Czech University of Life Sciences Prague

Faculty of Economics and Management

Department of Economics

Bachelor Thesis

Analysis of the Real Estate Market in the Russian Federation

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CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

BACHELOR THESIS ASSIGNMENT

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Economics and Management

Thesis title

Analysis of the Real Estate Market in the Russian Federation

Objectives of thesis

The objective of this thesis is the evaluation of the current situation and trends of the real estate market in the Russian Federation.

The tasks of the thesis:
- to study the theoretical aspects of the real estate market in the Russian Federation.
- determine the reasons of price changes in the real estate market.
- identify trends in the development of the real estate market.

Methodology

The methodology of the thesis is based on quantitative and qualitative methods.

Quantitative methods include analysis of statistical data.

Qualitative methods include SWOT analysis and survey.

The proposed extent of the thesis

40 – 60 pages

Keywords

Russian Federation, real estate, price, real estate market, trends, price change, demand, supply.

Recommended information sources

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Declaration

I declare that I have worked on my bachelor thesis titled "Analysis of the Real Estate Market in the Russian Federation" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break any copyrights.

In Prague on 15.03.2024 _____

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Analysis of the Real Estate Market in the Russian Federation

Abstract

Bachelor's thesis "Analysis of the real estate market in the Russian Federation" is devoted to assessing the current situation in the real estate market in the Russian Federation and, in particular, in Krasnodar region, identifying the key factors affecting supply and demand in the market, as well as identifying the main trends and dynamics of development of this area. The work is divided into two main parts: theoretical and practical.

The theoretical part contains the basic concepts, segments, classification of objects and subjects of the real estate market, the level of government influence in the market. In the practical part, the author analyzes the residential real estate market in the Krasnodar region. The author conducted a comparative analysis of primary and secondary markets, analysis of factors affecting supply and demand, as well as regression analysis of changes in the price of primary real estate in connection with selected economic indicators.

Keywords: Russian Federation, Krasnodar region, real estate, price, real estate market, trends, price change, demand, supply, regression analysis.

Analýza trhu s nemovitostmi v Ruské federaci

Abstrakt

Bakalářská práce "Analýza trhu s nemovitostmi v Ruské federaci" je věnována posouzení současné situace na trhu s nemovitostmi v Ruské federaci a zejména v Krasnodarském kraji, identifikaci klíčových faktorů ovlivňujících nabídku a poptávku na trhu, jakož i určení hlavních trendů a dynamiky vývoje této sféry. Práce je rozdělena do dvou hlavních částí: teoretické a praktické.

Teoretická část obsahuje základní pojmy, segmenty, klasifikaci objektů a subjektů trhu nemovitostí, úroveň vlivu státu na trh. V praktické části autor analyzuje trh rezidenčních nemovitostí v Krasnodarském kraji. Autor provedl srovnávací analýzu primárního a sekundárního trhu, analýzu faktorů ovlivňujících nabídku a poptávku a také regresní analýzu změny ceny primárních nemovitostí v souvislosti s vybranými ekonomickými ukazateli.

Klíčová slova: Ruská federace, Krasnodarský kraj, nemovitosti, cena, trh s nemovitostmi, trendy, změna cen, poptávka, nabídka, regresní analýza.

Table of content

1. Introduction

The real estate market is an important aspect of any country's economy, and the Russian Federation is no exception. Over the past few decades, the real estate sector in Russia has undergone significant changes that have influenced the growth, development and performance of the industry. The sector has become an important contributor to the Russian economy by creating jobs, generating income and providing infrastructure to meet the growing needs of the population.

The bachelor thesis will provide a comprehensive overview of the current state of the market, including its size, trends and future prospects. The study will also examine the factors that have influenced the growth and development of the real estate market in Russia, including economic, political, and social factors.

The analysis of the real estate market in the Russian Federation is important as it will provide insights into the growth and development of the industry, helping to inform the government, investors and other stakeholders about the potential of the market. The results of this study will also contribute to the existing body of knowledge on the real estate market in Russia, providing a basis for further research and analysis.

2. Objectives and Methodology

2.1 Objectives

The purpose of this thesis is to assess the current situation of the real estate market in the Russian Federation, particularly in the Krasnodar region, to identify the main trends and dynamics of development of this area, identifying the key factors affecting supply and demand in the real estate market in Russia, the study of the impact of external factors, national crises and world problems on the real estate market.

