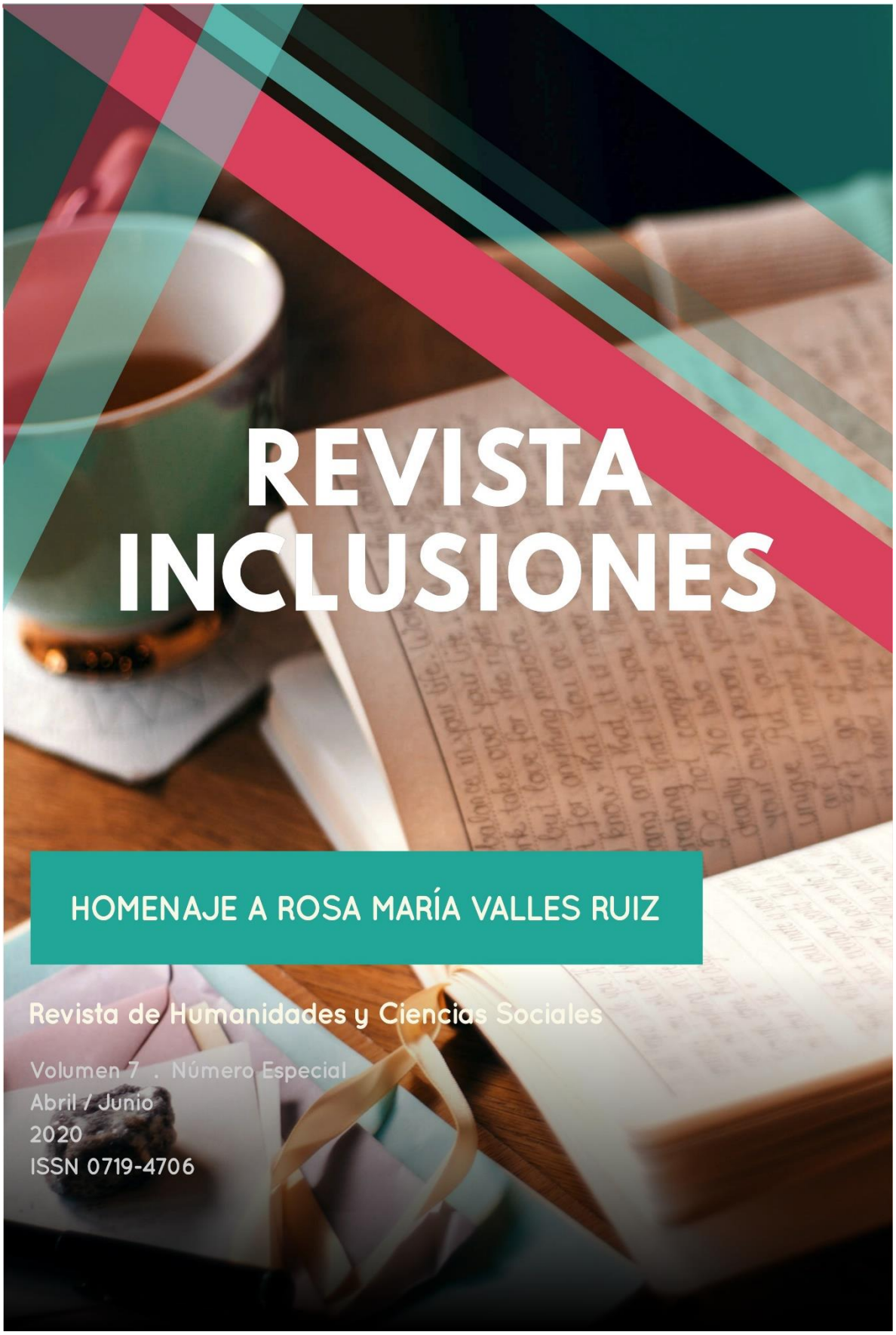

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RESIDENTIAL REAL ESTATE MARKET IN THE LARGEST CITIES OF RUSSIA: EVALUATION AND POSSIBILITIES OF ITS REGULATION

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Abstract

Improving the affordability of housing for various population categories is a main task of modern housing policy in Russia. The concept of housing affordability is considered in the broadest socio-economic context, including not only the affordability of buying housing on the market, but also the possibility of obtaining free social housing for welfare beneficiaries, providing housing for service members, as well as rehousing citizens and etc. With the development of the housing market, the affordability degree for the population to buy housing to own is becoming increasingly important, especially since the share of private housing in the entire housing stock of Russia is very large - 86.3%, including 82.9% by right of ownership.

Keywords

Residential real estate – Housing commissioning volume – Management of major cities

Para Citar este Artículo:

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Introduction

The housing problem continues to be unsolvable for some categories of Russian citizens, despite the more than twenty-year functioning of the residential real estate market. This is due to the imperfection of existing non-gratuitous and gratuitous schemes for housing improvements. To combine these schemes effectively is also difficult due to economic and legal reasons. Meanwhile, only the optimal combination of household incomes, borrowed funds and subsidies provided can solve long-standing housing problems and significantly revive the residential real estate market. Under these conditions, the development of a qualitatively new state support system for the local housing markets, which mitigates and, in the future, overcomes existing imbalances in supply and demand, is of practical significance.

