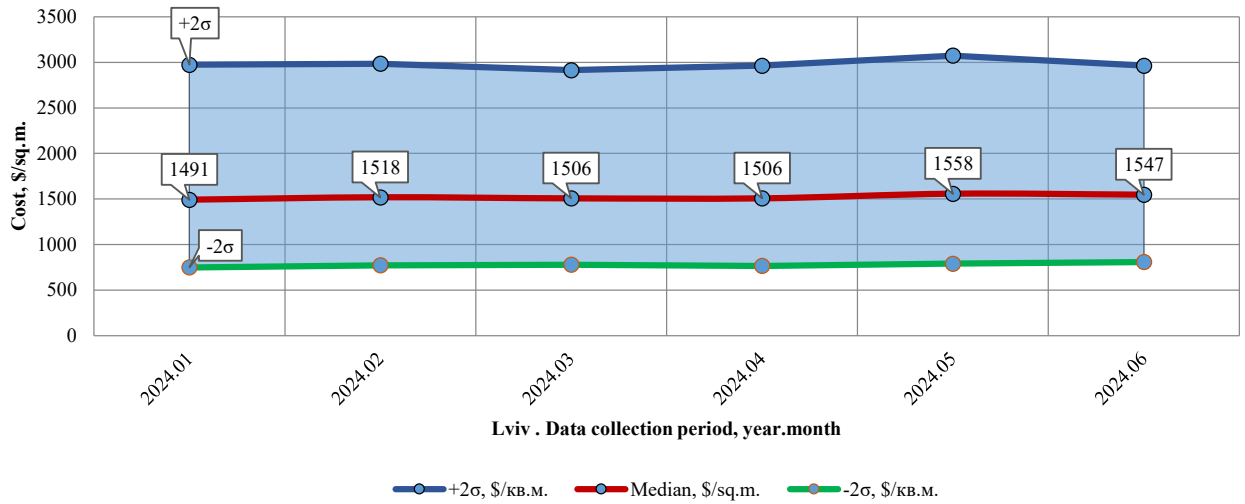
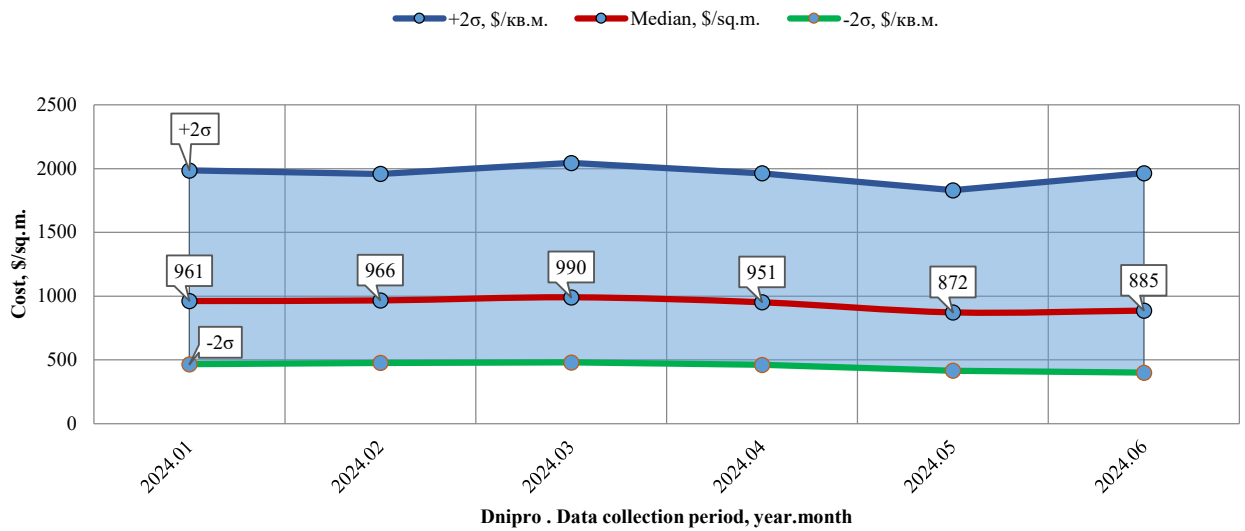
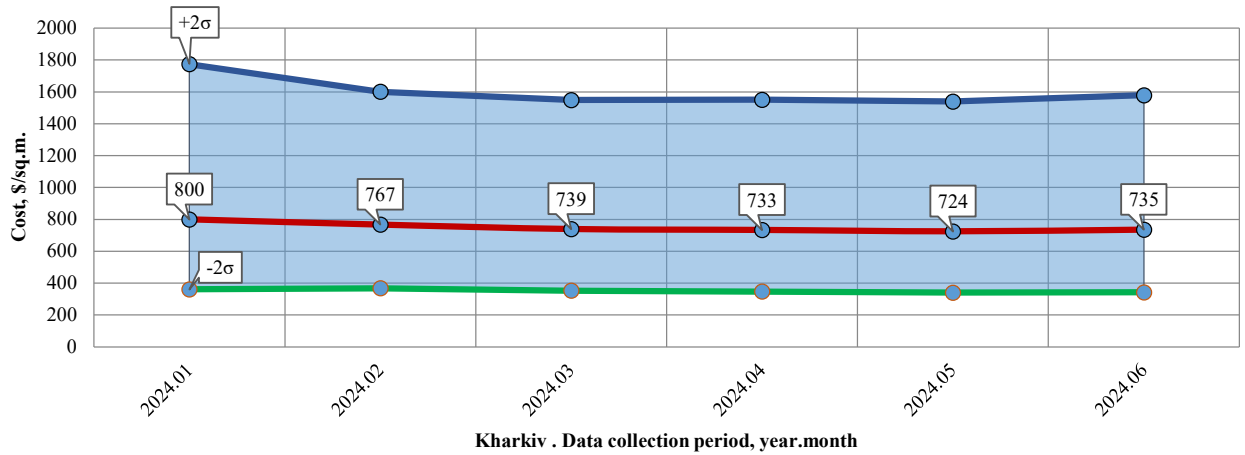


Fig. 1.11. Dynamics of the median and margin (95.46%) levels of the cost per square meter of housing in the largest cities as of June 2024.

The dynamics of dispersion and coefficient of variation in the first half of 2024 are decreasing overall in the Ukrainian market, in contrast to the more or less stable trend in 2023. This feature of the dynamics of these indicators is also characteristic of Kyiv, Kharkiv, Odesa, and Lviv (Figures 1.12, 1.13). However, in the latter two cities, the dispersion and coefficient of variation decreased in March, followed by an increase in April. Among the listed large cities, Dnipro stands out, where the indicators, on the contrary, increased during the first half of 2024. This means that housing prices are more volatile, as evidenced by these dynamics. The standard deviation fluctuated especially noticeably.

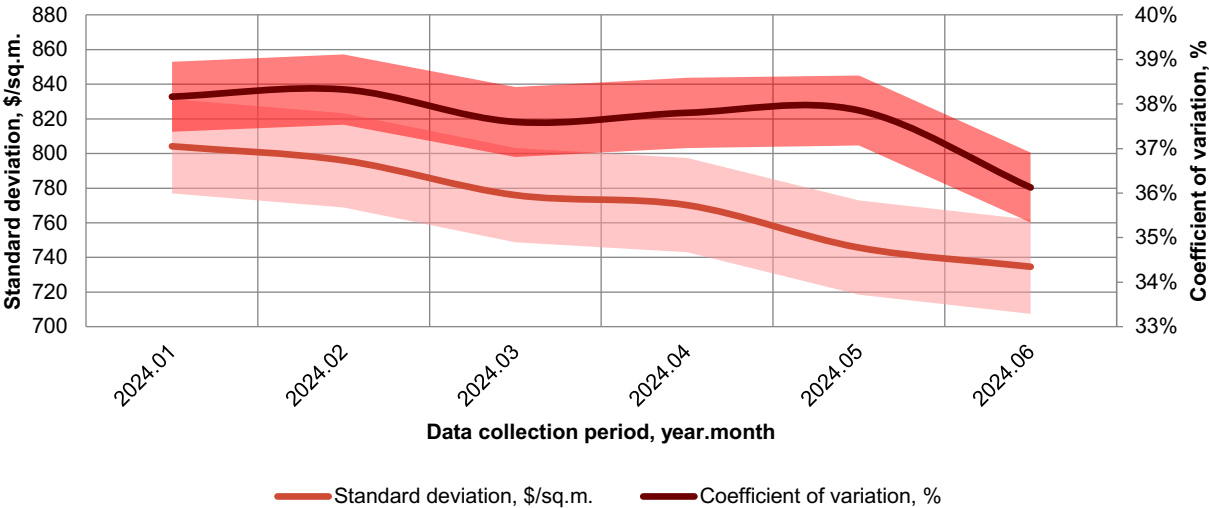
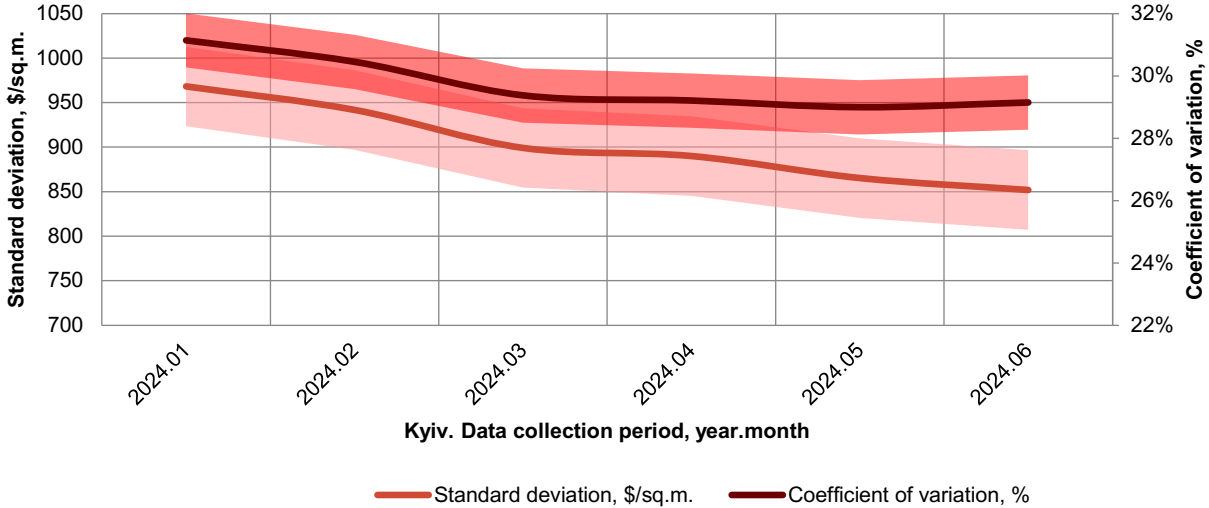
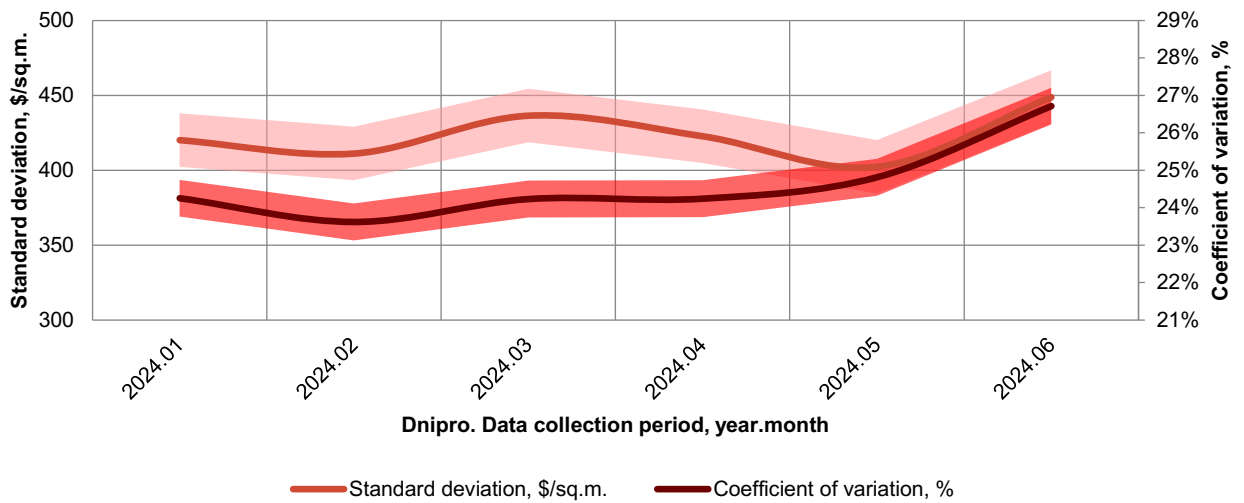
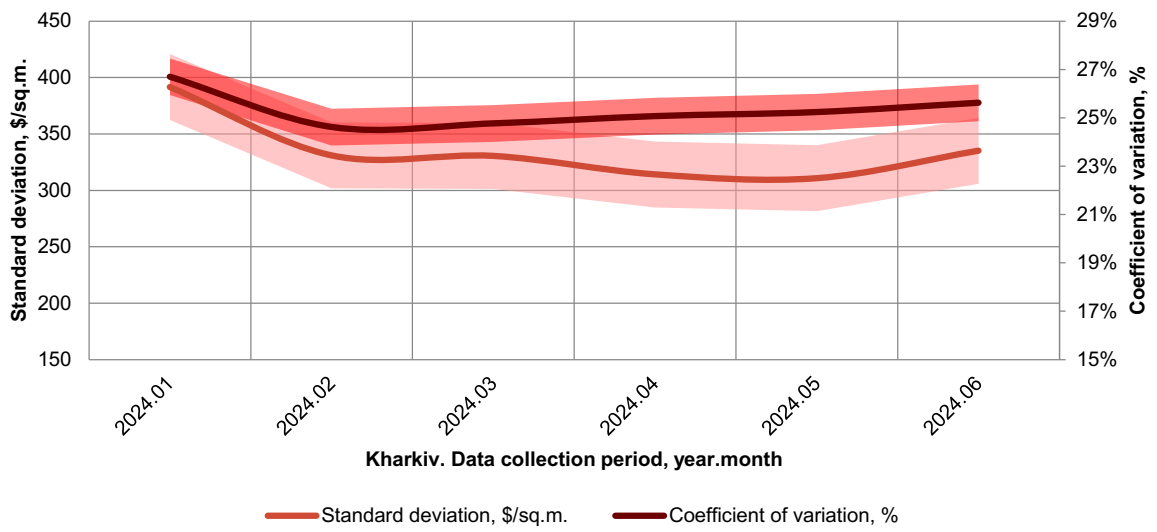
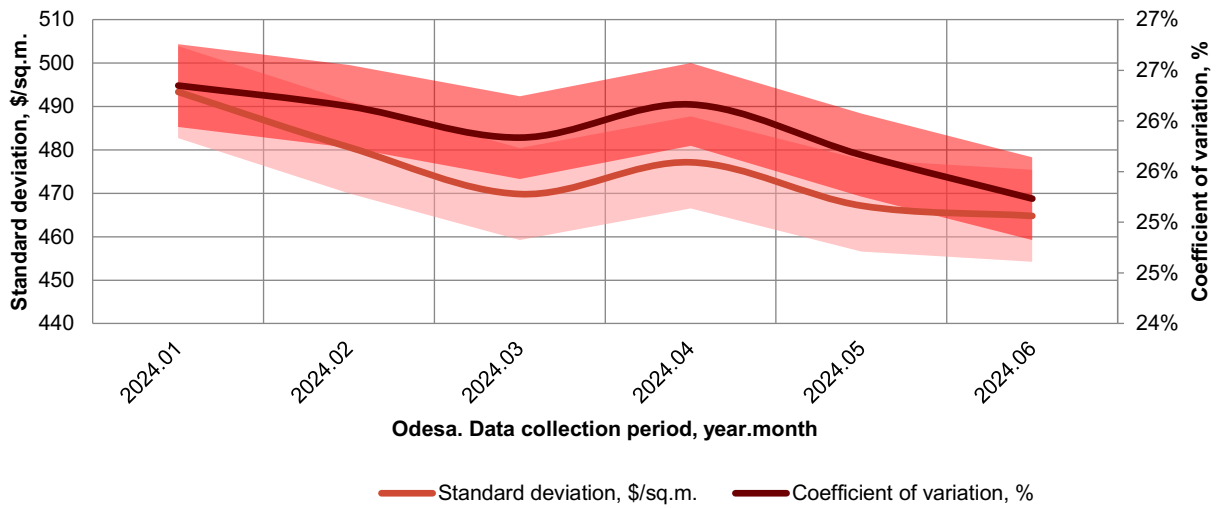
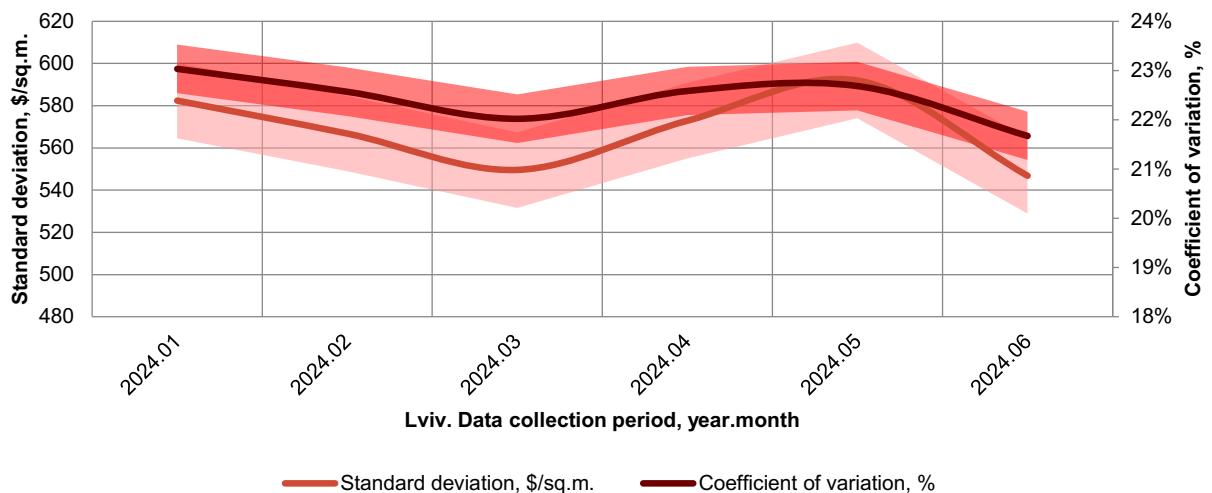


