

# Structural and Pricing Disproportions in the Housing Investment Market: Factor Analysis and Impact Evaluation

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**Abstract**— The article presents the results of studying the housing investment market as a location-, structurally, and dynamics-specific market that occupies a special place in the market economy. The research is aimed at identifying the market disproportions in the housing investment market as a manifestation of market imbalances, as well as at analyzing the factors and evaluating the socio-economic impact for the market under analysis and for the economy in general. The research is based on the basic industrial and regional market theories as well as on the theory of housing economy. Research data is sourced from the statistics collected by Russian and foreign statistics agencies. We herein demonstrate the disproportions existing in the housing investment market, classify them, and identify their respective causal factors.

**Keywords**— *Housing Investment Market, Structural Disproportion, Price imbalances.*

## I. INTRODUCTION

### A. Housing Investment Market and Its Distinctive Features

In the system of national commodity markets, of special importance is the housing investment market, which is the set of socio-economic relations in the field of housing reproduction. This market features such relations as the production, distribution, exchange, use, and renovation of residential property.

The distinctive feature of this market is that it covers a complex system of economic relations existing in the capital (financial) market, the construction market, and the real estate market, see Fig. 1. This is due to the fact that housing is a subject of market relations; as such, it takes different commodity forms specific to the stage of the reproduction cycle.

The economic actors of the housing investment market are the actors involved in the capital market, the construction market, and the real estate market. In the capital market, sellers are the investors that finance housing construction through their own or borrowed funds: natural (private) persons (households) or legal persons.



Fig. 1. Housing Investment Market in the interaction with Capital Market, Construction Market and Real Estate Market

Developers or construction companies that initiate investment projects buy such investment in the form of financial resources. In the construction market, these persons swap their roles: natural (private) persons (households) or legal persons act as customers to buy the property under construction, while the developer/contractor carrying out construction projects at its investment stage acts as the seller. In the real estate market, where relations arise from the purchase and sale of the existing property or space, property can be sold by both the developer behind the construction project, or by a person owning this property, including persons who acquired the right to this property while under construction, see Fig. 2.

Each of these markets is involved with the adjacent markets. According to the Competition Assessment Guidelines of the Council of the Eurasian Economic Commission [1], adjacent markets are markets where spare parts, raw materials, and sundry resources necessary for production are traded, or markets which serve as the intermediate markets between the producer and the consumer.

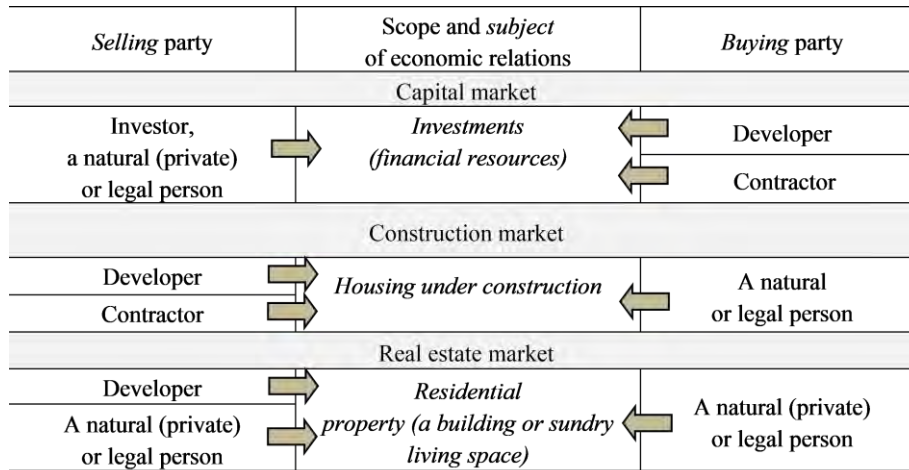


Fig. 2. Relations in the Capital Market, Construction Market and Real Estate Market

**B. Role of Housing Investment Market in the National Economy**

The subject of economic relations in the market under analysis is the renovation/exchange-type housing investments serving as reproduction drivers in the housing sector.

Housing reproduction enables satisfaction of the most important needs of individuals and society in general, that is the need for shelter; it is also the most important factor of sustainable and balanced urban and regional development. This is why the documents defining the strategic development of the Russian Federation [2, 3] state that the strategic objectives are to increase housing investment and construction values by at least 50%, to raise the average living space to 30 sq m per person or 100 sq m per family, to make sure that at least 50% of families have access to mortgage, and to increase the mortgage portfolio to 15-20% of the GDP. This will take the housing investment market to the levels characteristic of developed economies.

The role of housing investments in national and regional economies has been noted by numerous authors. The development of theory on the importance of housing investments has been well demonstrated by Godwin Arku, University of Western Ontario, Canada [4].