The purpose of our study is to assess the residential real estate market in the largest cities of the Russian Federation in 2008-2016 to formulate new approaches to its regulation. Our conclusions are based on the analysis of statistical data on 13 cities and expert estimates. The cities studied are: Volgograd, Voronezh, Yekaterinburg, Kazan, Krasnoyarsk, Nizhny Novgorod, Novosibirsk, Omsk, Perm, Rostov-on-Don, Samara, Ufa, Chelyabinsk.

Historically, legal approaches to the study of the residential real estate market preceded economic ones. So, the concept of “real estate” has been known since the time of the Roman Empire, when lawyers established the need to divide all property into two categories: movable and real estate. The definitions they formulated were still imperfect, but nevertheless reflected the existing reality.

When examining a real estate item from the position of a title of ownership, it must be taken into account that two main approaches to the study of property compete in economic theory. According to the Marxist approach[1] , property is a system of relations between economic entities (or rather, between classes) regarding the creation, distribution and appropriation of goods. C. Marx also developed D. Ricardo’s theory of land rent, which may be suitable to explain the functioning of the housing market. As a property, housing has some common properties with the land: durability, ability to bring (imputed) rent, etc.

According to the neoinstitutional approach[2], it is not relations that are investigated, but the property rights. Ownership rights include a bundle of powers and the resulting

[1] V. Antoniucci; G. Marella and J. Schumpeter, “Small town resilience: Housing market crisis and urban density in Italy”, Land Use Policy, Vol: 59 (2016): 580-588; J. R. Kim and G. Lim, “Fundamentals and rational bubbles in the Korean housing market: A modified present-value approach”, Economic Modelling. Vol: 59 (2016): 174-181; P. Lee, “Housing Market Renewal: Evidence of Revanchism or a Response to 'Passive Revanchism' Supporting 'Citizenship of Place”, Housing Studies. Vol: 28 (2013): 1117-1132 y J. M. Clapp; P. Eichholtz and T. Lindenthal, “Real option value over a housing market cycle”, Regional Science and Urban Economics. Vol: 43 (2013): 862-874.

[2] F. Kern, “Ideas, institutions, and interests: Explaining policy divergence in fostering 'system innovations' towards sustainability”, Environment and Planning C: Government and Policy. Vol: 29 (2011): 1116-1134; A. Wesselink; J. Paavola; O. Fritsch and O. Renn, “Rationales for public participation in environmental policy and governance: Practitioners' perspectives”, Environment and Planning. Vol: 43 (2011): 2688-2704 y S. Wharne, “Do people choose to be homeless? An existentially informed hermeneutic phenomenological analysis”, Housing, Care and Support. Vol: 18 (2015): 101-112.

liability. Property rights can be split between entities: for example, the state has full sovereignty over the country's navigational airspace; rights to underground mineral resources also, as a rule, belong to the state. However, the greater the number of restrictions (easements) are in property rights, the lower is the value of the property (good), and, therefore, the lower is the demand for it and its price, and vice versa. The clearer the ownership rights are, the lower are the transaction costs of market interaction and the greater is the likelihood of an optimal allocation of resources. Thus, according to the neoinstitutional approach, property rights are one of the basic rules of the game in the economic system, and this also applies to individual areas of activity and individual markets, in particular, the housing market.

The quality of residential real estate is a combination of properties that characterize the degree of its suitability for intended use and the satisfaction of various consumer needs: efficiency, durability, ergonomics, environmental friendliness, safety, aesthetics, etc.[3] In the command economy, one of the main requirements was to meet the needs of the wider population for free housing at the minimum social standards. In a market economy, housing is sold to different segments of the population, taking into account their capabilities and needs[4], goods in the housing market have become more differentiated. All things being equal, quality affects the price of demand. However, the lack of necessary information about the quality of housing purchased by buyers in both the primary and secondary markets raises the problem of the so-called “adverse selection”, according to J. Akerlof: good residential properties quickly leave the market or do not even enter it (they are sold based on personal relationships), and the bad ones come back to the market again[5]. In addition, apparently, the Stigler effect “price is an indicator of quality” is also present in this market, according to which, in the absence of the necessary information, the buyer begins to consider the price as an indirect evidence of the quality of the object. In our opinion, this effect is most significant for the primary housing market, when the consumer is not able to assess the quality of modern technologies and materials.

Methods

To assess the residential real estate market in the largest Russian cities, we analyzed the current state of the housing space and living conditions of the population in cities, as well as their dynamic changes from 2008 to 2016 in the following logic:

- at the first stage, statistical indicators (population dynamics, housing commissioning and price per square meter of housing) in the cities under study were examined;

[3] A. Singh; J.-D. Saphores and T.A. Bruckner, “A spatial hedonic analysis of the housing market around a large, failing desert lake: the case of the Salton Sea in California”, Journal of Environmental Planning and Management. Vol: 61 (2018): 2549-2569; S. Metzner and A. Kindt, “Determination of the parameters of automated valuation models for the hedonic property valuation of residential properties: A literature-based approach”, International Journal of Housing Markets and Analysis. Vol: 11 (2018): 73-100 y A. Szczepańska; I. Krzywnicka and G. Lemański, “Urban greenery as a component of real estate value”, Real Estate Management and Valuation. Vol: 24 (2016): 79-87.

[4] J. T. L. Ooi; T. T. T. Le and N.-J. Lee, “The impact of construction quality on house prices”, Journal of Housing Economics. Vol: 1 (2014): 126-138.