Fig. 1.12. Dynamics of dispersion and coefficient of variation of the cost of 1 sq. m. in the secondary housing market in Ukraine, 1H 2024







*Fig. 1.13. Dynamics of dispersion and coefficient of variation of the cost of 1 sq. m. in the secondary housing market in the largest cities of Ukraine, 1H 2024*

The information base of the real estate market is constantly being replenished and updated, allowing for the expansion of its analytics using modern methods of mathematical and statistical processing of results. This enables obtaining the most substantiated and reliable parameters of this market and its evolution, determining the impact of a wide range of individual pricing factors.

- The unpredictability of the market situation continued to persist in 2024 due to objective reasons associated with the continuation of full-scale war, making the market reaction difficult to forecast. The dynamics of the number of offers continues to decrease along with the overall market volumes.

- It is also worth noting that this trend of previous years is not typical for all cities. For example, Kharkiv is a frontline city heavily affected by shelling, experienced a corresponding decrease in prices and demand. Clearly, the cost per square meter significantly increased in western regions, as seen in the price dynamics graph in Lviv. Similar trends were observed in Ivano-Frankivsk and Volyn. This situation is entirely predictable, as these regions attracted a larger portion of temporarily displaced and evacuated individuals. As for other cities, including the capital of Ukraine, the price dynamics is changing its direction towards a decrease. The cost of housing in Odesa remains stable at \$1,000 per square meter.

- In previous years, there was an increase in the cost of apartments in regions that are not too far from the zones of active hostilities. At the time, this was due to the growing number of internally displaced persons and the

relative safety of these cities. However, the situation has slightly changed. Considering the escalation of the situation with shelling in these regions in the first half of 2024, the attractiveness of housing here has become less attractive, as evidenced by the reduction in the average price. In addition, there is greater volatility in housing prices in Dnipro and neighboring cities.

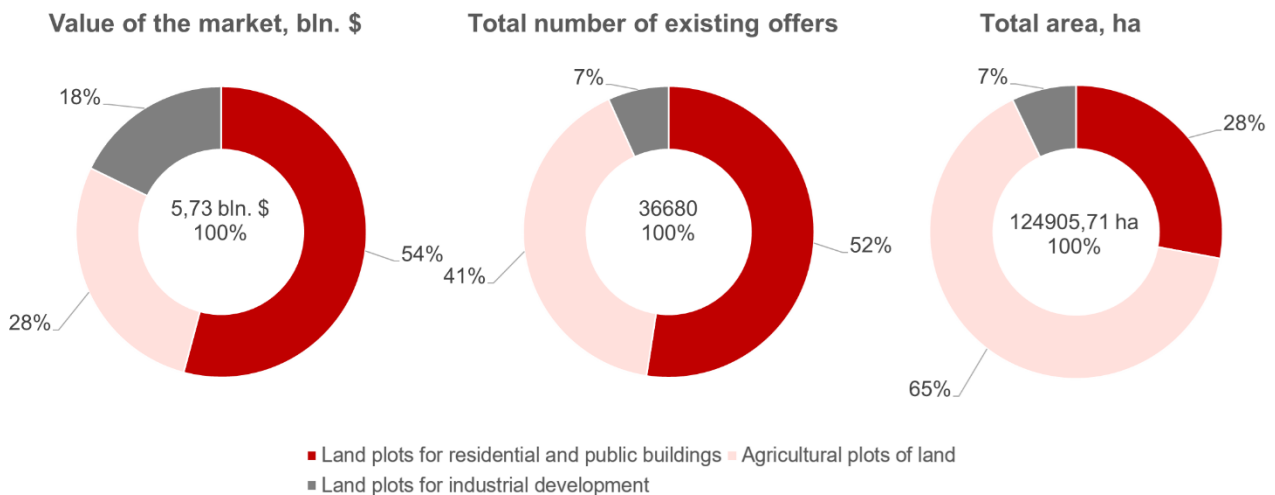
Thus, a study of the overall dynamics of real estate prices in the first half of 2024 shows a slight increase on average, but some of the largest cities are already showing the opposite trend. The behavior of prices during crises caused by extraordinary events and conditions (pandemic and the onset of full-scale war) in 2020, 2022-2023, and continuing to influence the current year is of particular interest in the context of the established real estate market dynamics over the past 12 years.

## 2. INFORMATION AND ANALYTICAL UNIT OF THE LAND MARKET

The information and analytical unit of the market of land plots is divided into three subdivisions according to their purpose:

- Land plots for residential and public buildings;
- Agricultural plots of land;
- Land plots for industrial development.

As of the end of June of 2024, the information base of the land market covers about 36,000 unique offers, where 52% are residential plots, 41% - agricultural plots, and 7% - industrial plots. The total value of the land market currently is 5.73 billion dollars. (Fig. 2.1).

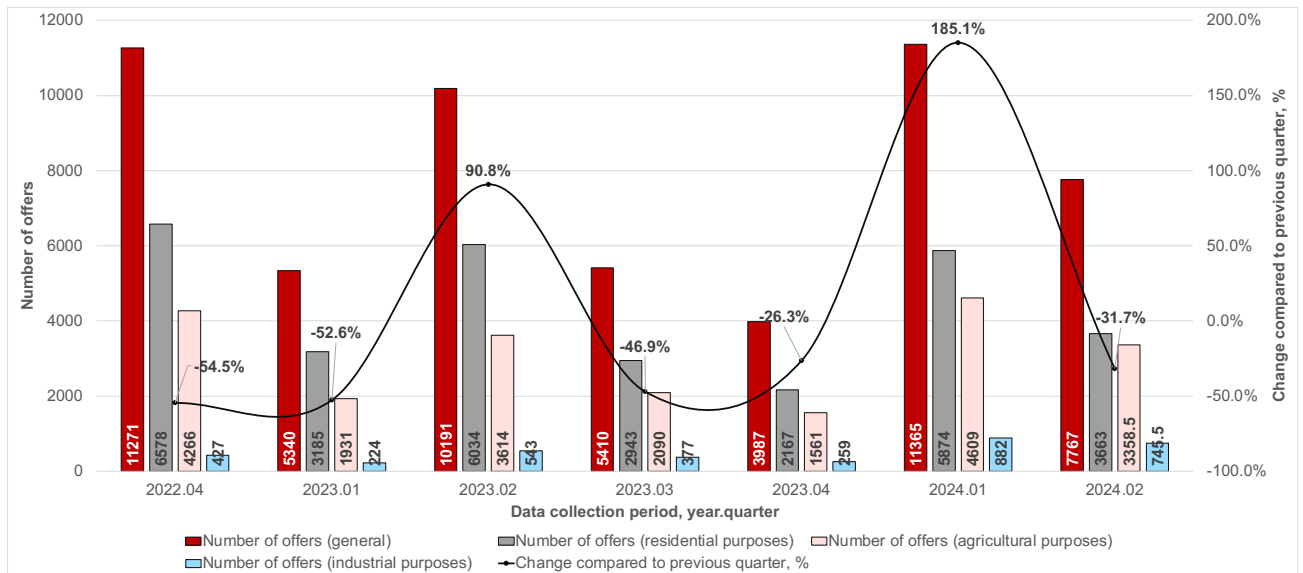


*Fig. 2.1. Volume of the land market in Ukraine as of June 2024*

The dynamics of the change in the number of land market offers in Ukraine for 2022-2024 (Fig. 2.2) provide a characterization of the overall picture, taking into account the influence of various factors that either restrained or, conversely, stimulated market activity. The analysis of these indicators demonstrates a gradual recovery of the market in 2022-2024. The dynamics of the number of offers are wave-like, experiencing periods of growth and decline with a certain regularity. In 2022, the land market in Ukraine experienced a significant decline due to the full-scale war. In 2023, the gradual recovery of the land market began. In 2024, the trend towards recovery continued.