The research questions this bachelor thesis seeks to answer include:

- What is the current state of the real estate market in the Russian Federation?
- What are the main factors that have influenced the growth and development of the real estate market in Russia?
- What are the trends and patterns in the real estate market in Russia?

The theoretical part is aimed at defining the main concepts and market segments, classification of real estate objects and their characteristics, as well as the study of market subjects (participants) and the level of government influence in the real estate market. These theoretical aspects help to get a general idea of this area of the economy and make a detailed analysis of the real estate market.

In the practical part, the author conducted a comparative analysis of the primary and secondary real estate markets in the period 2017-2023, an analysis of factors affecting supply and demand in the market, as well as regression and correlation analyses of price changes per 1 m2 of primary residential real estate in connection with selected economic indicators.

2.2 Methodology

This bachelor's thesis consists of theoretical and practical parts. The theoretical part considers the basic concepts related to the real estate market in Russia. The preparation of this part of the thesis includes a systematic analysis of literary sources, textbooks in the field of real estate, scientific articles and journals, legal acts of the Russian Federation, as well as other written or online resources.

The practical part includes quantitative data analysis to study the current situation in the real estate market in the Krasnodar region, comparative analysis of recent years, an analysis of supply and demand factors, as well as regression and correlation analyses. The time period used for analyses ranges from 2017 to 2023. The research region is Krasnodar region. The data used in the practical part were collected from various statistical sources, such as Rosstat (Federal State Statistics Service of Russia), Krasnodarstat (Krasnodar Region Department of the Federal State Statistics Service), as well as reports of construction companies and real estate agencies and other open sources.

Regression analysis is a statistical research method aimed at analysing the effect of one or more independent variables (X) on the dependent variable (Y). In simple words, regression analysis helps us to understand what factors influence the target variable. The main objective is to examine the nature and strength of the relationship between the independent and dependent variables. There are several types of regression analysis. In this thesis, the author uses multiple linear regression analysis, where one dependent variable and more than one independent variable are used to show a linear relationship.

The linear equation of regression analysis is:

$$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \cdots + \beta nXn + \varepsilon \quad (1)$$

Where:

Y: dependent variable;

$\beta 0$: intercept - represents the level of the dependent variable Y when all independent variables are zero;

X1, X2…Xn: independent variables;

$\beta 1$, $\beta 2\ldots$ βn: regression coefficients for the corresponding independent variables X1, X2...Xn. They characterize the change in the dependent variable Y associated with a unit change in the corresponding independent variable X, provided that the other variables remain constant;

ε: regression error, which represents the random component of the model.

Correlation analysis is a statistical technique that is used to examine the degree of relationship between two or more variables. It allows us to determine how strongly and in what direction variables are related and to assess the statistical significance of this relationship. With the help of this analysis, it is possible to measure the degree of connectedness of two or more phenomena and to select the factors that have the most significant impact on the resultant indicator. The author used 1 dependent variable and 5 independent variables to perform regression and correlation analyses:

Dependent variable:

- **the price for primary housing (PPH)** - in this analysis, the average price of 1 square meter of housing on the primary real estate market in Krasnodar Region was used as the dependent variable. (Column PPH, Table 1)

Independent variables:

- **Income of the population (IP) -** the level of household income directly determines people's ability to purchase real estate. For the analysis was selected data on the average per capita income of the population in Krasnodar region, which includes wages and salaries of employees; income from entrepreneurial and other production activities; social payments; property income; payment of income on government and other securities; investment income; and other cash receipts. (Column IP, Table 1)
- **Inflation (I)** - inflation shows the rate of increase in the price level of goods and services in the economy, including real estate. Data for analysis is used in percentages. (Column I, Table 1)
- **USD rate (USD)** - the exchange rate of the national currency against the dollar affects foreign trade, the value of imports and exports, investment and the general economic situation in the country. The value of 1 dollar is expressed in Russian rubles. (Column USD, Table 1)
- **Key rate (KR)** - the key rate of the Central Bank is an instrument that regulates the level of money rates in the economy. It affects interest rates on loans and deposits, investment decisions, spending and demand for consumer goods and services. The data is expressed as a percentage per annum. (Column KR, Table 1)
- **Oil price (OP) -** Russia is a major exporter of oil and the price of oil has a significant impact on the country's economy. A high oil price contributes to the growth of the

country's economy and revenues, while a low price can cause financial difficulties and lower revenues. Data are expressed in dollars per 1 barrel of oil. (Column OP, Table 1)

To perform regression and correlation analyses, the author used SAS OnDemand for Academics systems to create the correlation matrix (Figure 8) and to obtain the results of the regression (Figures 9, 10, 11) and MS EXCEL to process the economic data, create the table with data (Table 1) and illustration of PPH and PPH' (Figure 12). The time period used in the analysis is almost 6 years, taking each quarter starting from the 1st quarter of 2017 up to and including the 3rd quarter of 2023. The number of observation(s) is 27. All variables are numerical data, ordered chronologically and illustrated in Table 1. The data used for the analysis were taken from official sources, such as Rosstat and Krasnodarstat.