[5] G. A. Akerlof, “Behavioral macroeconomics and macroeconomic behavior”, American Economic Review. Vol: 92 (2002): 411-433

- at the next stage, the coefficient of housing per capita of the city population was calculated;

- at the third stage, we conducted a correlation analysis of the volumes of housing commissioning and the population of the territory;

- further - a correlation analysis of the average price per square meter of housing and per capita income of the population according to the following formula:

$$r_{\text{в}} = \frac{\sum_{i=1}^{n}(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^{n}(x_i - \bar{x})^2 \cdot \sum_{j=1}^{n}(y_j - \bar{y})^2}}.$$

where x_i is the value of the square meter of housing in the city;

y_i - the value of the income of the population of the city;

$\bar{x}$ - the arithmetic average price per square meter of housing in the cities under consideration;

$\bar{y}$ - the arithmetic average of the incomes of the population in million

➢ at the final stage, the housing affordability index was calculated using the UN-Habitat methodology

Results

An analysis of the population dynamics of all Russian largest cities in 2006-2017 led to the conclusion that the most significant increase in the population occurred in Novosibirsk, where over the past 10 years there was a population increase of 205915 people, which allowed the city to become a leader by population change by the end of 2017, being second only to federal cities in this indicator. In all the cities examined, with the exception of Nizhny Novgorod, an increase in the population was observed during the study period (Krasnoyarsk, Perm, Voronezh and Volgograd - from 2006 to 2017 they passed the number of 1 million people.

Housing construction remains one of the priority areas of the country's development. And although in recent years there has not been a significant increase in the country’s average in terms of housing commissioning, in 10 of the 13 cities with a population of 1 million people, with the exception of Kazan, Chelyabinsk and Omsk, there is a positive trend towards an increase in the number of commissioned housing for the period under review (see Fig. 1).

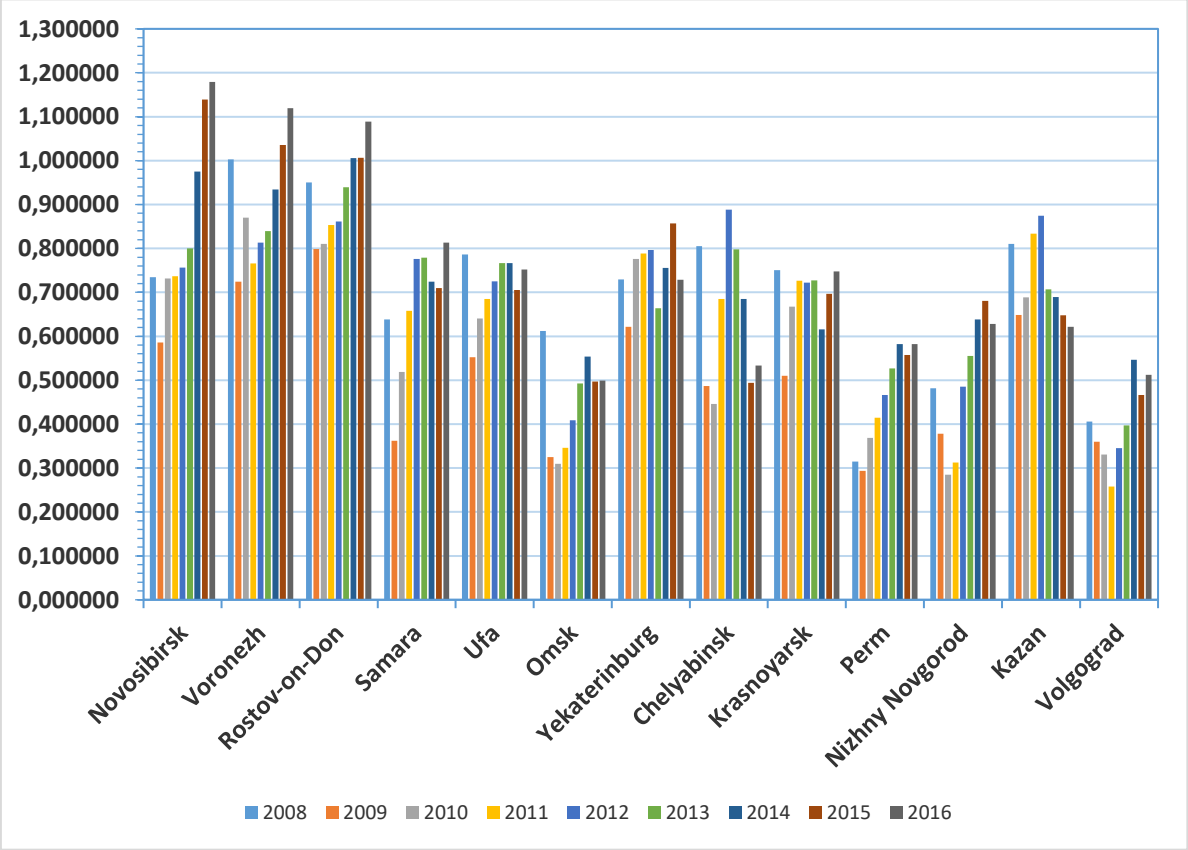

Figure 1
The dynamics of the housing commissioned per 1 person in the largest cities of Russia (sq.m.)