Each period had its own characteristics and was influenced by various factors, such as political events, economic conditions, and market trends. These data reflect the general trend in the land market in Ukraine, highlighting

its sensitivity to external conditions and its ability to recover after periods of crisis.



*Fig. 2.2. Evolution of the number of offers on the land market in Ukraine, 2022-2024*

From the analysis of the land market volume (Fig. 2.3), we also see how the market is gradually recovering from the shock caused by the full-scale invasion, with a trend towards gradual recovery. In 2022, the market suffered significant losses due to economic and political crises, which resulted in substantial declines in market volume. In 2023, a gradual recovery was observed, accompanied by both growth and declines, indicating market instability. At the beginning of 2024, the market continued to show a recovery trend, although it remained sensitive to external factors.



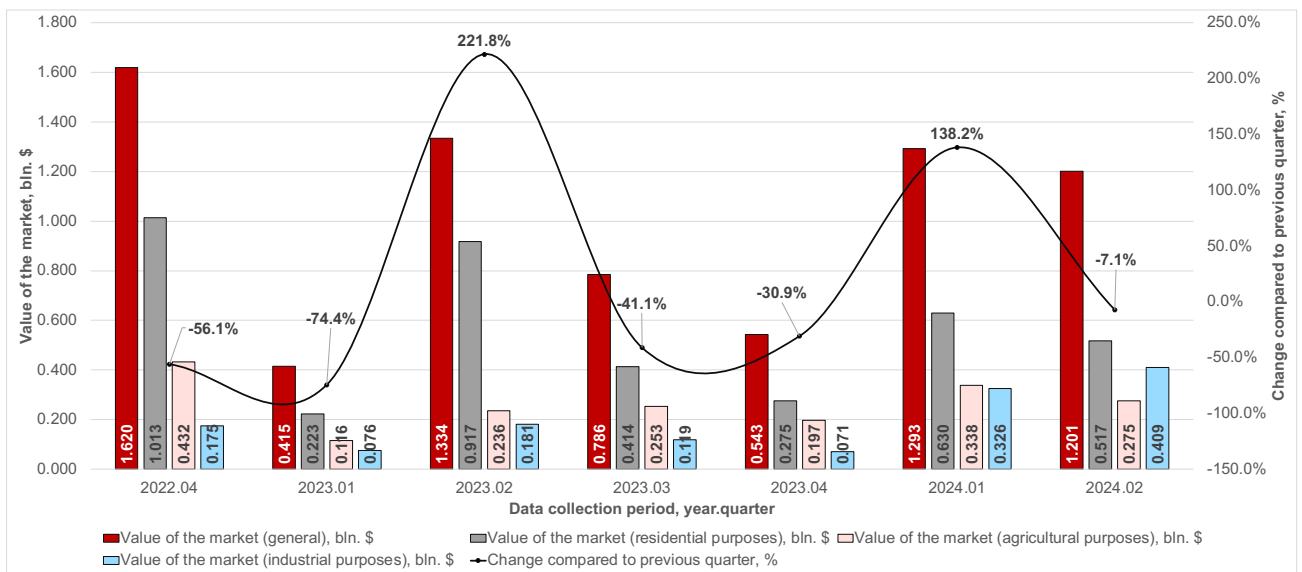


Fig. 2.3. Evolution of the value of the land market in Ukraine, 2022-2024

The conducted analysis showed that the distribution of prices on the land market is also subject to the lognormal distribution law, which was adopted as the theoretical distribution law (Fig. 2.4, 2.5). As a unit of measurement of the area of land plots, one hectare is accepted as the most widely used.

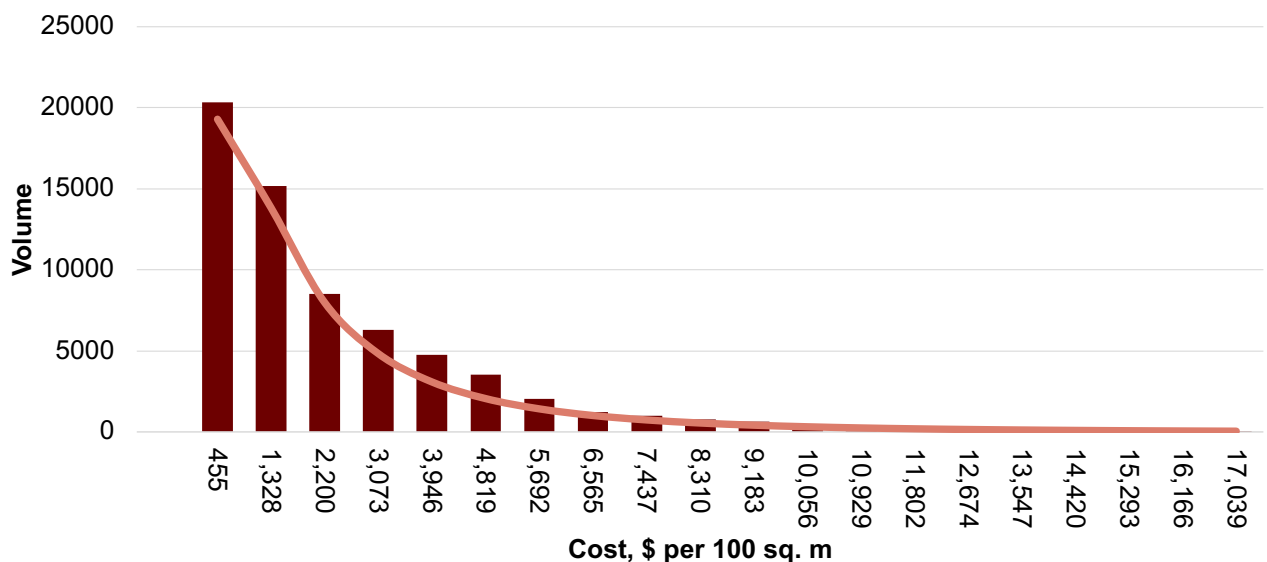
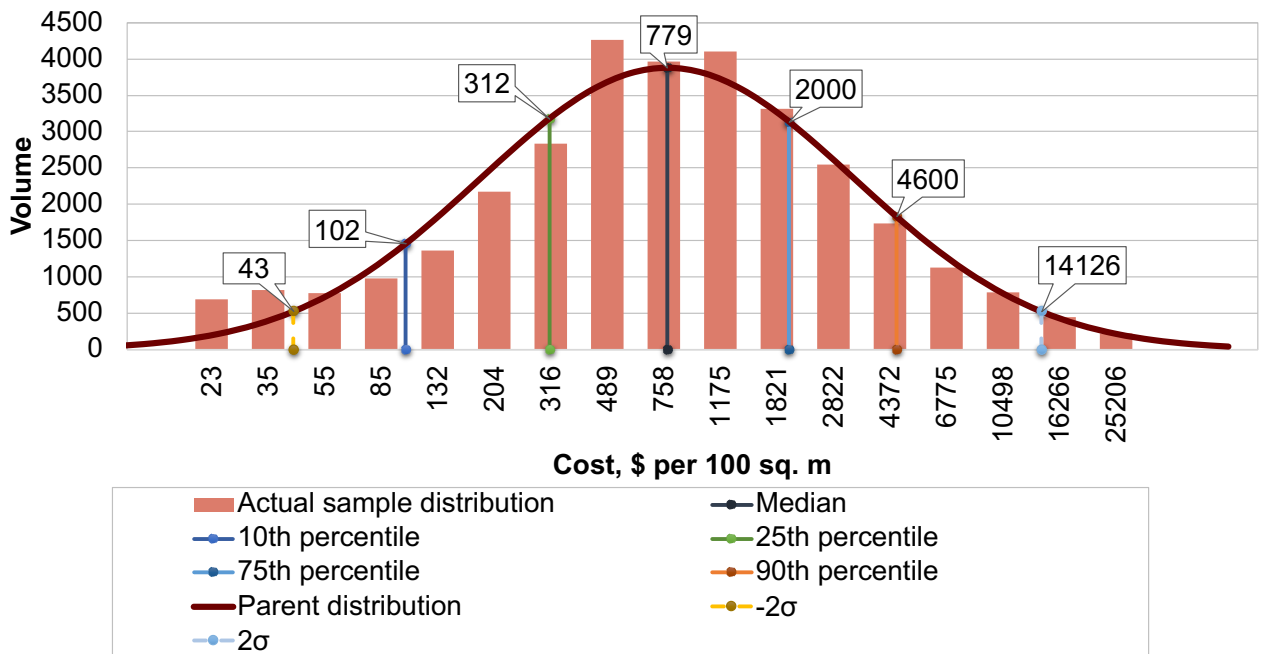
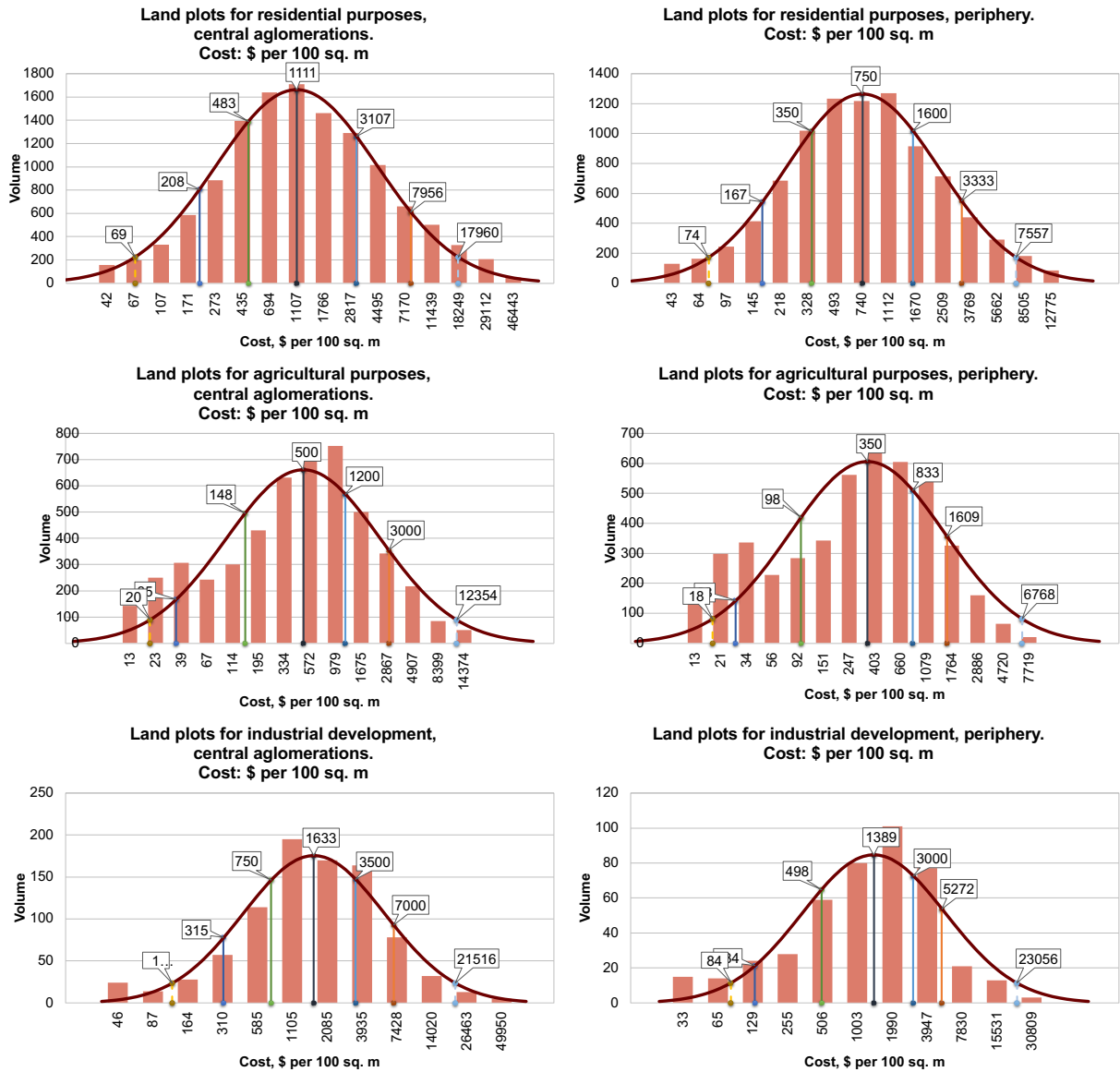


Fig. 2.4. Density distribution cost of 100 m<sup>2</sup> on the land market of Ukraine as of June 2024



*Fig. 2.5. Description of the density distribution of the cost of 100 m<sup>2</sup> on the land market of Ukraine as of June 2024 according to the log-normal distribution law*

Checking the validity of this conclusion for a large number of statistical samples for separate regions and different time intervals confirmed its reasonableness (Fig. 2.6).