3. Literature Review

3.1 The real estate market in Russia

In Russia the real estate market is actively forming and developing. More and more citizens, enterprises and organizations are involved in real estate transactions. Therefore, real estate is one of the central topics in the discussion of privatization of state and municipal property, in the leasing of non-residential premises, as well as in the purchase and sale of residential properties.

3.1.1. Definition and functions

The real estate market is a mechanism for conducting transactions between sellers, buyers and other subjects that sets prices and transfers real estate rights. The real estate market is a crucial component of the national economy, as real estate represents a significant part of the national wealth. Without a real estate market, there can be no market at all, as the markets for labor, capital, goods and services, among others, require suitable premises for their operations, whether owned or leased. In this context, real estate is a means of production, including land, administrative, manufacturing, warehouse, commercial and other buildings and structures. On the other hand, real estate is an object of consumption, including land plots, residential houses, cottages, apartments, garages. (V. S. Tsyganenko, 2008)

With the help of market mechanisms and government regulation, the real estate market performs several functions, thus affecting the entire economy of the country:

- Ensures the establishment of equilibrium prices, at which effective demand corresponds to the volume of supply.
- Performs the function of sanitation, cleansing the economy of non-competitive and weak market participants, eliminating inefficiency.
- Guarantees the connection of economically isolated producers and buyers to exchange the results of labor.
- Has a commercial purpose in the realization of the consumer price of real estate and obtaining a return on invested capital.
- It acts as a form of material remuneration for profitable application of achievements of technical progress in the creation and use of real estate.

- It determines the growth of labor activity of the whole population, increasing the intensity of labor of citizens who strive to become owners of apartments, land plots and other significant and elite assets.
- Serves as an attractive means of preservation and multiplication of capital. The real estate market promotes the transfer of savings and accumulations of the population from idle stocks into productive capital, bringing income to the owner of real estate. Moreover, real estate functions as a form of insurance that guarantees investment risks. (V. M. Kozyrev, 2009)

Despite its importance and influence, the real estate market in Russia is relatively young. Following the collapse of the Soviet Union in 1991, private ownership of real estate was legalized and the real estate market began to develop (Yakovlev, 2010). On December 23, 1992, a law was issued granting citizens the right to purchase and sell land plots for private ownership, which was later enshrined in the Civil Code of the Russian Federation. This law gave people the right to own and dispose of real estate. (N 4196-I The Law of the Russian Federation)

3.1.2. Market segments

The real estate market can be represented in the form of several segments that divide the market into groups of buyers with similar characteristics.
The main segments include:

The housing market

It is characterized by a complex structure and interrelated mechanisms for the redistribution of housing facilities. Residential premises are real estate objects and isolated premises suitable for permanent residence of citizens. Residential premises are: a house (an individually-standing building), an apartment (a separate enclosed space in an apartment building), a room (part of a house or apartment).

Also, housing can be divided according to the degree of comfort: elite housing (an object with landscaping and a place to rest nearby, convenient location, infrastructure, high-quality building materials, complex and high-quality utilities), high-comfort housing (the possibility

of location in any areas of the city, a good view from the windows, individual layout, the presence of several bathrooms, high degree of sound insulation, nonstop security services, parking), economy class housing (accommodation in any area, panel and brick buildings) and lower economy class (designed for people with low solvency, located in non-prestigious areas). Apartments can be divided depending on the number of rooms: studio apartments, 1-room, 2-room, 3-room and multi-room. (A. Asaul, 2013, pp. 71-77)

The commercial real estate market

It was formed in the process of privatization of enterprises and is focused on rental operations. Commercial real estate objects are divided into income—generating and creating conditions for its extraction - industrial. Income-generating facilities include retail facilities (multifunctional shopping centers, supermarkets), entertainment centers, hotels (luxury hotel, middle-class hotel, apartment hotel, resort hotel, motel, etc.), offices and garages.

