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HEDONIC PRICE TRENDS FOR THE SECONDARY HOUSING MARKET IN MOSCOW AND MOSCOW OBLAST

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This article presents an assessment of the trends in quality-adjusted (hedonic) prices in the secondary housing market of Moscow and the Moscow oblast from June 2025 to June 2026. Unlike a simple analysis of average or median prices, the hedonic approach allows for an assessment of changes in the value of comparable housing by controlling changes in the supply structure – such as floor area, location, number of stories, condition of the properties, and other characteristics.

According to the assessment findings, the nominal hedonic index for the secondary housing market rose from 100.0 in June 2025 to 111.9 in June 2026, corresponding to an annual increase of +11.9%. When compared with consumer price trends in Moscow, the real increase in prices for the secondary housing market is estimated at approximately +7.1%. Thus, during the period under review, qualitatively-comparable housing rose in price noticeably faster than the general level of consumer prices.

The resulting trajectory indicates a moderately upward but uneven trend in price dynamics. The most pronounced growth occurred in December 2025 – January 2026 and April 2026. Corrective declines were observed in certain months. This pattern is consistent with changes in the macroeconomic environment, including the easing of monetary conditions and the gradual recovery of interest-rate-sensitive demand.

Relevance of the study

The housing market is of systemic importance to the economy: real estate serves simultaneously as a durable good, an investment asset, collateral in the financial system, and an indicator of household expectations. Therefore, an accurate assessment of housing price trends is important not only for market participants but also for analyzing inflationary processes, financial stability, investment activity, and the well-being of the population.

However, a direct comparison of average apartment prices over time is not a sufficient analytical tool. The observed average price may change not because comparable housing is becoming more expensive, but due to changes in the composition of the supply. For example, an increase in the share of apartments in more expensive neighborhoods, units with better renovations, or larger apartments can mechanically raise the average price. Similarly, an increase in the share of less liquid or remote properties can create the illusion of falling prices even when the value of comparable housing remains stable or is rising.

Consequently, to meaningfully assess market dynamics, it is necessary to separate the actual price effect from structural changes in the sample of listings. This task is addressed by the hedonic approach, in which a property's price is viewed as a function of its observable characteristics.

Methodology

The Hedonic price model

Gradient boosting over decision trees, as implemented in CatBoost,[1] is used as an evaluation tool. This approach was chosen because the housing market is characterized by pronounced nonlinearities and complex interactions among factors. The impact of square footage, floor level, distance from the city center, or proximity to the metro is rarely linear or uniform across all segments. For example, the effect of proximity to the metro can vary significantly between Moscow and Moscow oblast, while the premium for the quality of renovations may depend on the neighborhood, the property class, and the apartment's square footage.

CatBoost allows for flexible accounting of such interactions without the need to specify them manually in advance, making the model more adaptive compared to classical linear hedonic regression.

Fixed basket and selection of the net time effect

The fixed basket procedure is used to calculate the index. Within each month, the observations are divided into training and test samples in an 80/20 ratio. The training sample is used to estimate the model, while the test sample serves as a fixed basket of objects.

Next, counterfactual forecasts are generated for this fixed basket: the characteristics of the properties remain unchanged, while the time factor sequentially takes on the values of each month in the study period. The average forecast price for the basket is interpreted as an estimate of the price level for housing of comparable quality in the corresponding month.

June 2025 is taken as the base month; the index value for that month is normalized to 100. This approach allows the resulting index to be interpreted as the price dynamics for a comparable set of properties, rather than as a result of changes in the composition of listings.

Data

The analysis was based on a dataset of 72,230 listings for apartments for sale on the secondary market in Moscow and the Moscow oblast over a 13-month period – from June 2025 to June 2026.

The dataset includes a wide range of property characteristics:

- Geometric parameters: total and living area, number of rooms, floor level, number of stories in the building.
- Qualitative characteristics: condition of the apartment, type of renovation, building material.
- Spatial characteristics: administrative district, distance to the city center, distance to the nearest metro station, and other location-based characteristics.

1 Categorical Boosting is a high-performance open-source machine learning library from Yandex. It implements the gradient boosting algorithm on decision trees and is one of the global standards for working with tabular data.

- Temporal factor: the month the listing was posted or when it was last updated.

Using this detailed set of characteristics allows us to account for a significant portion of the differences between properties and thereby obtain a more meaningful assessment of price dynamics than when analyzing aggregated average values.

Nominal dynamic of hedonic index

Between June 2025 and June 2026, the nominal hedonic index rose from 100.0 to 111.9. The total increase was +11.9%.