*Fig. 2.6. Description of the density of the distribution of the cost of 100 m<sup>2</sup> land on the market of Ukraine depending on the type of land use and geographical cluster as of June 2024 according to the log-normal distribution law*

The consolidated table of land value distribution parameters for all regions without exception includes not only the average and median values, but also the level of their dispersion and variation, which fully describes the probabilistic-statistical parameters of these distributions (tables 2.1 - 2.3). These tables show data for the "mean plus and minus 2  $\sigma$ " values, which correspond to the limits of 95.46% of the corresponding distribution.

The data provided in Tables 2.1 – 2.3 indicate significant differences both in the average cost levels among different regions, exceeding threefold, and in the degrees of their volatility. Therefore, obtaining only averaged value

indicators for each individual region or area is insufficient, considering the geographical zoning and regionalization of cost indicators.

*Table 2.1. Parameters of cost distribution 100 m<sup>2</sup> of land market (land plots for residential and public buildings) in regional centers of Ukraine as of June 2024*

Region	Amount of offers	Median ( $\mu$ )	Average	S lg ( $\sigma$ )	Coefficient of variations	Lower confidence limit interval	Upper confidence limit interval
Kyiv region	6315	3.02	2533.45	0.60	1.15	65.05	16855.59
Lviv region	2084	3.00	1788.52	0.50	0.89	97.19	10084.23
Odesa region	1803	3.27	6748.74	0.67	1.34	86.57	40609.20
Vinnitsia region	1259	3.01	2381.77	0.55	1.00	82.22	12926.74
Dnipropetrovsk region	1195	2.95	1808.58	0.55	1.01	69.87	11143.45
Ivano-Frankivsk region	1113	3.02	1860.67	0.57	1.06	74.75	14749.04
Transcarpathian region	844	3.01	1829.26	0.47	0.81	117.58	8913.71
Volyn region	744	2.78	1045.04	0.50	0.89	58.93	6108.79
Rivne region	703	2.75	1023.72	0.45	0.76	72.88	4429.48
Poltava	694	2.67	821.43	0.48	0.83	52.07	4182.55
Zhytomyr region	688	2.74	922.10	0.46	0.80	65.87	4685.81
Khmelnitskyi region	561	2.86	1225.51	0.48	0.84	78.43	6599.40
Kharkiv region	462	2.85	1552.50	0.52	0.93	63.43	7725.38
Cherkasy region	453	2.70	1083.31	0.52	0.93	45.73	5467.11
Ternopil region	428	2.91	1395.30	0.42	0.70	118.88	5461.63
Chernivtsi region	375	3.00	1876.79	0.53	0.95	86.90	11507.40
Chernihiv region	282	2.54	658.19	0.48	0.84	37.90	3231.83
Kirovohrad region	254	2.78	974.01	0.55	1.00	48.79	7567.94
Mykolaiv region	233	2.80	1008.61	0.47	0.81	72.20	5409.99
Zaporizhzhia region	231	2.82	1195.46	0.52	0.93	60.67	7325.40
Sumy region	161	2.70	965.56	0.51	0.89	49.04	5155.43
Donetsk region	54	2.83	1409.34	0.54	0.97	57.32	8142.04

Kherson region	23	3.00	1031.13	0.27	0.42	293.30	3409.47
Luhansk region	10	3.22	7457.74	0.65	1.27	84.06	32403.92

*Table 2.2. Parameters of cost distribution 100 m<sup>2</sup> of land market (agricultural plots of land) in regional centers of Ukraine as of June 2024*

Region	Amount of offers	Median ( $\mu$ )	Average	S lg ( $\sigma$ )	Coefficient of variations	Lower confidence limit interval	Upper confidence limit interval
Kyiv region	2491	2.72	1266.02	0.60	1.14	32.97	8501.08
Lviv region	959	2.89	1316.18	0.53	0.96	68.03	9019.86
Ivano-Frankivsk region	658	2.87	1181.07	0.60	1.15	46.27	12097.44
Odesa region	474	2.76	1665.93	0.67	1.35	26.09	12482.25
Vinnytsia region	449	2.73	1111.46	0.53	0.95	47.64	6132.72
Dnipropetrovsk region	448	2.15	503.15	0.70	1.44	5.68	3524.81
Transcarpathian region	431	2.78	850.74	0.52	0.92	55.95	6434.11
Khmelnyskyi region	420	2.55	581.77	0.56	1.03	26.83	4634.29
Poltava	367	2.24	381.20	0.58	1.08	12.06	2540.18
Zhytomyr region	320	2.41	432.62	0.55	1.02	20.20	3346.68
Rivne region	294	2.56	656.40	0.47	0.82	40.81	3235.67
Volyn region	267	2.60	602.75	0.55	1.00	31.98	5002.38
Cherkasy region	244	2.32	485.73	0.59	1.10	14.00	3100.18
Chernihiv region	217	2.19	307.62	0.59	1.10	10.30	2312.21
Chernivtsi region	206	2.70	849.10	0.53	0.96	43.49	5873.94
Kharkiv region	180	2.23	429.56	0.68	1.37	7.53	3871.67
Ternopil region	151	2.80	852.75	0.42	0.71	91.05	4457.99
Kirovohrad region	99	1.70	281.85	0.63	1.21	2.80	887.82
Sumy region	96	1.99	373.59	0.69	1.40	4.17	2313.19
Mykolaiv region	87	1.85	265.27	0.65	1.29	3.50	1432.80
Zaporizhzhia region	67	2.32	507.72	0.60	1.13	13.19	3234.30
Donetsk region	19	1.70	313.43	0.78	1.76	1.36	1834.50
Kherson region	13	1.82	583.41	0.82	1.91	1.55	2876.20

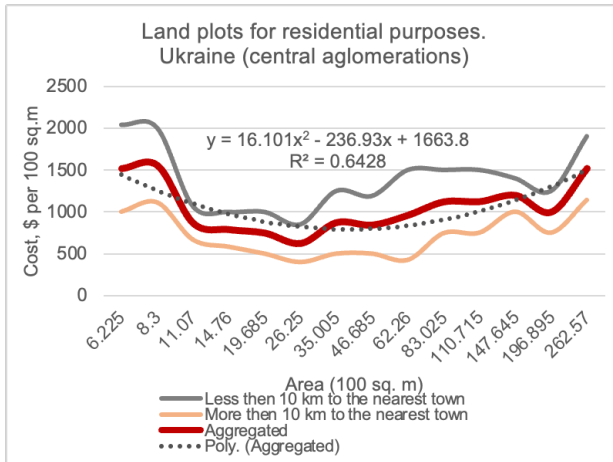
Luhansk region	3	2.30	262.54	0.64	1.25	10.50	3810.47
----------------	---	------	--------	------	------	-------	---------

*Table 2.3. Parameters of cost distribution 100 m<sup>2</sup> of land market (land plots for industrial development) in regional centers of Ukraine as of June 2024*

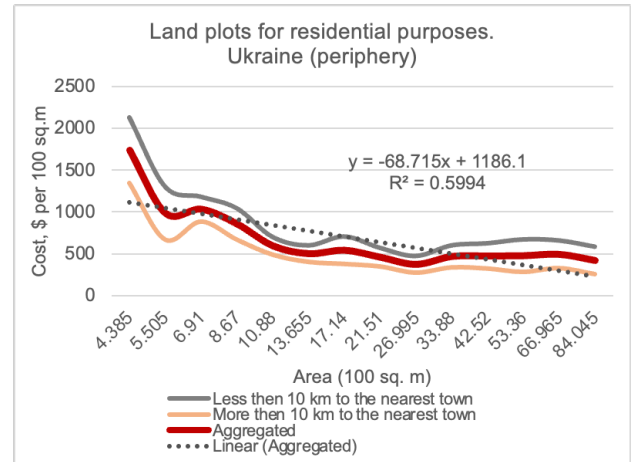
Region	Amount of offers	Median ( $\mu$ )	Average	S lg ( $\sigma$ )	Coefficient of variations	Lower confidence limit interval	Upper confidence limit interval
Kyiv region	514	3.18	2768.68	0.62	1.19	86.57	25991.97
Lviv region	144	3.40	3366.22	0.55	0.99	203.19	30904.54
Odesa region	133	3.00	2453.95	0.53	0.95	87.05	11487.05
Dnipropetrovsk region	75	3.07	2409.14	0.61	1.16	71.19	19120.10
Transcarpathian region	68	3.32	2581.49	0.70	1.44	84.45	52437.37
Ivano-Frankivsk region	55	3.35	2921.97	0.52	0.93	201.39	24391.87
Rivne region	50	3.20	1752.50	0.43	0.72	223.58	11235.34
Volyn region	39	3.18	2339.84	0.61	1.16	93.28	25114.38
Zhytomyr region	33	2.83	1129.30	0.56	1.02	51.63	8774.76
Khmelnyskyi region	29	3.00	1773.81	0.51	0.90	97.32	10275.24
Cherkasy region	26	2.95	1093.00	0.63	1.22	49.49	16164.71
Vinnytsia region	21	3.37	3728.32	0.63	1.23	126.45	43057.64
Ternopil region	20	3.25	2537.57	0.55	1.01	139.89	23090.32
Kirovohrad region	18	2.82	1086.95	0.55	1.00	53.09	8190.23
Mykolaiv region	17	2.14	411.54	0.53	0.96	11.94	1583.52
Chernivtsi region	17	3.30	2135.97	0.61	1.16	121.91	32810.40
Poltava	16	2.96	1421.27	0.55	1.01	71.76	11858.59
Chernihiv region	6	2.91	1098.24	0.40	0.67	126.44	5117.35
Kharkiv region	6	3.22	2732.50	0.66	1.30	80.56	34100.94
Zaporizhzhia region	5	2.90	1392.83	0.49	0.85	84.82	7545.03
Sumy region	4	2.99	993.00	0.42	0.70	142.46	6614.34
Donetsk region	3	1.31	1401.74	1.35	8.06	0.04	10144.78

The dependency of the cost of 1 square meter of land on the total size of the plot for residential and agricultural purposes is demonstrated in Figures 2.7 – 2.10.

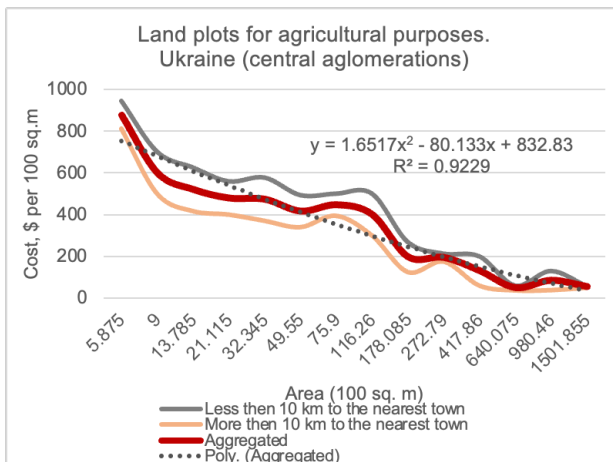
The obtained quantitative equations, providing an approximation of these empirical relationships, allow for direct adjustments when correlating the cost of existing market offerings with appraisal objects.



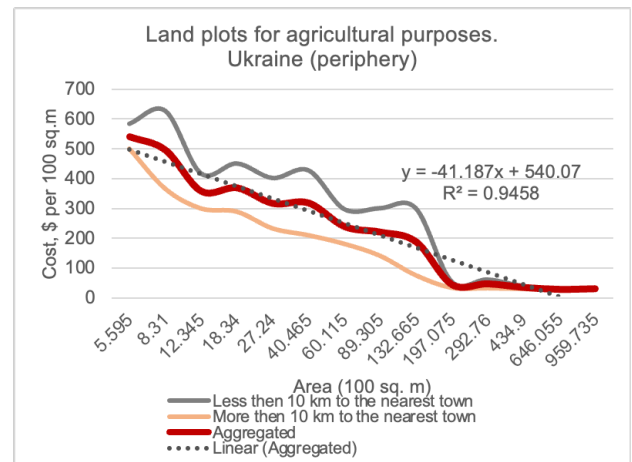
**Fig. 2.7. Dependence of the value of 100 m<sup>2</sup> of residential land plots on their total area (Central agglomerations)**



**Fig. 2.8. Dependence of the value of 100 m<sup>2</sup> of residential land plots on their total area (Periphery)**



**Fig. 2.9. Dependence of the value of 100 m<sup>2</sup> of agricultural land plots on their total area (Central agglomerations)**



**Fig. 2.10. Dependence of the value of 100 m<sup>2</sup> of agricultural land plots on their total area (Periphery)**

In a generalized form, this information is presented in table 2.4, where the median cost of 100 m<sup>2</sup> is provided depending on the category of land use, distance from the nearest cities and regions of location. The sizes of land plots

are conditionally divided into up to 2500 m<sup>2</sup> and more than 2500 m<sup>2</sup>, since in Ukraine most often no more than 2500 m<sup>2</sup> are allocated for one household.