Office real estate is usually divided into three categories A, B, and C, depending on the location, type and technical level of buildings, the level of the management company and the service provided. Today, more than 80% of offices are offered for rent and only 20% are for sale. Real estate objects that create conditions for profit include warehouse and logistics complexes, logistics terminals, industrial objects. (A. Asaul, 2013, pp. 80-101)

The land market

It is determined by a variety of transactions depending on the purpose of the site and other factors. A land plot as an object of land relations is a part of the earth's surface with boundaries that are determined in accordance with federal laws. A land plot can be divisible (a plot can be divided into shares without violating its essence, and each of its shares after division is an independent land plot) and indivisible (a plot cannot be divided into independent parts).

Land plots are divided into 7 categories of special purpose: agricultural land (outside settlements, for the needs of agriculture), land settlements (intended for the construction and development of urban and rural settlements), industrial and other special purpose land (used for the activities of industrial, energy, transport, communications, defense and security),

lands of specially protected territories, forest fund lands, water fund lands and reserve lands. (§6 and §7 the Land Code of the Russian Federation)

Each of these main segments can also be further divided, for example, the housing market into urban and suburban, and the non-residential market into commercial, office, warehouse and industrial real estate. However, despite the prospects for development, the land market is developing slowly due to the imperfection of the legal framework and the mechanism of land relations.

3.1.3. Primary and secondary markets

In the primary market, real estate is presented for the first time as a commodity. In this case, the main sellers are the state through its federal, regional and local authorities, as well as construction companies that are suppliers of residential and non-residential real estate. In the secondary market, real estate is considered as a commodity that was previously in use and belonged to a certain owner – an individual or a legal entity. There is such a division in the markets of other goods. However, in the real estate market, the object of purchase and sale of everything is tied to a certain place, city, region. The primary and secondary markets are interconnected. For example, if for some reason the supply of real estate in the secondary market increases, then demand and prices in the primary market automatically decrease. (V. S. Tsyganenko, 2008, pp. 29-32)

3.2. Market components

3.2.1. Real estate as a market object

The concept of "real estate" may seem pretty obvious. Nevertheless, in reality, its appearance does not coincide with the legal essence of real estate, which significantly depends on the peculiarities of the country's economic development, established historical traditions and other factors. According to the Civil Code of the Russian Federation, real estate includes many tangible and intangible objects, such as land plots, subsoil plots, water bodies and everything that is inextricably linked with the land. This includes objects that cannot be moved without disproportionate damage to their purpose, such as forests, permanent plantings, buildings, structures and enterprises as property complexes. In addition, the Civil

Code refers to immovable property air and sea vessels, inland navigation vessels and space objects subject to state registration. (§130 The Civil Code of the Russian Federation)

3.2.1.1. Real estate characteristics

Real estate has key characteristics that distinguish it from other goods. The following are the main properties:

- **Immobility**. It leads to the individual character of any property. Even buildings built at the same time, according to the same project and with equal quality of work, but located in different places, usually have different utility and cost. This leads to the formation of individual prices for real estate objects. (V. S. Tsyganenko, 2008, pp. 5-19)
- **Materiality**. Real estate is always present in the form of material objects. Physical aspects include size, shape, environment and other parameters that determine the utility and, therefore, the value of the property. The gradual loss of characteristics or value as a result of wear and tear is a natural process in the life cycle of real estate. (R.M. Sirazetdinov, 2018, p. 6)
- **Long service life.** Real estate is a commodity that loses its consumer qualities during operation much slower than other goods. This makes his life on the market very long and allows him to use real estate not only to meet personal needs, but also to generate income and profit. Depending on the nature of use, real estate is divided into used for housing (houses, cottages, apartments), for commercial activities (hotels, office buildings, shops, restaurants, etc.), for industrial purposes (warehouses, factories, factories, etc.), for agricultural (farms, gardens) and special purposes (schools, churches, hospitals, nurseries, nursing homes, etc.). (R.M. Sirazetdinov, 2018, p. 6)
- **Manageability**. Management is necessary for each profitable real estate object, including the implementation of repairs, preventive measures, the provision of utilities, control over the receipt of payments, and so on.
- **Uniqueness**. Each property is unique and has characteristics specific exclusively to this object, which makes it different from other real estate objects.
- **Fundamentality.** In standard situations, real estate cannot be lost or stolen (O.S. Belokrylova, 2009)

Also, the peculiarity of real estate as a commodity is that it is simultaneously at the center of combining economic and public interests. Public interests imply state registration and municipal administration. The economic ones are lending, taxation, investment, development. (T. V. Chibikova, 2015)