Table 1

Dynamics of the nominal hedonic index from June 2025 to June 2026

Period	Index	Δ m/m, %
2025-06	100.0	–
2025-07	102.2	+2.2
2025-08	103.0	+0.8
2025-09	102.0	-1.0
2025-10	104.2	+2.2
2025-11	104.7	+0.4
2025-12	107.2	+2.4
2026-01	109.0	+1.7
2026-02	107.0	-1.8
2026-03	106.0	-0.9
2026-04	113.3	+6.8
2026-05	113.3	+0.0
2026-06	111.9	-1.3

Source: Own calculations.

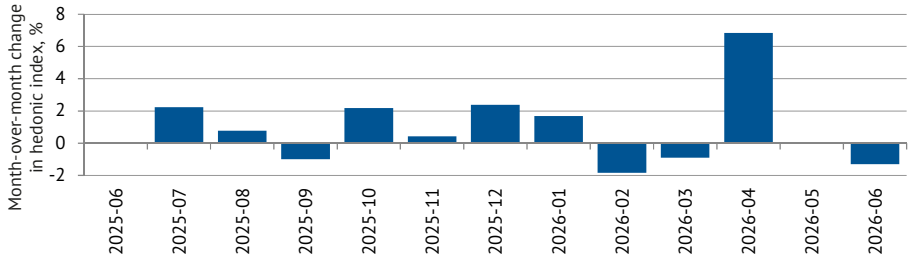

Fig. 1. Month-over-month change in the hedonic index, %

Source: Own calculations.

The index's performance was uneven. Following an increase in July-August 2025, a moderate correction was observed in September. The index then resumed its upward trend, particularly in October-December 2025 and January 2026. In February-March 2026, there was a decline, however, a sharp increase in the index was recorded in April. In May, the index stabilized, and in June, it corrected slightly downward.

Actual price dynamic: comparison with the CPI

To assess actual trends, the nominal hedonic index is compared with consumer price indexes. The CPI for Moscow is used as the primary deflator, since the core

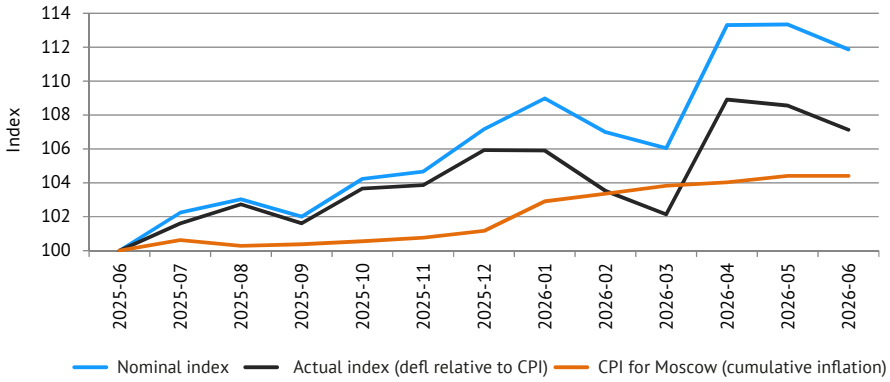

Fig. 2. Nominal and actual price dynamic against CPI for Moscow (base: June 2025 = 100)

Source: Own calculations.

of the market under analysis is linked specifically to the Moscow metropolitan area.

According to data available as of May 2026, the hedonic index reached 113.34 points, while the cumulative CPI for Moscow stood at 104.41 points. This means that in real terms, adjusted for the Moscow CPI, prices for comparable existing housing had risen by approximately +8.6% by May 2026.

A hedonic index of 111.9 is used for the final estimate for June 2026. Since the publication of the CPI for the most recent month may be delayed, the real estimate for June is based on the latest available or estimated value of the deflator. With cumulative inflation in Moscow at about +4.4%, the real increase in prices for existing housing over the period from June 2025 to June 2026 amounts to about +7.1%.

Thus, the rise in prices for qualitatively comparable existing housing significantly exceeded the rise in consumer prices. This means that housing became more expensive during the period under review not only in nominal terms but also in real terms.

Comparison with the official Rosstat indexes

The resulting trends were further compared with Rosstat's official price indexes for the secondary housing market in Moscow and Moscow oblast. To ensure comparability, the quarterly growth rates, published on a "quarter-over-quarter" basis, were converted to a base index and standardized to a common base – June 2025 = 100. For visual comparison with the monthly hedonic index, quarterly increases are distributed evenly within each quarter using a geometric method.

Over the period from June 2025 to Q1 2026 – that is, through the most recently published quarter – the official index for the resale housing market rose by approximately +1.2% in Moscow and +3.4% in the Moscow oblast. This is significantly lower than the estimate derived from the hedonic index of listings.