*Table 2.4. Dependence of the cost of 100 m<sup>2</sup> of land on the category of land use, region, distance to the nearest city and the size of the plot*

Category of land use	Region	Distance to the nearest city	Plot size	Median cost, \$/100m <sup>2</sup>	Absolute difference from the baseline, \$/100m <sup>2</sup>	Relative difference from baseline, %
Land plots for residential and public buildings	Ukraine	Up to 10 km	General	1187.8	-	-
			More than 2500 m <sup>2</sup>	1071.21	-116.59	-9.82%
			Up to 2500 m <sup>2</sup>	1216.93	29.13	2.45%
		From 10 to 50 km	General	632.462	-	-
			More than 2500 m <sup>2</sup>	598.282	-116.59	-9.82%
			Up to 2500 m <sup>2</sup>	644.261	29.13	2.45%
	Central agglomerations *	Up to 10 km	General	1447.72	-	-
			More than 2500 m <sup>2</sup>	1250	-116.59	-9.82%
			Up to 2500 m <sup>2</sup>	1500	29.13	2.45%
		From 10 to 50 km	General	738.243	-	-
			More than 2500 m <sup>2</sup>	705.35	-116.59	-9.82%
			Up to 2500 m <sup>2</sup>	750	29.13	2.45%
	Periphery	Up to 10 km	General	937.08	-	-
			More than 2500 m <sup>2</sup>	882.35	-116.59	-9.82%
			Up to 2500 m <sup>2</sup>	950	29.13	2.45%
		From 10 to 50 km	General	419.973	-	-
			More than 2500 m <sup>2</sup>	365.43	-116.59	-9.82%
			Up to 2500 m <sup>2</sup>	437.5	29.13	2.45%



<b>Agricultural plots of land</b>	<b>Ukraine</b>	<b>Up to 10 km</b>	General	544.033	-	-
			More than 2500 m <sup>2</sup>	326.056	-217.98	-40.07%
			Up to 2500 m <sup>2</sup>	729.621	185.59	34.11%
		<b>From 10 to 50 km</b>	General	295.893	-	-
			More than 2500 m <sup>2</sup>	146.59	-149.30	-50.46%
			Up to 2500 m <sup>2</sup>	493.178	197.29	66.67%
	<b>Central agglomerations *</b>	<b>Up to 10 km</b>	General	625.804	-	-
			More than 2500 m <sup>2</sup>	401.61	-224.19	-35.82%
			Up to 2500 m <sup>2</sup>	861.87	236.07	37.72%
		<b>From 10 to 50 km</b>	General	368.702	-	-
			More than 2500 m <sup>2</sup>	200	-168.70	-45.76%
			Up to 2500 m <sup>2</sup>	589.085	220.38	59.77%
	<b>Periphery</b>	<b>Up to 10 km</b>	General	477.186	-	-
			More than 2500 m <sup>2</sup>	250	-227.19	-47.61%
			Up to 2500 m <sup>2</sup>	639.365	162.18	33.99%
<b>From 10 to 50 km</b>		General	197.161	-	-	
		More than 2500 m <sup>2</sup>	75	-122.16	-61.96%	
		Up to 2500 m <sup>2</sup>	361.11	163.95	83.16%	
<b>Industrial plots of land</b>	<b>Ukraine</b>	<b>Up to 10 km</b>	General	1877.56	-	-
			More than 2500 m <sup>2</sup>	1331.1	-546.46	-29.11%
			Up to 2500 m <sup>2</sup>	3535.35	1657.79	88.30%
		<b>From 10 to 50 km</b>	General	1113.19	-	-
			More than 2500 m <sup>2</sup>	925.762	-187.43	-16.84%
			Up to 2500 m <sup>2</sup>	1958.97	845.78	75.98%

	<b>Central agglomerations</b> *	<b>Up to 10 km</b>	General	2030	-	-
			More than 2500 m <sup>2</sup>	1500	-530.00	-26.11%
			Up to 2500 m <sup>2</sup>	4000	1970.00	97.04%
		<b>From 10 to 50 km</b>	General	1187.71	-	-
			More than 2500 m <sup>2</sup>	1000	-187.71	-15.80%
			Up to 2500 m <sup>2</sup>	2050	862.29	72.60%
	<b>Periphery</b>	<b>Up to 10 km</b>	General	1622.36	-	-
			More than 2500 m <sup>2</sup>	1009.09	-613.27	-37.80%
			Up to 2500 m <sup>2</sup>	3000	1377.64	84.92%
		<b>From 10 to 50 km</b>	General	791.775	-	-
			More than 2500 m <sup>2</sup>	600	-191.78	-24.22%
			Up to 2500 m <sup>2</sup>	1594.84	803.06	101.43%

\* Kyiv region, Odesa region, Lviv region, Kharkiv region, Dnipropetrovsk region

An essential element of the analysis of the original information base of the real estate market is the determination of the time dynamics of its development. The information provided in Figures 2.11 – 2.13 demonstrates the relative stabilization of land values with minor fluctuations until mid-2023, after which a gradual price increase began. The indicator has nearly returned to the pre-war state.

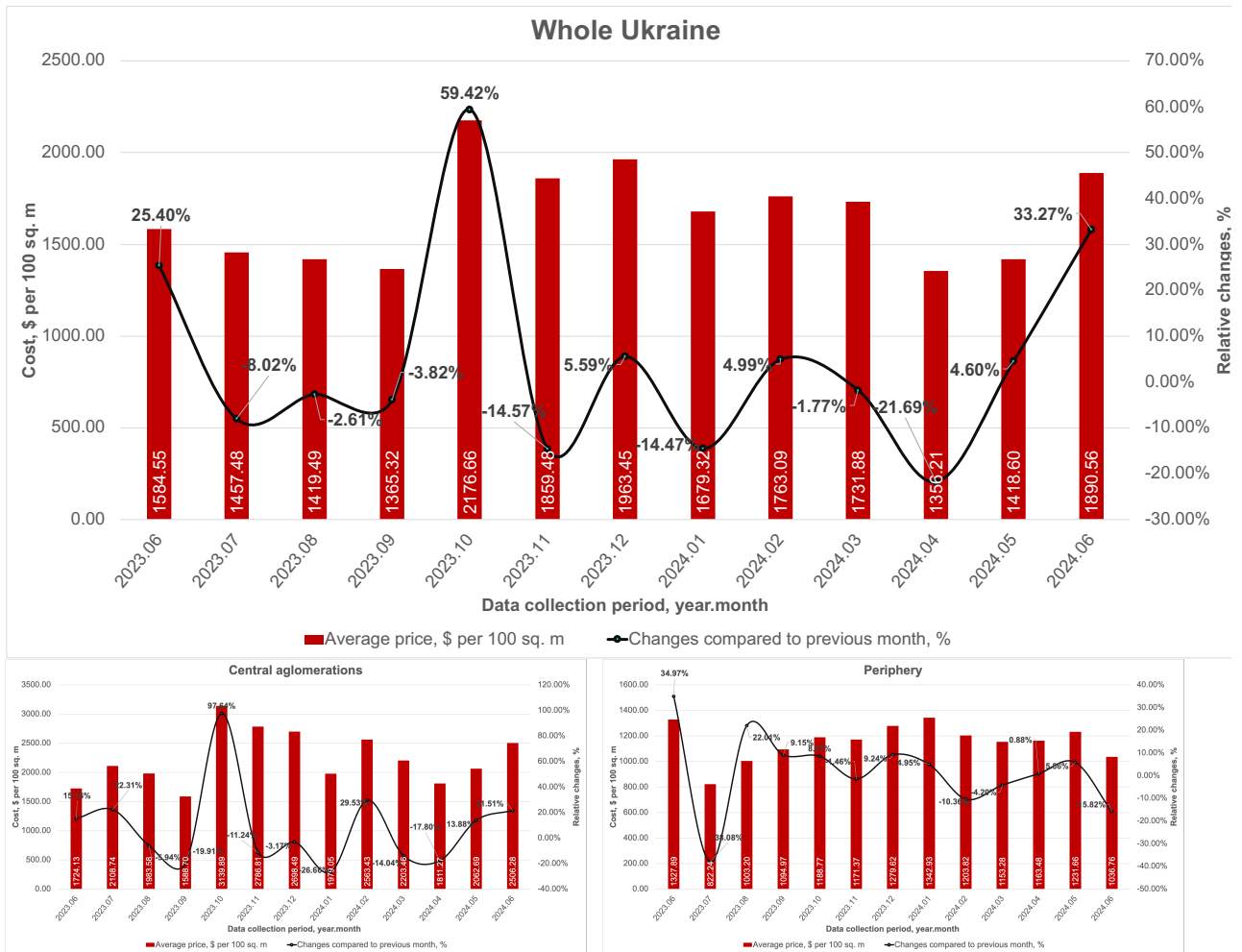


Fig. 2.11. Evolution of changes in the median value of the price per 100 m<sup>2</sup> of land plots on the residential land market in Ukraine as of June 2024

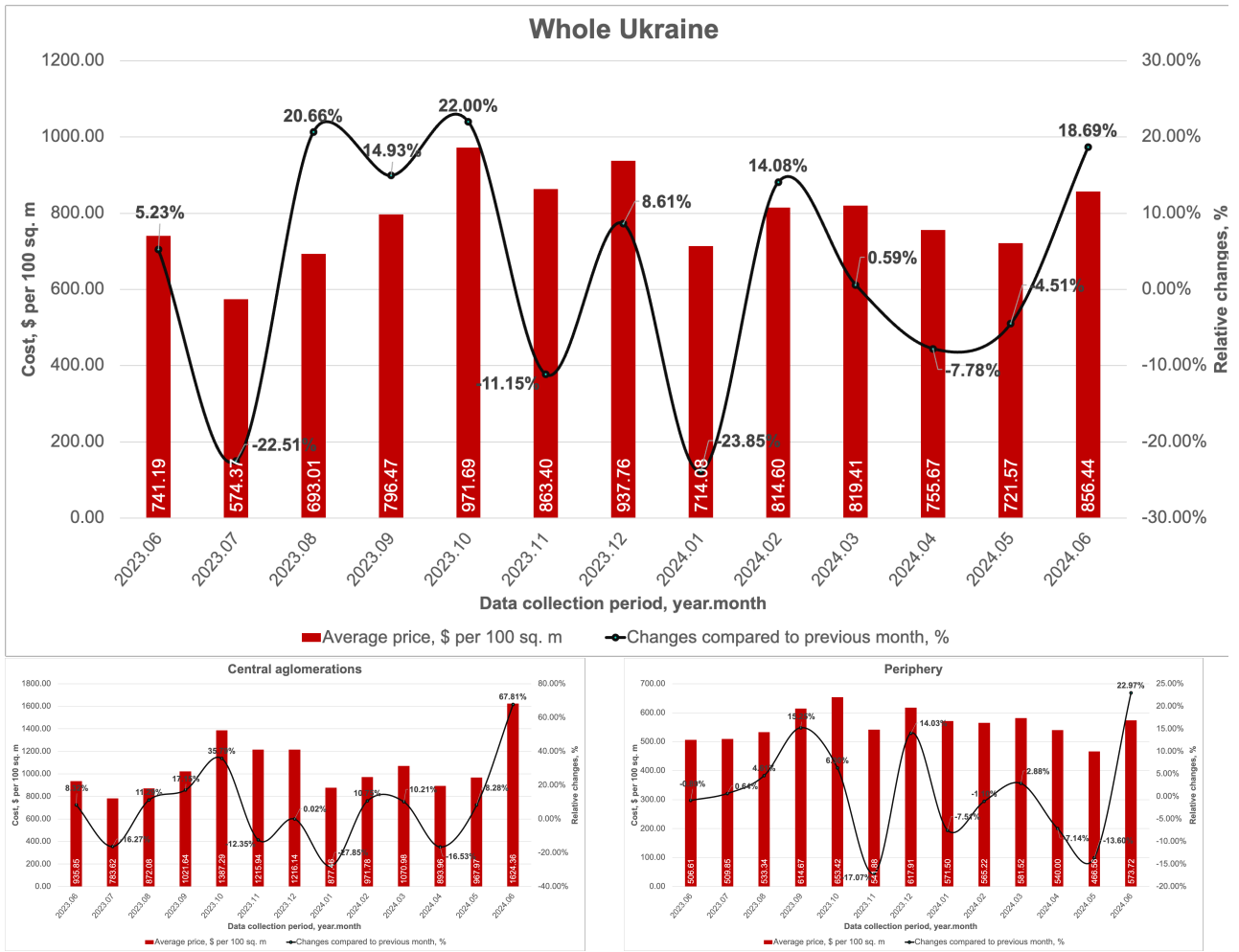


Fig. 2.12. Evolution of changes in the median value of the price per 100 m<sup>2</sup> of land holdings on the agricultural land market in Ukraine as of June 2024