3.2.1.2. Classification of Real Estate Objects

Identification of real estate objects plays an important role in making strategic decisions, such as reproduction, business expansion and investment optimization. The variety of real estate objects is due to several parameters, for example, by origin: created by nature (land plots) and created by man (buildings and structures). In terms of scale, these can be land plots, condominiums, residential buildings, apartments and rooms. (Zhigalova, 2012)

Another aspect is the purpose of use: residential real estate that is used for living (houses, cottages, apartments); commercial facilities that are intended for use for economic gain (hotels, office space, shops, restaurants, service stations); industrial real estate for industrial purposes, such as factories, warehouses; objects used in agriculture, including farms and related land plots; special-purpose real estate such as schools, churches, government buildings. (D. I. Arsabaev, 2019) (R.M. Sirazetdinov, 2018)

Also, real estate objects can be classified according to the purpose of ownership: for commercial purposes, for the residence of the owner, as investments, for development and expansion, as well as for the consumption of non-renewable resources.

The level of readiness of objects is also taken into account: objects already commissioned, objects under construction and objects requiring major repairs or reconstruction.

3.2.2. Subjects of the real estate market

3.2.2.1. Groups of participants

Depending on the position in the real estate market, all its participants can be divided into three groups:

1. Sellers are owners of immovable objects. They can be citizens, enterprises, the state and foreign persons.

2. Buyers are investors who invest their own, borrowed or attracted funds in an investment project and ensure their intended use. Investors can be both individuals and enterprises. They act most often as owners of real estate objects, make investment decisions and bear basic market risks due to the functionality of the real estate object, the purpose of its construction and operation.

3. Professional participants are legal entities that ensure the functioning of the market in accordance with the laws and regulations of the country. They are real estate firms, appraiser agencies, insurance companies, banks, government agencies:

- **Creditors or financial institutions.** They provide financing and help their clients to purchase real estate with borrowed funds. Banks operating in the real estate market can choose various strategies, such as providing loans secured by real estate, investing in real estate modernization projects and creating their own real estate structures. The main activity of credit institutions in the real estate market should be participation in investment and development projects, as well as the provision of mortgage loans for the purchase of housing. (I. T. Balabanov, 2003)
- **Developer.** A developer is an organization that selects a cost-effective project, rebuilds a plot of land for new use, develops a functional and marketing idea for real estate, searches for investors and attracts contractors, and control construction work. The developer has two main goals, which are social in nature (rational use of land resources for the development of public infrastructure) and commercial (increasing the value of invested capital). (G. Armanshina, 2019)
- **Construction company.** A construction company is an organization that builds new projects by the agreed deadline for a fee based on contracts for capital construction. They can work on residential, commercial or industrial projects and can be both large corporations and small businesses.
- **Appraisers.** The role of an appraiser in the real estate market is constantly increasing, as no transaction, whether it is lending against the security of real estate, insurance, revaluation of fixed assets, division of property, contribution to the authorized capital or purchase and sale, can be completed without a preliminary assessment of the value of real estate. Real estate appraisal is an objective opinion of

an independent party regarding the market price of an object in accordance with the task, appraisal procedure and ethical standards of appraisers. Therefore, many large financial and investment organizations, as well as banks, do not conduct transactions without an independent appraisal. (I. T. Balabanov, 2003)

- **Real estate agents (realtors).** Real estate agents help buyers and sellers navigate the market by providing consultation, marketing services and making deals. They may work independently or in a real estate agency. The activities of agents are of great social importance. Today, most transactions in the market are complex chains, most often involving up to 10 participants. Housing subsidies and mortgage loans are often involved in these transactions. The realtor's unprofessionalism can lead to the failure of the transaction, loss of money or even the apartment. Therefore, the main task of the agent is to properly build a chain of relationships and constantly monitor the process of buying and selling the object. Recently, there has also been a growing interest in services related to rental housing. In this case, realtors are intermediaries and only organize a meeting between the tenant and the landlord. (G. B. Dergachev, 2017)
- **Authorities.** The authorities play an important role in the real estate market, regulating the issues of property ownership, taxes and building permits. They can also participate in the development of public infrastructure and support affordable housing initiatives.