Novosibirsk has been the undisputed leader in the volume of housing commissioning over the past 5 years. Also among the leaders in this indicator are Rostov-on-Don, Voronezh and Yekaterinburg, but the share of the housing commissioned in these cities, compared with Novosibirsk, is significantly lower, and by 2016, it was 66%, 62% and 56% respectively.

Outsider cities in terms of total housing commissioning are Volgograd, Perm, Omsk and Chelyabinsk. It should also be noted that Volgograd and Perm improved their performance in this segment over the period under review. The volume of housing commissioned increased by 29% in Volgograd and by 91% in Perm. While Omsk and Chelyabinsk, on the contrary, worsened their positions. In 2016, Omsk commissioned by 114 thousand square meters less than in 2008, and in Chelyabinsk this figure is even lower – it worsened its position by 257 thousand square meters in 2016 compared with the beginning of the period under review.

Let us consider whether there is a relationship between the absolute volume of construction and population. To do this, we carry out a correlation analysis of these data (Fig. 2).

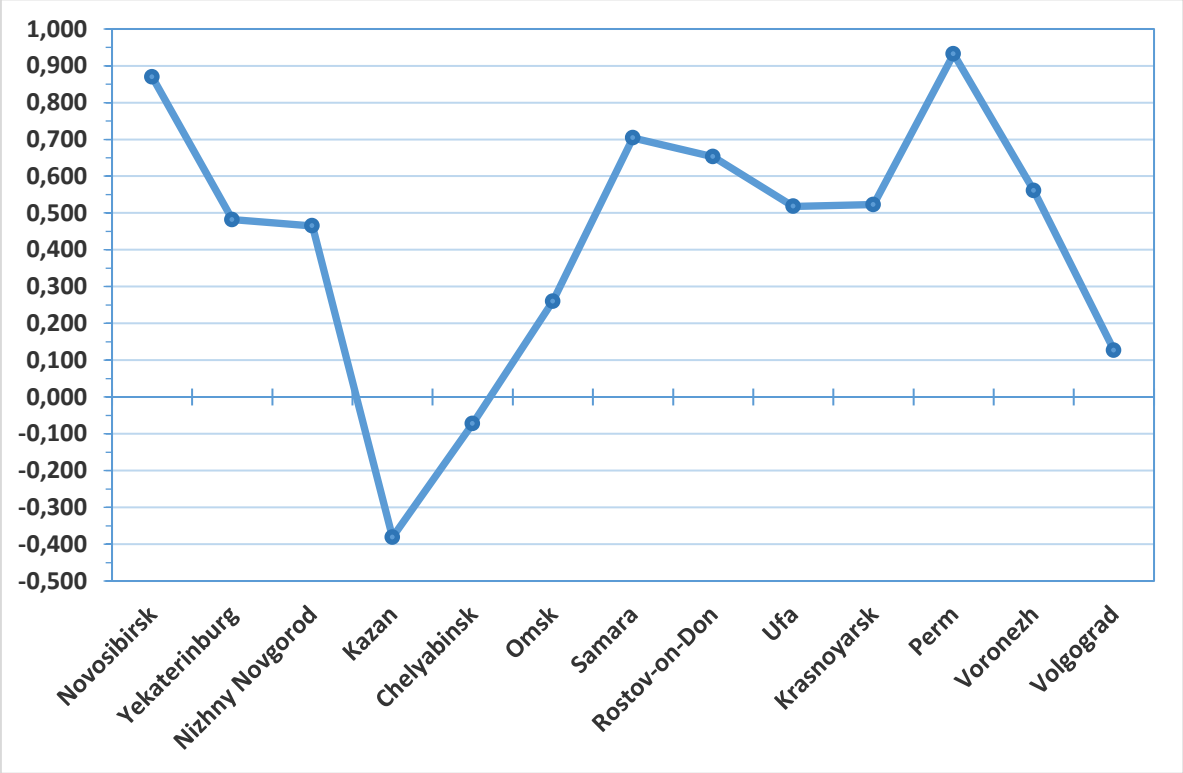

Figure 2
Correlation of population and housing commissioning in the largest cities of Russia

We have to note that the strongest dependence between the considered indicators is observed in Perm and Novosibirsk, where the correlation coefficient is close to 0.9. There is also a significant correlation between the population and housing commissioning in Yekaterinburg, Samara, Rostov-on-Don, Ufa, Krasnoyarsk and Perm. In these cities, the correlation coefficient exceeds 0.5. Very interesting is the fact that in two cities - Kazan and Chelyabinsk - negative values are observed, which indicates no influence of the population on the volume of the housing commissioned.

Let us check if there is a relationship between the price per square meter of housing and the incomes of the population in the cities under study, for which we will conduct a correlation analysis (Fig. 3). According to the results of the analysis, we can conclude that the price per square metre of housing and the average wage of the population are highly dependent. This is especially evident in Chelyabinsk, Ufa, Kazan, Perm and Rostov-on-Don, where there is a correlation (> 0.93) between the considered indicators. Novosibirsk, Yekaterinburg, Nizhny Novgorod, Omsk, Krasnoyarsk, Voronezh are the cities with weaker ties between the price per square metre of housing and the average wage of the population, however, a correlation coefficient of more than 0.6 indicates the existing interdependence.