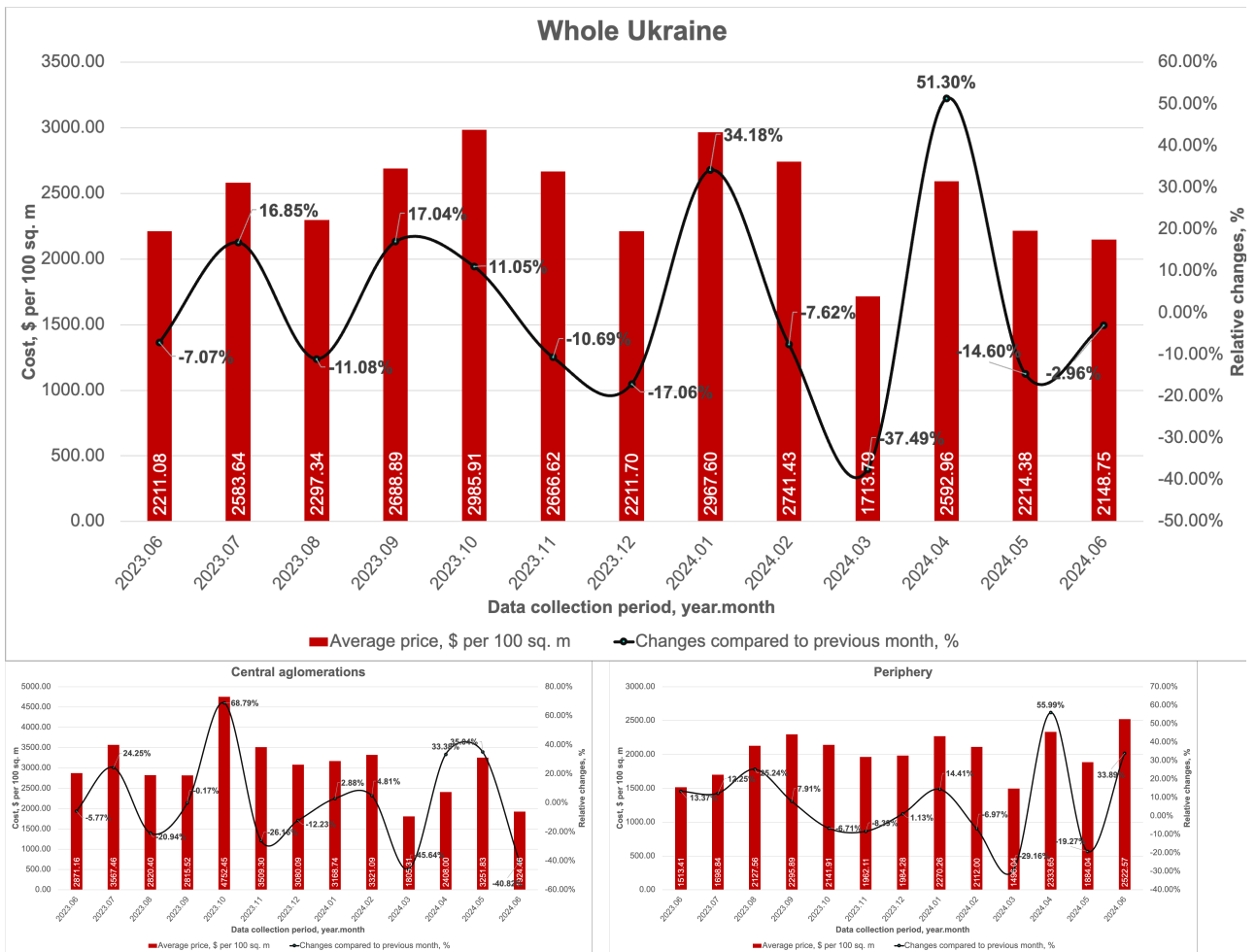


Fig. 2.13. Evolution of changes in the median value of the price per 100 m<sup>2</sup> of land holdings on the industrial land market in Ukraine as of June 2024

The dynamics of changes in the value of different categories of land plots, taking into account not only the median values of the costs, but also their spread, is shown in Fig. 2.14-2.15.

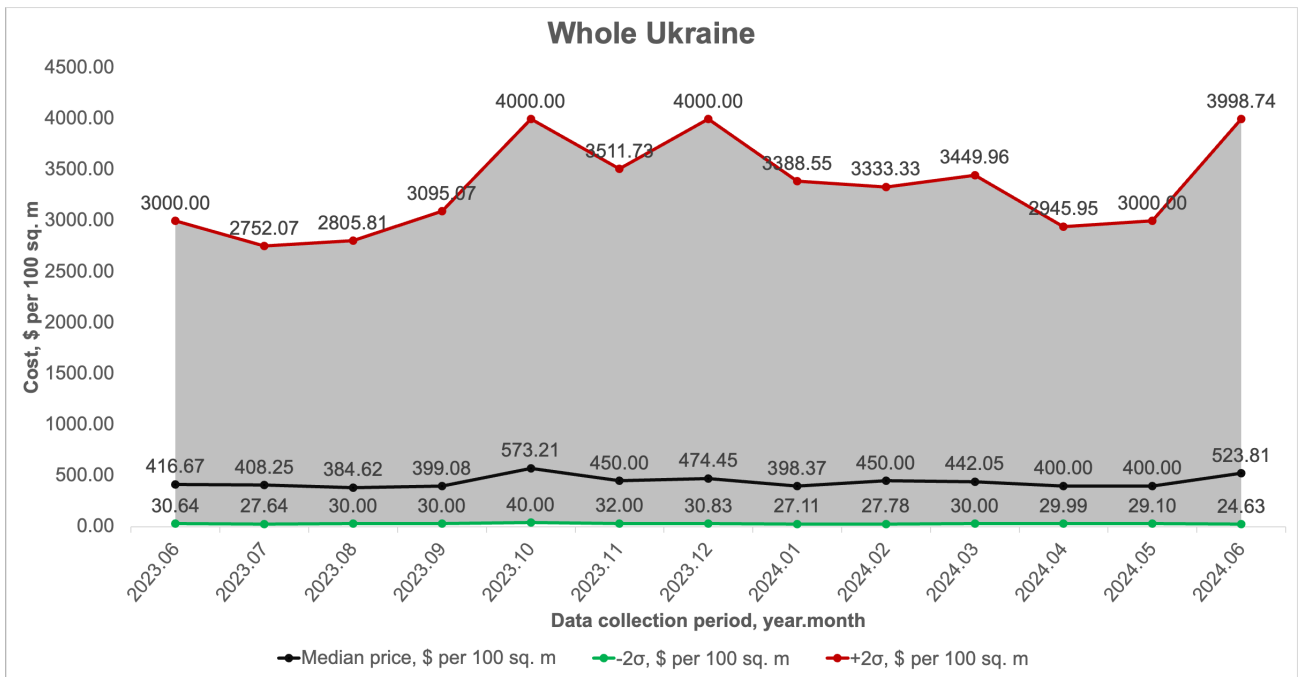


Fig. 2.14. Evolution of the median and marginal (95.46%) levels of the costs of 100 m<sup>2</sup> of land plots in Ukraine as of June 2024 (Generalized sample)

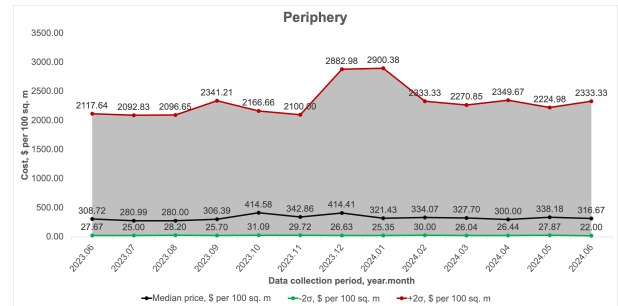
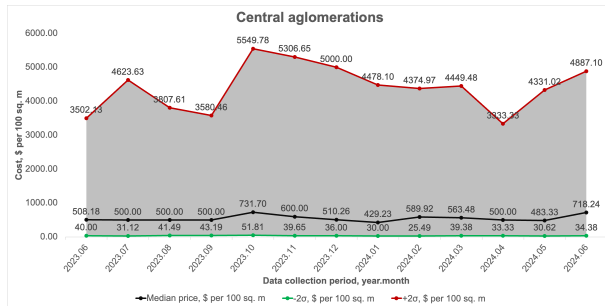


Fig. 2.15. Evolution of the median and marginal (95.46%) levels of the costs of 100 m<sup>2</sup> of land plots in Ukraine as of June 2024

The information base of the land market allows for the analysis of the impact of significant price-forming factors. To conduct a comprehensive analysis of the market for land plots in Ukraine, it is essential to determine the median price per square meter depending on the type of soil, location, natural surroundings, and land use method (Table 2.5 – 2.8).

*Table 2.5. Parameters of the cost of 100 sq. m of land as of June 2024, depending on the location*

Location	Average	Amount of offers	Coef. of variation, %	Median ( $\mu$ )	Lower confidence limit interval	Upper confidence limit interval
Outside the settlement	1718.37	363	1.17	800.00	47.95	13347.27
In the village	1413.42	263	0.81	833.33	96.07	7228.52
In the hamlet	1281.17	9	0.93	900.00	82.69	9796.11
In the dacha cooperative	1814.91	54	0.88	1047.92	104.97	10459.14
In the gardening community	2354.54	62	0.87	1291.67	132.19	12607.65
In the populated area	3498.75	2471	0.98	1585.37	130.70	19230.41
In the cottage town	5454.98	180	0.96	3000.00	256.59	35074.94

*Table 2.6. Parameters of the cost of 100 sq. m of land as of June 2024, depending on the soil*

Soil	Average	Amount of offers	Coef. of variation, %	Median ( $\mu$ )	Lower confidence limit interval	Upper confidence limit interval
Black soil	3095.99	31	0.89	1916.67	187.04	19640.49
Argillaceous	2699.31	2070	1.02	1099.18	85.27	14168.81
Sandy	2424.79	145	0.75	1400.00	185.08	10590.25
Stony	3677.95	163	1.09	2000.00	135.52	29515.35

*Table 2.7. Parameters of the cost of 100 sq. m of land as of June 2024, depending on the natural environment*

Natural environment	Average	Amount of offers	Coef. of variation, %	Median ( $\mu$ )	Lower confidence limit interval	Upper confidence limit interval
River	1516.68	9001	1.13	625.00	39.80	9815.55
Forest	1537.10	12431	1.12	666.67	43.22	10283.08
Reservoir	1618.46	1297	1.15	686.67	42.23	11166.00
Hills	1523.60	3498	1.15	700.00	43.16	11354.07
Lake	1717.26	7114	1.11	714.29	47.29	10788.59
Mountains	1446.62	2149	1.17	801.65	47.65	13485.34
Park	3372.38	2931	1.33	1229.95	57.80	26173.66
Islands	2914.43	302	1.26	1408.34	72.87	27215.64
Sea	5834.05	597	1.33	2142.86	100.88	45517.96

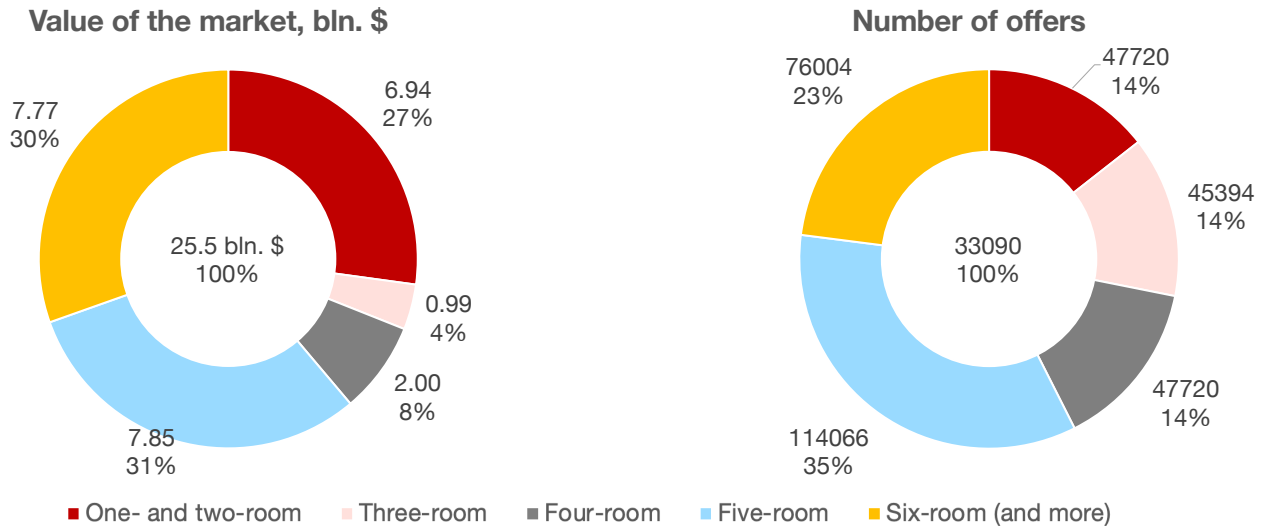
*Table 2.8. Parameters of the cost of 100 sq. m of land as of June 2024, depending on the purpose of use*

<b>Purpose</b>	<b>Average</b>	<b>Amount of offers</b>	<b>Coef. of variation, %</b>	<b>Median (<math>\mu</math>)</b>	<b>Lower confidence limit interval</b>	<b>Upper confidence limit interval</b>
<b>Cellar</b>	1502.43	1765	1.14	555.56	34.92	8838.75
<b>Barn</b>	1790.69	2371	1.16	666.67	40.30	11028.63
<b>Outbuildings</b>	2479.15	2438	1.26	833.33	42.90	16188.23
<b>House</b>	2671.90	4198	1.32	857.14	40.68	18061.70
<b>Foundation</b>	2266.29	2415	1.08	940.00	65.43	13505.53
<b>Vegetable garden</b>	2552.84	504	1.01	1000.00	78.66	12712.84
<b>Orchard</b>	3299.72	525	1.12	1240.74	80.07	19227.02
<b>Building materials</b>	4446.61	125	1.20	1873.75	106.79	32877.93



### 3. INFORMATION AND ANALYTICAL UNIT OF THE HOUSEHOLD MARKET

As of the end of June 2024, the total information base of the home ownership market is more than 139,000 unique offers. Analyzing the volume of the market, which falls on different categories of rooms, you can see a high financial capacity, which is more than 25.5 billion dollars. USA (Fig. 3.1).