One important aspect of the role the housing investment market has to play in the national or regional economy is that housing investments have a multiplier effect. The greatest manifestations of this effect are observed in such crucial sectors of economy as construction, construction materials, trade and provision of personal services, and manufacture of machinery and equipment. The development and sustainable functioning of these sectors greatly depends on the investment activity in housing construction. According to the calculations made by the authors hereof [5], a single ruble of housing investments in the city's economy results in a 4-ruble increase in the gross value added. Paper [6] states a somewhat lesser multiplier; however, it also says that a £1 decrease in housing investments reduces the national economy's product by £3.51.

**II. DISPROPORTIONS IN THE HOUSING INVESTMENT MARKET**

While the housing investment market is of essence to the national economy, its vulnerability to crises should be borne in mind. Housing investments have a low threshold of sensitivity to the manifestations of economic instability. This is partially due to the market disproportions that are boosted in the times of crisis. The existence of such disproportions in the housing investment market is noted by many authors, in particular in [7]. The table 1 below presents a systematic overview of the primary disproportions pertaining to the housing investment market.

This is far from an exhaustive list of disproportions, which cannot be reasonably covered by a single paper. We believe that structural and price disproportions have to be covered in detail.

TABLE I. TYPES OF IMBALANCES IN THE HOUSING INVESTMENT MARKET AND THEIR MANIFESTATIONS

<b>Disproportions</b>	<b>Manifestations</b>
Structural	- deformation of the market structure - structural inconsistency of supply and demand
Reproduction	- imbalance of the housing investments in the new construction and in renovation (renovation of the existing residential property, maintaining its performance and normative conditions)
Pricing	- considerable region-by-region imbalance in the housing prices - construction costs rising faster than housing prices - prices in the market are imbalanced against the population's income
Quantitative	- supply does not cover need for housing - supply does not cover demand (a market imbalance)
Financial	- the bulk of investments in the market comes from the population, while business and governmental shares are insignificant - the market is subject to the pressure caused by the oversupply of financial resources in the banking system

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**III. STRUCTURAL DISPROPORTIONS**

We propose evaluating the structural disproportions in the housing market by analyzing the typological and reproductive structure of the market.

Primary market analysis by types of construction shows that the Russian market is dominated by apartment-block construction: in 2017, 46.2 million sq m of apartment-block residential space was constructed in the country, while for individual housing, the figure was only 33.0 million sq m, see Fig. 3. This is due to the historical development of the country's housing market, which was dominated by large-scale industrial residential construction during the times of planned economy.

Despite both types gradually coming close to each other in terms of new construction, apartment blocks still accounted for 58.3% of the living space commissioned in 2017, which contributes to no improvement of living conditions: with an average floorspace of 68.7 sq m per apartment in an apartment block under construction [9] and an average household of 2.8 persons [10], we have only 24.5 sq m per person. At the same time, countries with other construction standards boast better living conditions; for example, in France the average housing is 81.5 sq m, which results in 46.0 sq m per person; for Italy, the figures are 88.3 and 41.8 square meters, respectively [11].

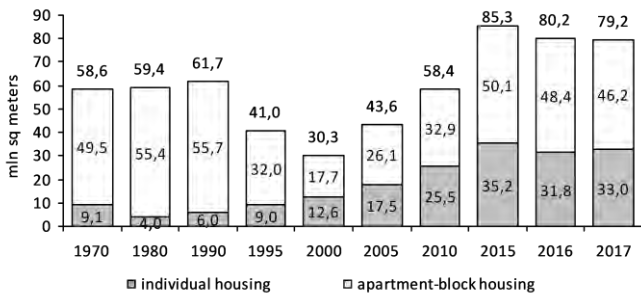


Fig. 3. Dynamics of residential property commissioning by type (plotted and calculated per [8]). Legend (left to right): mln sq meters of housing, grey – individual housing, white – apartment-block housing.

Analysis of primary/secondary market breakdown reveals a considerable disproportion, too, as according to our estimates, the primary market accounted for 79.2 million rubles of the total 205.7-million turnover, while the secondary market accounted for 126.5 million rubles in 2017 in Russia, see Fig. 4.

The observed trends of gradual equalization of these market subdivisions still testify an underdevelopment of the primary market; thus, it accounted for 29.2% of the total market in 2000, for 38.5% in 2017.

In turn, the domination of the existing residential property in the market is a result of low renovation volumes; thus, residential construction volumes only amounted to 2.4% of the existing residential property in 2016 [8, 13].