An insignificant dependence is observed in Samara, where the correlation coefficient is 0.34, which indicates the absence of a relationship between the indicators analyzed. Volgograd is the only city that showed a negative correlation coefficient, since the price per square metre of housing over the period under review gradually decreased, and wages, on the contrary, increased.

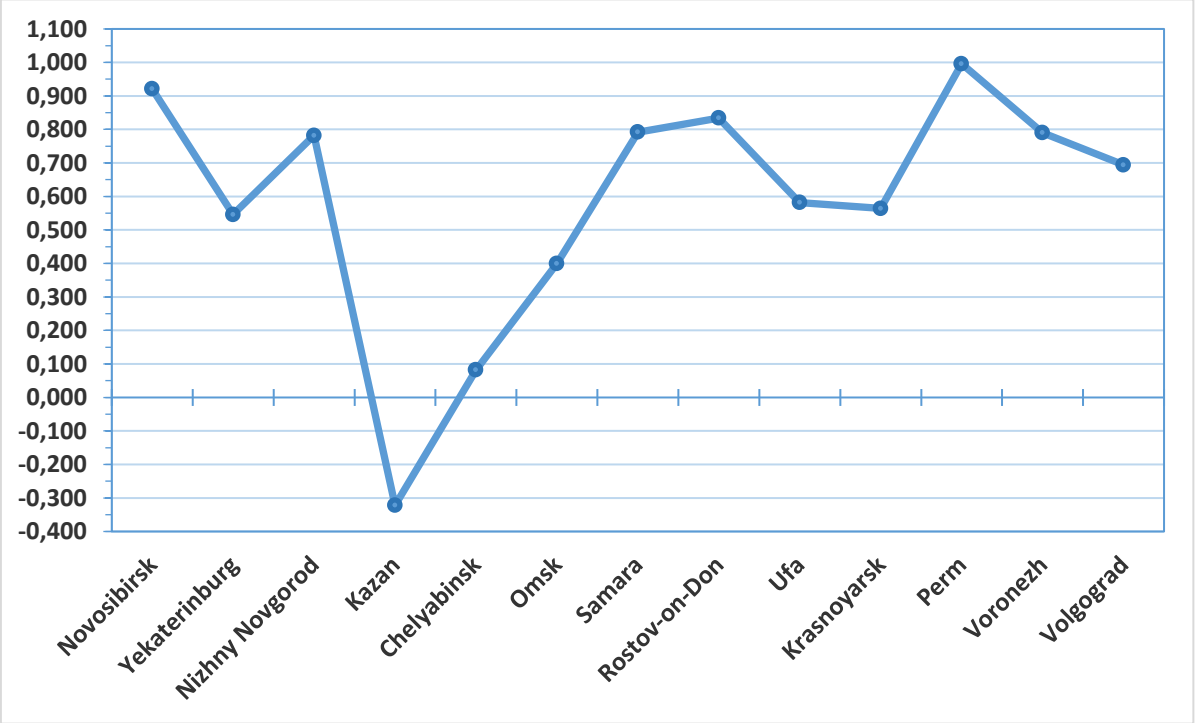

Figure 3
Correlation of average wages and average price per square meter of housing in the largest cities of Russia

If we compare the indicators of the average monthly wage of the population and the volume of housing commissioned, we can note the fact that the volume of housing commissioned does not in all cases depend on the welfare of the population. However, as can be seen from the figure, other factors can significantly change the situation. The dependence of housing commissioning on population income is confirmed by the dynamics of population income growth and housing commissioning in individual cities. Moreover, the volume of housing commissioned in cities is growing steadily with a steady increase in incomes.

At the next stage, we will assess the affordability of housing in the largest cities of Russia. On the housing construction market in the cities under consideration, the price range is quite wide, while prices on the secondary market differ in many respects from the prices on the primary housing construction market. These offers have such a wide price range due to many factors: the attractiveness of the city, infrastructure security, the existing categorization of housing from economy class to luxury, etc.

As of 2016, the most expensive housing in the primary market is observed in Kazan (see Fig. 4). At the same time, at the beginning of the period under review, a square meter of housing in Kazan was one of the most affordable among the largest cities in Russia and for the period from 2010 to 2016 the price rose about 1.8 times. Also, high housing prices are noted in Nizhny Novgorod and Yekaterinburg (the trend continued until 2015). The lowest price per square meter of housing in 2016 is observed in Samara. Moreover, Samara and Volgograd are two cities that in 2016, in comparison with 2010, showed positive dynamics in reducing prices per square meter.