*Fig. 3.1. Volume of the household market in Ukraine as of June 2024*

The total number of existing offers for sale in the first half of 2024 amounted to 33,024 houses (Fig. 3.1). The largest share of offers for sale is for five- and six-room houses, which account for 35% and 23% of the total number of houses offered for sale, respectively. The shares of one-, two-, three-, and four-room offers are evenly distributed, each reaching 14%.

In monetary terms, the volume of the secondary housing market in Ukraine as of June 2024 amounted to over 125 billion USD (Fig. 3.1). The largest shares are for five-, six-, one-, and two-room offers—31%, 30%, and 27%, respectively. The share of four-room houses in monetary terms is 8%, and three-room houses account for 4%.

Market volume indicators in Ukraine for the period 2022-2023 allow for an analysis of how various factors influenced market activity (Figures 3.2, 3.3). There was a decline from the beginning of 2022 due to political and economic instability in the country. Until June 2023, the market situation was relatively stable, and from August onwards, a recovery period began after the shock in 2022. Obviously, the onset of full-scale war was the cause that disrupted the

market. Currently, the indicators are still far from the pre-war level, but positive dynamics are present.

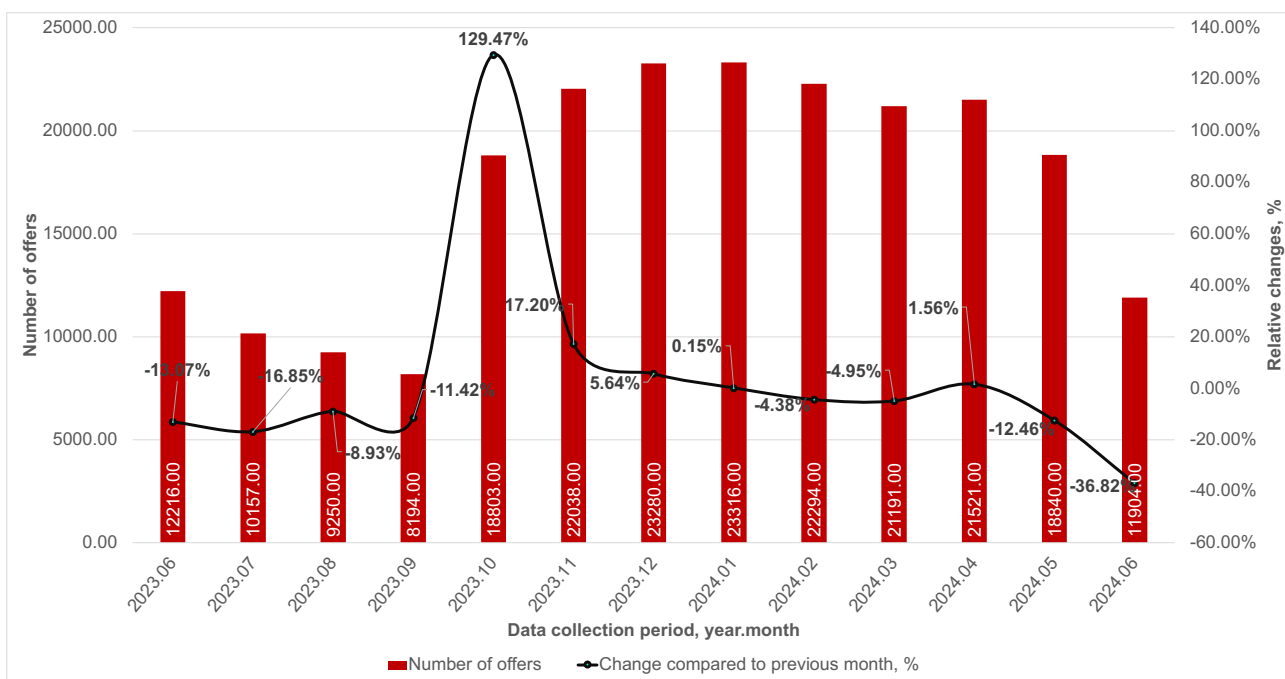


Fig. 3.2. Evolution of the number of offers on the secondary household market in Ukraine, 2023-2024

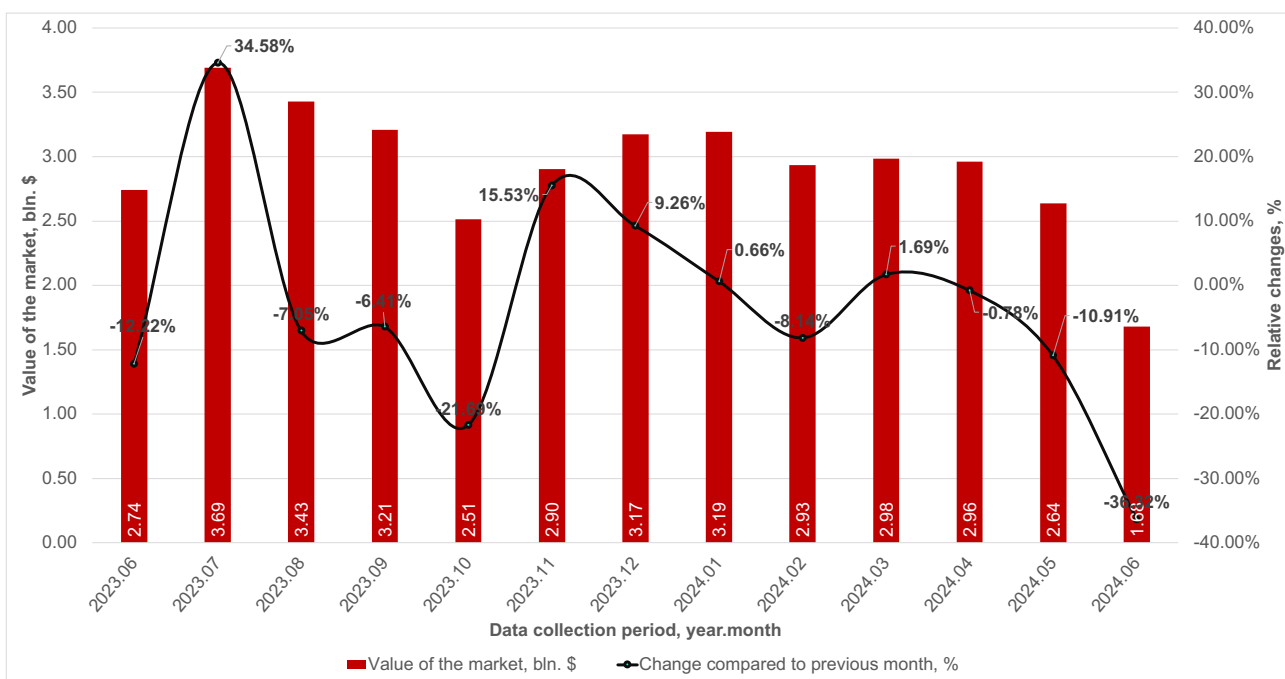


Fig. 3.3. Evolution of the value of the secondary household market in Ukraine, 2023-2024

The conducted statistical analysis, performed using the most powerful significance criteria, demonstrated that the distribution of prices on the housing market is also subject to the log-normal distribution law (Fig. 3.4, 3.5).

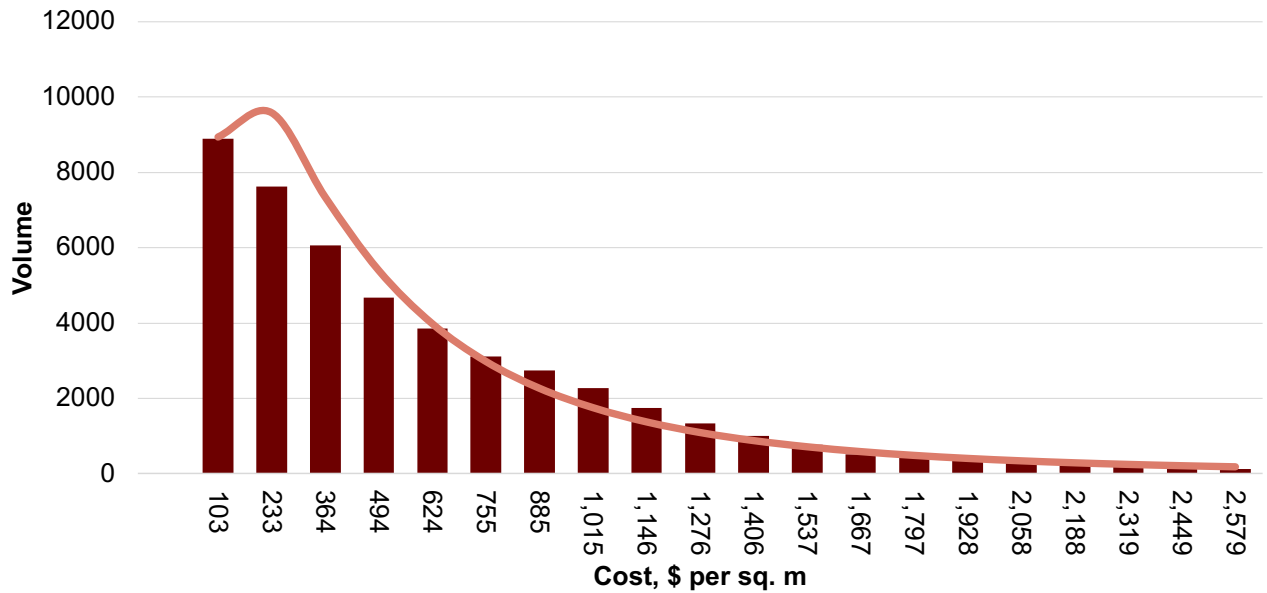


Fig. 3.4. Density distribution cost of 1 m<sup>2</sup> on the secondary household market of Ukraine as of June 2024

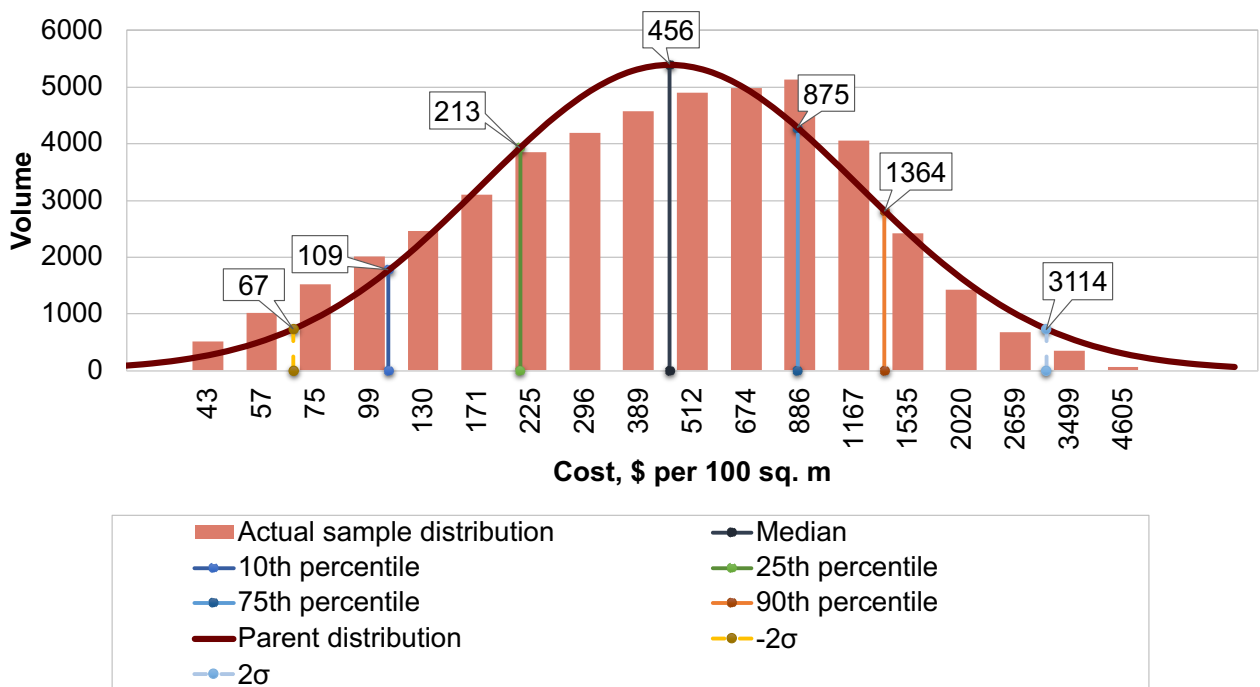


Fig. 3.5. Description of the density distribution of the cost of 1 m<sup>2</sup> on the secondary household market of Ukraine as of June 2024 according to the log-normal distribution law

Thus, compliance with the log-normal distribution law is confirmed for all considered categories of real estate, including apartments, land plots of any purpose, and home ownership. This opens up the possibility of applying a single methodology for processing the primary information database for these real estate groups.