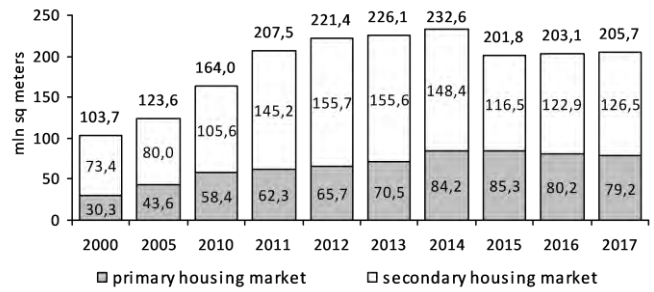


Fig. 4. Primary/secondary housing market breakdown for Russia (calculated per [9, 12, 13]). Legend: mln sq meters of housing, grey – primary housing market, white – secondary housing market.

Such insufficient renovation is also due to an imbalance in the use of various renovation approaches, as the analysis of housing-market reproduction structures reveals significant disproportions in Russia's renovation processes; thus, new construction covers 90% of the newly commissioned residential space, while overhauls account for 10% at max, and renovation for about 1% on average, see Fig. 5.

Such insufficiency of the commissioned renovated residential property is what causes the structural disproportions and the prevalence of the secondary market.

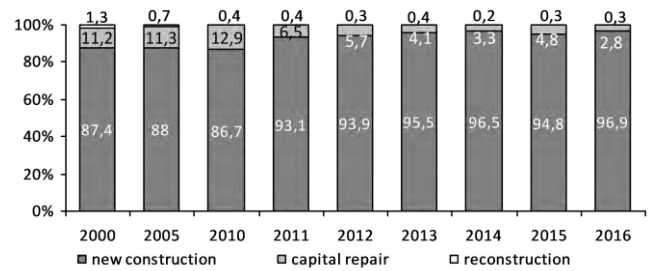


Fig. 5. Commissioned housing: breakdown by reproduction type for Russia (calculated per [8, 12, 14]). Legend: dark grey – new construction, light grey – capital repair, white – reconstruction.

**IV. PRICING DISPROPORTIONS**

Pricing disproportions result from the weak technological and reproductive structure. They manifest themselves in the construction costs rising faster than housing prices. Besides, the existing prices in the primary market, especially in large cities, are too high for people to improve their living conditions, even for people with relatively high income. A considerably region-by-region imbalance in housing prices (see Fig. 6) is caused by the uneven distribution of housing investments in Russia; thus, the largest investments are made in the housing of the Central Federal Okrug and of the Volga Federal Okrug (1,720 billion rubles and 781 billion rubles, respectively). This indicates the preservation of the centripetal distribution of population, the uneven attractiveness of regions, as well as the uneven demand for housing.

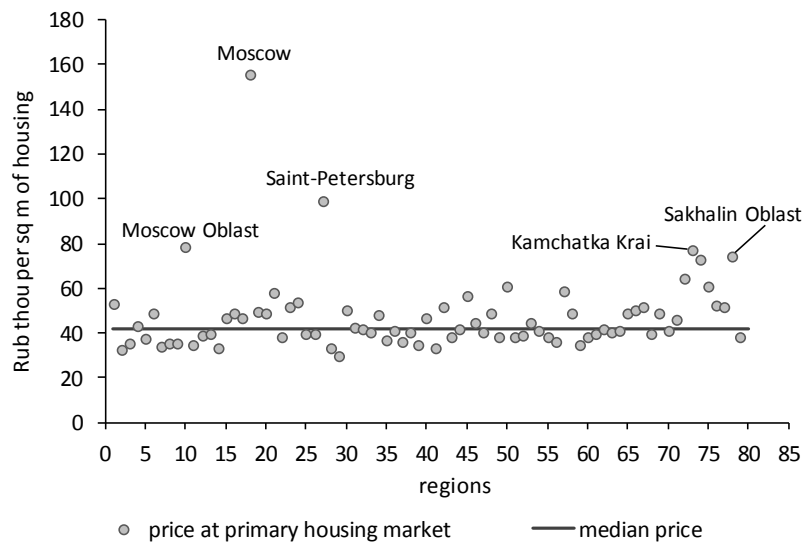


Fig. 6. Price differentiation in the primary Russian housing market (calculated per [15]). Legend: x axis – regions, y axis – RUB thou per sq m of housing, grey circles – price at primary housing market, black line – median price; regions (left to right): Moscow Oblast, Moscow, Saint-Petersburg, Kamchatka Krai, Sakhalin Oblast.

V. CONCLUSION

The structural and pricing disproportions in the market are closely interrelated. Structural disproportions exacerbate the pricing ones. The imbalance of residential property renovation approaches results in the ever-greater deterioration of such property, gradual dilapidation, and worse living conditions. The prices in the primary market mean such housing is not affordable for most people. The housing market is dominated by the resale of the existing residential property, which ensues the low renovation output and results in disbalancing the structure of extended housing reproduction.

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