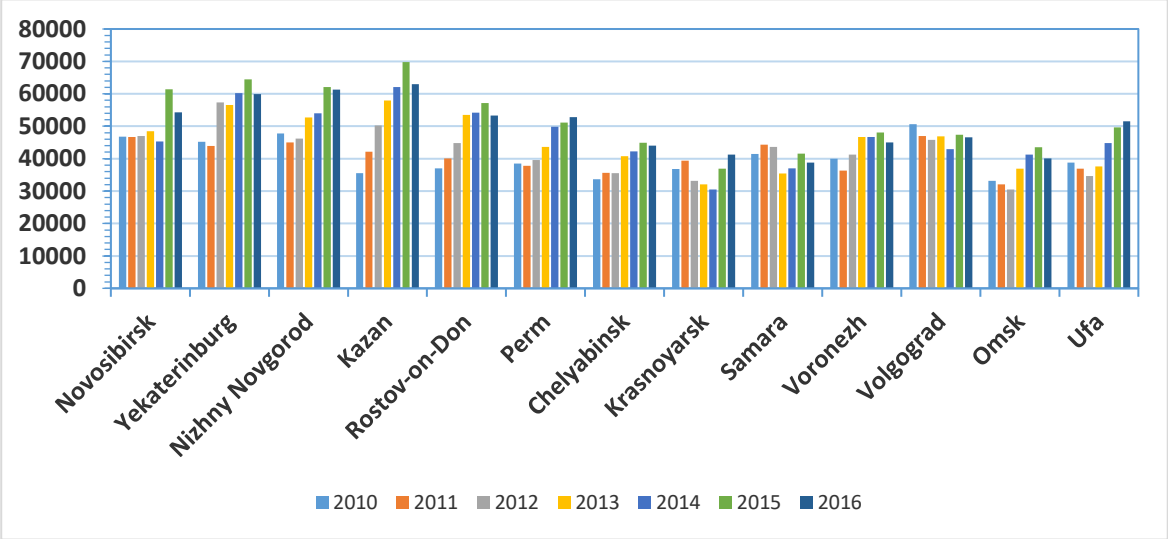

Figure 4
The dynamics of the price per square meter of housing in the largest cities of Russia (primary market)

A somewhat different situation is seen in the secondary housing market in the cities under consideration (Fig. 5). The highest price per square meter of housing both at the beginning of the period under consideration and in 2016 is noted in Yekaterinburg. Moreover, the most significant price increase for the period 2010-2016 is present in Kazan - 1.8 times growth. The lowest price per square meter of housing is in the city of Chelyabinsk (43940 rubles / sq. m. in 2016).

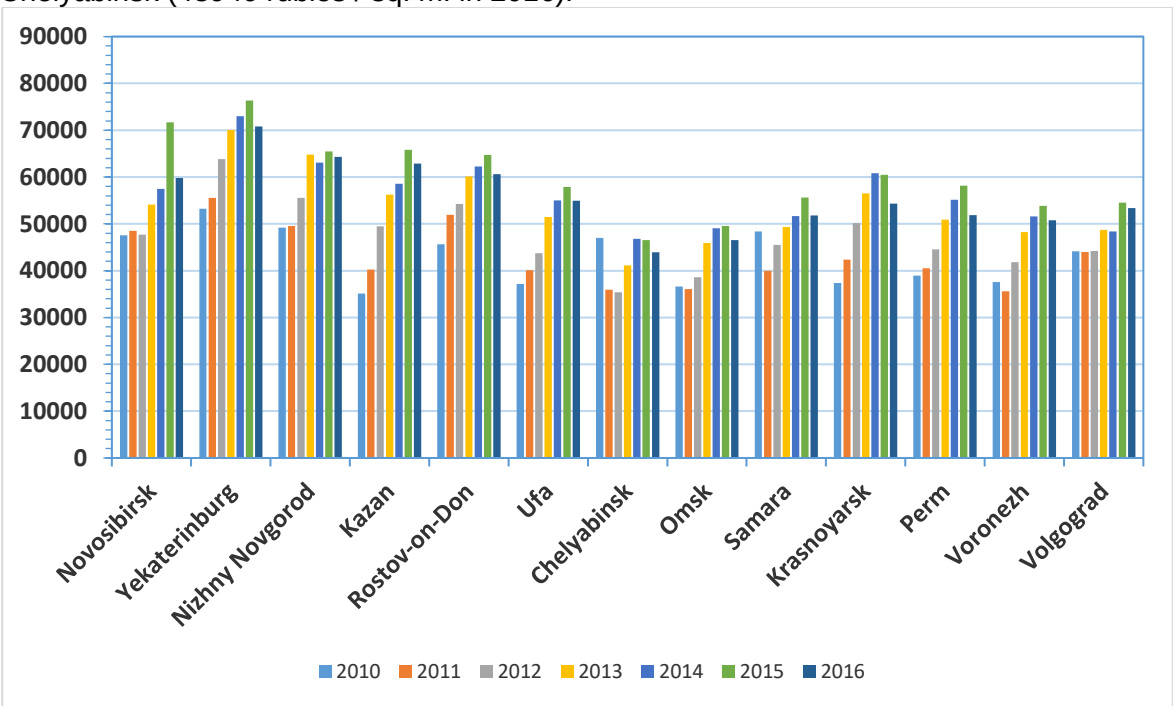

Figure 5
The dynamics of the price per square meter of housing in the largest cities of Russia (secondary market)

The housing policy of the Russian Federation is based on the UN-Habitat methodology, in which the housing affordability index (HAI) is determined by the number of years that a person with an average income needs to accumulate funds for the purchase of average housing, provided that all household incomes are allocated for these purposes. Based on the calculated data presented in Fig. 6, we note that initially the most affordable housing was in the primary market in Krasnoyarsk, Chelyabinsk and Perm, and a person would have to put aside all his funds maximum number of years in Nizhny Novgorod and Volgograd (about 3.7 and 4.2 years, respectively). During the period under review, we note a gradual increase in housing affordability in all cities, and by 2016, all 13 cities with a population of 1 million people are facing a decrease in the affordability index, which indicates an increase in housing affordability for the population. As a result of the period under review, the situation has not changed significantly: primary housing in Krasnoyarsk and Chelyabinsk is still more affordable than in other cities under consideration, and a positive trend is also observed in Omsk and Samara, where in 2016 one of the lowest housing affordability indicators for the cities under consideration is seen. Ambiguous dynamics in this indicator is noticed in Kazan and Ufa, where there is no obvious trend towards increasing affordability, development has a wave-like character, but nevertheless, the indicators improved in both cities compared with the beginning of the period under review.