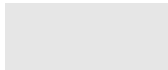
Below are summarized data on the cost distribution parameters of 1 square meter. of households for all regions without exception, which includes not only the average and median values, but also the level of their dispersion and variation, which fully describes the probabilistic and statistical parameters of these distributions (Table 3.1).

*Table 3.1. Parameters of cost distribution 1 m<sup>2</sup> of secondary household market in regional centers of Ukraine as of June 2024*

Region	Amount of offers	Median ( $\mu$ )	Average	S <sub>lg</sub> ( $\sigma$ )	Coefficient of variations	Lower confidence limit interval	Upper confidence limit interval
Vinnytsia region	153.44	220.76	0.36	0.59	29.15	807.79	153.44
	583.33	632.36	0.37	0.60	108.37	3139.93	583.33
Volyn region	160.15	236.91	0.33	0.53	35.10	730.61	160.15
	559.54	616.95	0.30	0.48	140.71	2225.02	559.54
Dnipropetrovsk region	247.19	408.34	0.41	0.69	37.54	1627.87	247.19
	480.75	582.90	0.33	0.53	105.55	2189.65	480.75
Donetsk region	112.90	175.13	0.32	0.51	25.99	490.45	112.90
	198.72	249.66	0.30	0.48	49.92	791.10	198.72
Zhytomyr region	145.33	212.89	0.35	0.57	29.29	721.16	145.33
	367.65	469.08	0.36	0.58	71.31	1895.40	367.65
Transcarpathian region	327.78	403.03	0.26	0.40	101.24	1061.18	327.78
	657.89	753.03	0.27	0.43	186.83	2316.68	657.89
Zaporizhzhia region	233.33	288.69	0.27	0.42	68.44	795.53	233.33
	470.59	524.12	0.24	0.37	157.15	1409.18	470.59
Ivano-Frankivsk region	241.45	331.23	0.30	0.48	61.13	953.70	241.45
	475.50	584.17	0.31	0.51	111.72	2023.85	475.50
Kyiv region	718.39	947.07	0.38	0.62	127.60	4044.63	718.39
	900.00	1026.00	0.30	0.48	225.71	3588.68	900.00
Kirovohrad region	121.21	170.52	0.36	0.59	23.25	631.91	121.21
	320.00	412.86	0.36	0.58	62.07	1649.77	320.00
Lviv region	249.17	351.11	0.34	0.54	53.18	1167.47	249.17
	524.19	649.98	0.34	0.55	108.81	2525.37	524.19
Mykolaiv region	145.71	195.99	0.33	0.53	31.99	663.70	145.71
	317.14	383.50	0.29	0.47	81.60	1232.59	317.14
Odesa region	344.46	425.86	0.33	0.54	74.58	1591.01	344.46
	773.10	980.50	0.34	0.55	163.76	3649.91	773.10
Poltava	156.83	235.02	0.36	0.58	30.29	812.19	156.83
	391.30	505.14	0.33	0.54	83.91	1824.77	391.30
Rivne region	174.42	237.55	0.32	0.51	40.55	750.17	174.42
	526.32	598.77	0.31	0.49	127.67	2169.74	526.32

Sumy region	98.26	135.29	0.32	0.52	22.36	431.77	98.26
	281.12	362.10	0.37	0.60	51.85	1524.10	281.12
Ternopil region	150.00	190.86	0.29	0.46	40.00	562.55	150.00
	344.63	405.16	0.30	0.48	87.49	1357.53	344.63
Kharkiv region	242.42	316.78	0.34	0.55	51.43	1142.76	242.42
	441.18	538.80	0.33	0.53	96.49	2017.28	441.18
Kherson region	132.71	143.30	0.24	0.38	43.38	405.98	132.71
	466.67	492.36	0.18	0.28	204.61	1064.39	466.67
Khmelnyskyi region	127.27	190.52	0.35	0.56	25.83	627.00	127.27
	444.44	512.86	0.34	0.55	93.65	2109.18	444.44
Cherkasy region	114.04	184.17	0.35	0.57	22.59	575.75	114.04
	261.90	393.64	0.38	0.63	45.17	1518.52	261.90
Chernivtsi region	225.00	291.14	0.30	0.48	56.10	902.44	225.00
	586.51	663.58	0.33	0.53	130.09	2644.28	586.51
Chernihiv region	99.41	143.43	0.34	0.55	20.65	478.61	99.41
	240.25	311.30	0.36	0.59	45.67	1263.79	240.25
Luhansk region	150.54	183.81	0.27	0.43	43.60	519.84	150.54

 Up to 10 km

 From 10 to 50 km

In addition to this general picture, the information base of the land market allows for the analysis of the impact on the value of the most important price-forming factors. To carry out a comprehensive analysis of the home ownership market in Ukraine, it is necessary to determine the median price per square meter depending on the type of home ownership and location (Table 3.2).

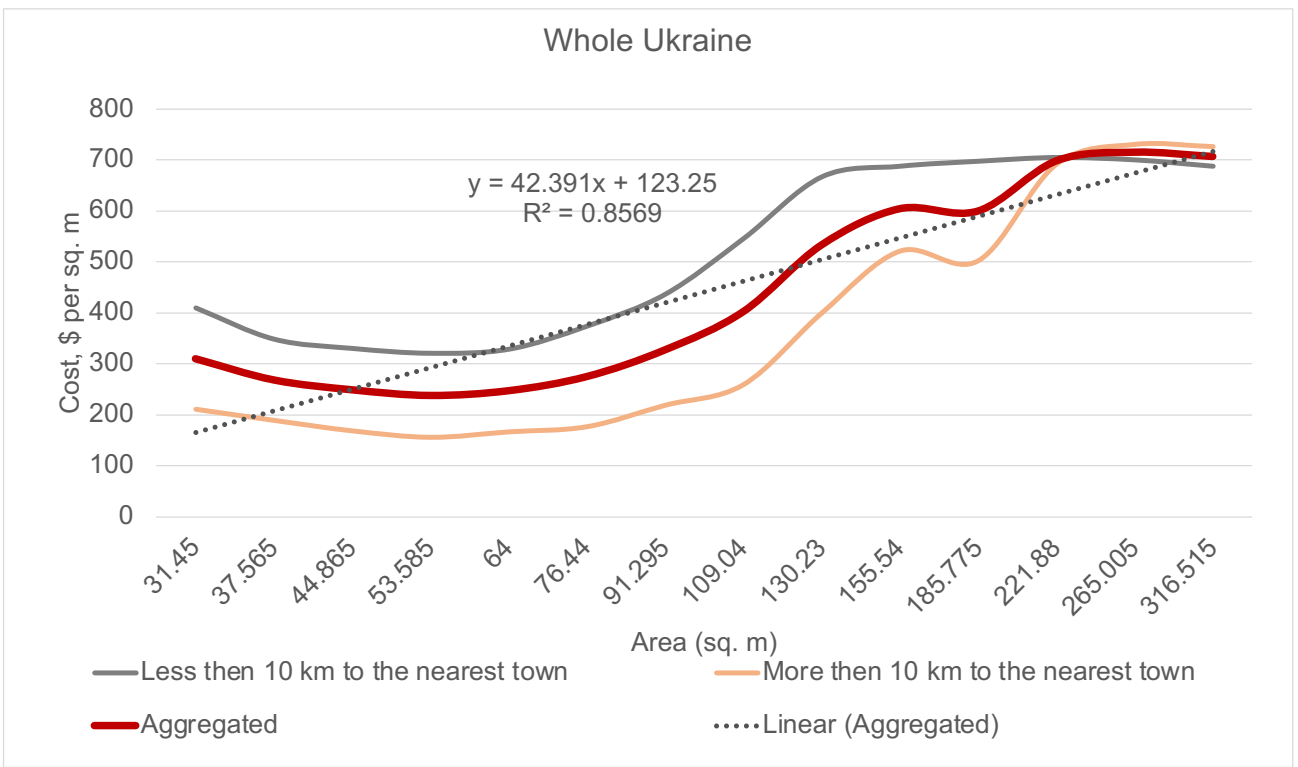
*Table 3.2. Dependence of the median cost on the category of home ownership*

Sample	Type of home ownership	Distance to the nearest city	Median cost, \$/m <sup>2</sup>	Absolute difference from the baseline, \$/m <sup>2</sup>	Relative difference from baseline, %
Whole Ukraine	House	All	309.52	-	-
		From 10 to 50 km	154.71	-154.81	-0.50
		Up to 10 km	747.34	437.82	1.41
	Cottage	All	382.35	-	-
		From 10 to 50 km	498.39	116.04	0.30
		Up to 10 km	382.35	0.00	0.00

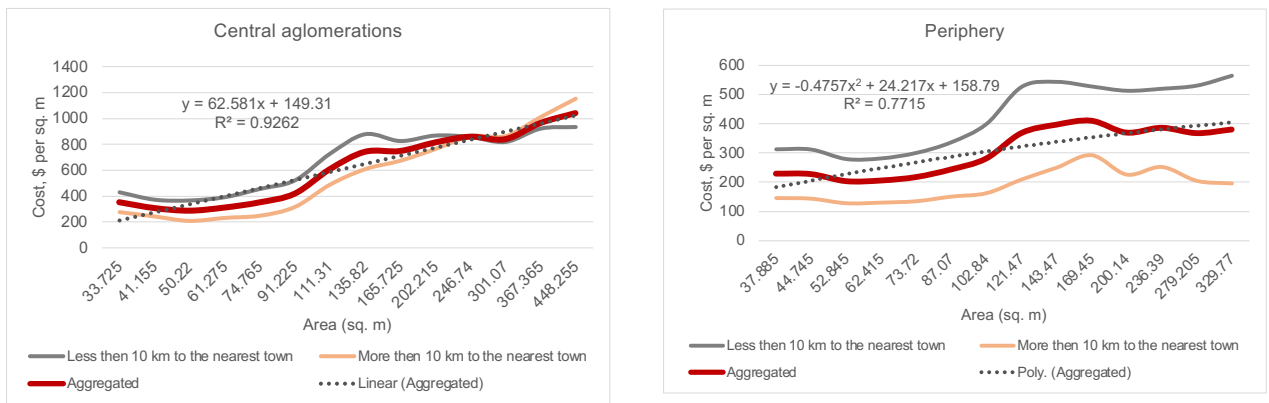
<b>Central agglomerations</b>	<b>House</b>	All	487.68	-	-
		From 10 to 50 km	333.33	-154.35	-0.32
		Up to 10 km	592.59	104.91	0.22
	<b>Cottage</b>	All	230.77	-	-
		From 10 to 50 km	212.48	-18.29	-0.08
		Up to 10 km	250.00	19.23	0.08
<b>Periphery</b>	<b>House</b>	All	214.29	-	-
		From 10 to 50 km	133.33	-80.96	-0.38
		Up to 10 km	287.04	72.75	0.34
	<b>Cottage</b>	All	144.45	-	-
		From 10 to 50 km	123.33	-21.12	-0.15
		Up to 10 km	171.23	26.78	0.19

The dependence of the cost of 1 square meter of home ownership on the total area and agricultural plots is shown in fig. 3.6 - 3.7.

The resulting quantitative equations, which provide an approximation of these empirical dependencies, make it possible to use them to make a direct adjustment when comparing the value of analogues and evaluation objects existing on the market.



**Fig. 3.6. Dependence of the cost of 1 sq. m of households from their total area (all of Ukraine)**



**Fig. 3.7. Dependence of the cost of 1 sq. m of households from their total area (depending on the location)**