The key difference between the two data series lies primarily in the measurement methodology. The hedonic index assesses price dynamics for housing of comparable quality by controlling for property characteristics: square footage, number of stories, condition, location, distance from the city center and the metro, as well as other parameters affecting value. In this way, it isolates the actual price effect from changes in the structure of supply.

Rosstat's official indexes, by contrast, are more aggregated statistical indicators. They reflect market dynamics as a whole but are less effective

Hedonic price trends for the secondary housing market

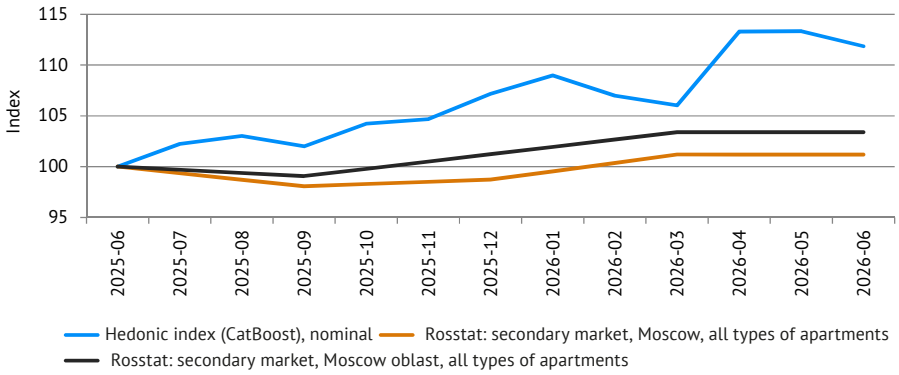

Fig. 3. Hedonic Index compared with Rosstat's official indexes (secondary market, Moscow and the Moscow oblast, all apartment types; all indexes: June 2025 = 100, quarterly data broken down by month with evenly distributed growth)

Source: Own calculations.

at separating price changes from changes in the composition of properties included in the survey. If the composition of housing for sale changes over time – for example, the share of properties in more expensive neighborhoods, apartments with better features, or, conversely, less liquid inventory – the aggregated index may smooth out or distort the actual price dynamics for comparable properties.

This is precisely why the hedonic index provides a more meaningful assessment of net price dynamics. A higher rate of growth in this index indicates that, after controlling for housing quality and market composition, there has been a noticeable increase in the prices of comparable properties. In this sense, the discrepancy with official indexes is not a shortcoming of the assessment but reflects the advantage of the hedonic approach: it allows us to see the part of price dynamics that may be hidden in aggregated indicators.

Macroeconomic context

One of the factors that may explain the rise in actual housing prices is the change in monetary conditions. During the period under review, the Bank of Russia began a cycle of key rate cuts: from 21.00% per annum as of June 2, 2025, to 14.25% as of July 3, 2026 – a decrease of approximately 6.75 p.p.

A reduction in the key rate affects the housing market through several channels. First, it gradually lowers the cost of borrowing and improves access to mortgage loans. Second, a decline in the yields on conservative financial instruments can increase the relative attractiveness of real estate as an investment asset. Third, the easing of monetary conditions can support market participants' expectations regarding future housing demand and liquidity.

In the secondary market, where supply is relatively inelastic and cannot expand rapidly in response to rising demand, improved financing conditions can primarily translate into price increases. This is particularly noticeable in large metropolitan areas, where the supply of high-quality properties in liquid locations is limited.

However, the relationship between the key interest rate and housing prices is neither mechanical nor immediate. Market dynamics are also influenced by household incomes, mortgage programs, sellers' expectations, the structure of supply, seasonality, and local demand patterns. Therefore, a rate cut should be viewed not as the sole explanation for the index's growth, but as an important

element of the macroeconomic backdrop that strengthens demand-side support for the market.

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The resulting hedonic index shows that, during the year under review, the value of comparable existing housing in Moscow and the Moscow oblast grew faster than consumer inflation. This means that the observed price increase is not solely attributable to changes in the composition of properties listed for sale: after controlling for key apartment characteristics, a pronounced positive time effect remains.

At the same time, the results should be interpreted with methodological limitations in mind. The model takes into account only the observable characteristics of the properties. Unobservable factors – such as the quality of the building's entrance, the view from the window, the property's legal status, the urgency of the sale, and the bargaining power of the parties – may be partially excluded from the model. The index reflects the average trend across the analyzed sample and does not replace an individual assessment of a specific property.

Nevertheless, the use of a large dataset and a hedonic model based on CatBoost allows for a stable and timely assessment of price trends, adjusted for a significant portion of structural changes in supply.