At the end of 2016, the most affordable housing in the primary market was in the city of Omsk, and the most unaffordable - in Ufa, where it will take a little more than 2.5 years for a family of 3 to save for average housing, putting all their income to this accumulation.

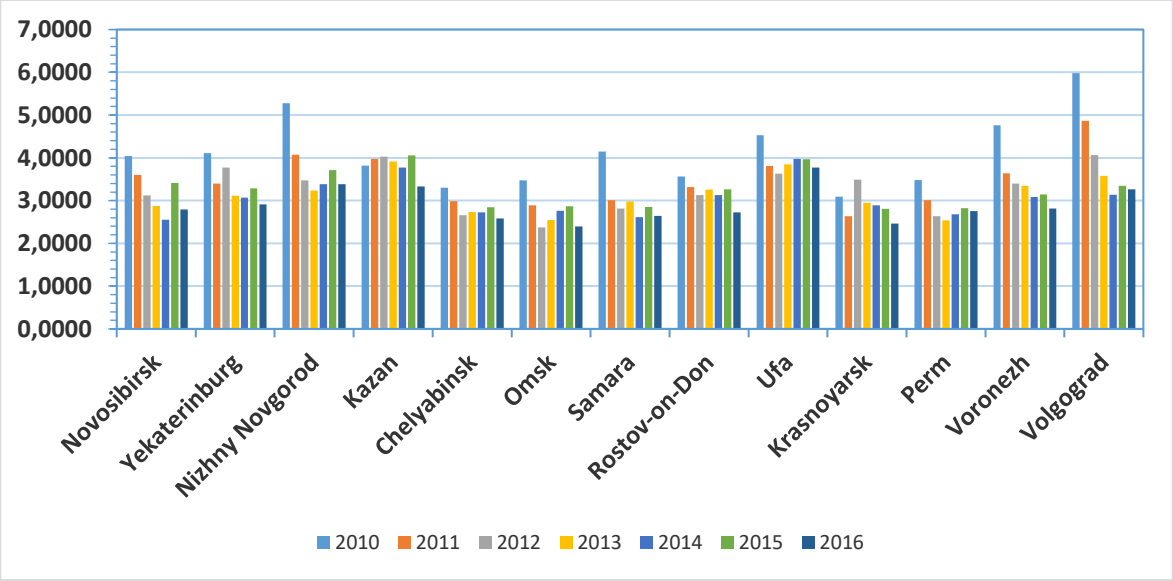

Figure 6
Primary market housing affordability index in the largest cities of Russia

According to the calculations, the results of which are presented in Fig. 7, we note that at the beginning of the period under review the most affordable was secondary housing in the cities of Krasnoyarsk, Perm and Kazan, where households of 3 persons would have to save all their money for the purchase of average housing for less than 3 years. The most unaffordable housing in 2010 was in Nizhny Novgorod, Yekaterinburg and Volgograd. Over the reviewed period, a decrease in the affordability index is observed in

all cities, and a sharp decline is observed between 2010 and 2011, which is especially noticeable in Chelyabinsk, Voronezh, Samara and Nizhny Novgorod. The most stable dynamics are observed in Kazan, Ufa and Krasnoyarsk, where there was a wave-like development dynamics with variables of decrease and increase in the affordability index, but as a result, there were insignificant positive changes in the affordability index over reviewed period.

According to the results of 2016, the minimum number of years for accumulating funds to purchase average housing in the secondary market was noted in Chelyabinsk and its approximate value is 1.9 years, and the maximum indicators are recorded in Ufa, where a household of 3 persons will need a little less 3 years to accumulate money for average housing in the secondary market of the city.

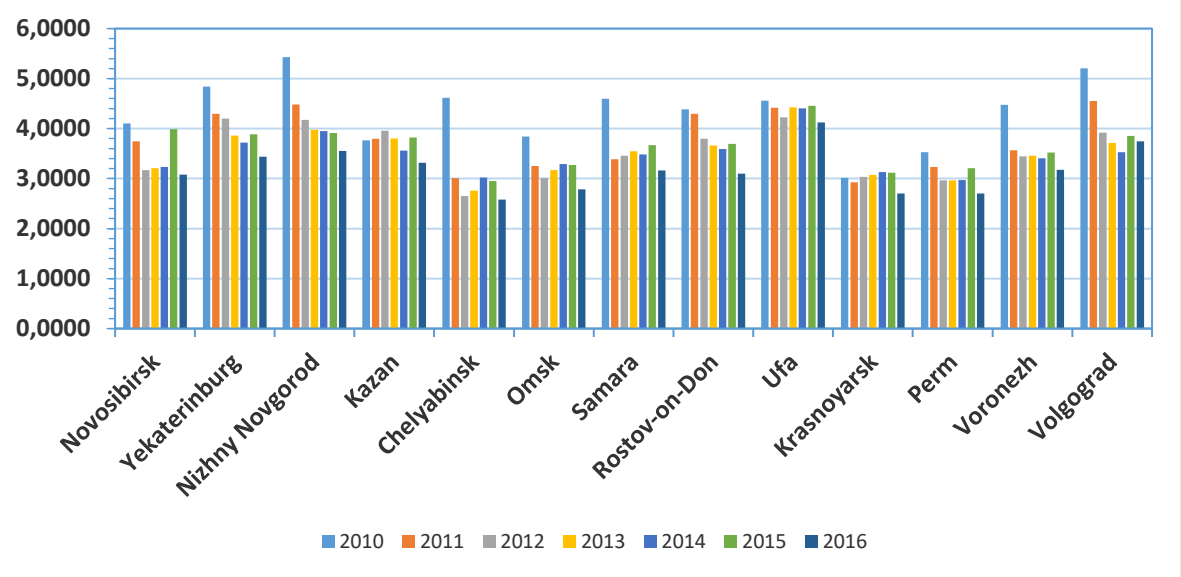

Figure 7
The dynamics of housing affordability index in the secondary market
in the largest cities of Russia

Discussion

Evaluation of the residential real estate market in the largest cities of Russia revealed a number of features in the industry:

1. The current state of the construction industry in the Russian Federation is characterized by low labor productivity and high cost in housing construction. Excessive procedures, documents and regulations in the design and construction inhibit the modernization and development of the industry. The supply in the housing market that meets the needs of different categories of citizens is insufficient not only in terms of the actual availability of new square meters, but also in terms of the quality and variety of housing being built;

2. A characteristic feature of the construction industry is a high degree of conservatism, as well as a low level of innovation, in contrast to other sectors. This may be due to the fact that most of the construction enterprises are small and medium-sized enterprises that are not able to invest working capital in innovative development;

3. Significant fragmentation of companies in the scale of construction: large developers account for about 30.2% of housing under construction in the Russian Federation, including the 6 largest construction companies erecting about 12 million square meters of housing; two-thirds of developers are engaged in the targeted implementation of small projects (construction volume is up to 25 thousand square meters), while they account for less than 20% of the total volume of multi-apartment buildings under construction;

4. Only two methods of financing housing construction projects are widespread: equity construction investor's funds (at a later stage of construction) and attracting investment partners to the project. The key advantage of such sources is the lack of obligations to pay interest on a regular basis, in the first case, the developer only has an obligation to transfer the apartment on time, and in the second, the obligation to distribute profits from the project, in accordance with the agreements between the participants. Traditional bank financing, as well as attracting public debt, has certain inconveniences associated with the cyclical demand in the housing market: during periods of decline in sales the company may have difficulty servicing debt, which may lead to lenders having the right to demand early repayment of the debt, and this will further aggravate the situation of the developer, up to bankruptcy;

5. In the central parts of Russian cities there are federal-owned land plots that are no longer used for their intended purpose. The growth of construction volumes is impossible without the involvement of new land plots and the transition from urban expansion to the efficient use of built-up territories and empty plots within city borders.

The general trends in the housing market of the cities under study are such that for the period under review, the growth in housing commissioning is not observed in all cities. Three cities showed a negative trend in housing commissioning at the end of the period under review in comparison with the initial indicators. In almost all cities there is an increase in the per square meter of housing, but it is happening at different rates.

It is impossible to identify the only and clear leader in the residential real estate market among the cities examined. From the point of view of market management, the effectiveness of the implementation of municipal programs and municipal legislation, Yekaterinburg can be distinguished where the municipal government supports construction companies using mechanisms to reduce the time for issuing building permits, and the population with municipal housing programs. Novosibirsk can also be pegged as a leading city in the housing construction market, since in recent years the city has begun to actively develop, as can be seen from the positive dynamics of all statistical indicators.

Conclusions

Currently, housing is one of the most socially significant segments of the real estate market. In terms of global indicators, Russia still lags behind both developed and developing countries. In Germany, the norm of living space per person is 56 square meters, CIS experts set this figure at 30 square meters. m. In densely populated China, the leader in terms of population in the world - it is equal to 25 square meters. In Russia, the minimum living space per person is 12 square meters.

The main problem in the development of housing in the largest cities, in our opinion, is that the state regulation of the housing market does not take into account the

individual characteristics of each region of the country, with its inherent characteristics - the cost of housing, the volume of housing construction, the state of the housing stock, affordability housing for the population.

Despite the fact that the range of housing development programs implemented by the regional and municipal bodies is quite extensive, none of them has become widespread on a massive scale due to the low solvency of the population and the lack of budgetary funds to subsidize a wider range of citizens. The situation is aggravated by the increasing number of program participants each year - every year there are more and more “waiting lists”, and the waiting period for improving housing conditions is comparable to the years of waiting for social housing.

Existing methods of providing housing to the population can only help a narrow circle of citizens, and the expectation of better living conditions can be 10-20 years for poor citizens. The issue of constructing a system that governs the provision of a wide range of citizens with affordable housing has not been sufficiently developed. There is no single systemic solution to the problem of obtaining social housing for poor citizens. Thus, despite the relevance of market self-regulation methods, the residential real estate market is highly dependent on administrative bodies, and the state, represented by federal, regional and municipal authorities, is a key factor in the development of the industry. That is why a planned and built-up system for managing the residential real estate market at all levels of government plays a special role in shaping the image of the city, region and country as a whole.

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