The relationship between market participants is a rather complex mechanism. To visualize this mechanism, the scheme below shows how market participants help each other and what benefits they receive:

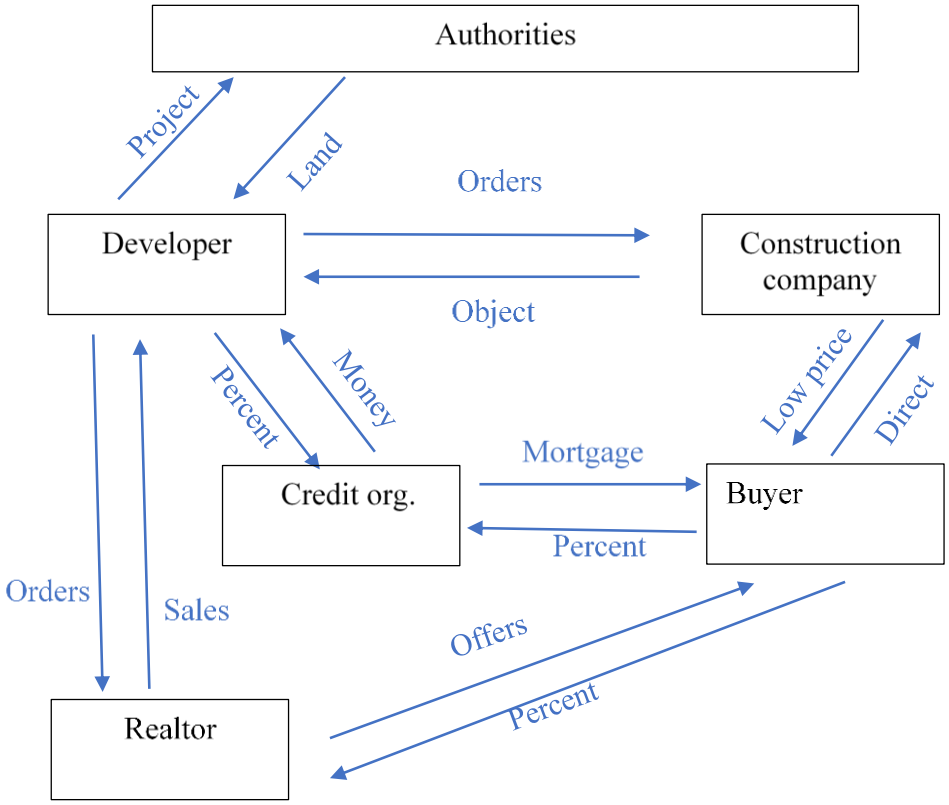

Figure 1. The relationship between market participants. (S.A. Khamdambekov, 2021)

Thus, the diagram illustrates the interaction of various participants of the residential real estate market. It is based on the authorities. They create favorable conditions for all participants. Their functions are to create a regulatory framework, participate in project organization and hold auctions, where land plots are distributed among developers.

Developers, in turn, develop projects, business plans, select optimal locations for construction, obtain all necessary permits and approvals from state authorities, and pre-select contractors, manufacturers and equipment suppliers, bringing together all key players.

The winning developer then engages financial institutions (investors) to finance the project in exchange for a share in the profits or interest on the loan. Developers also engage construction companies and provide them with orders on their behalf. These construction companies undertake the construction of the property. Subsequently, upon completion of construction, the developers turn to realtors who assist in selling the properties, earning commissions on the sales.

Buyers have the opportunity to purchase real estate through realtors or, in the case of the primary market, directly enter into contracts with the developer. Financial institutions (banks), along with government agencies and developers, can attract buyers by offering attractive mortgage rates, which helps accelerate real estate sales and stimulate the market.

To ensure the smooth functioning of the real estate market, it is crucial for government agencies to create the most favorable conditions for all its participants. This includes regulation and making necessary adjustments when necessary. (S.A. Khamdambekov, 2021)

3.2.2.2. State regulation

A distinctive feature of the real estate market is the high degree of influence of the state in regulating the market. The need for state regulation of the real estate market is due to the fact that in addition to the classical market functions, the real estate market also performs a social function, which is to provide housing for the population and improve the welfare and quality of life of citizens of the state. Given the high standard of living of the Russian population, the state of the real estate market in our country has special attention and significance for public authorities.

The state performs two functions in the real estate market:

1. Regulatory function – the state forms an integral and consistent regulatory framework for regulating the real estate market. This includes legal regulation (federal legislation, legislative acts of the Russian Federation, regulatory regulation at the level of municipalities), economic regulation (taxation, benefits and incentives), as well as infrastructure support for activities in the real estate market (real estate accounting, registration of rights to real estate and transactions with it, notary, licensing of professional activities, judicial control and arbitration, antimonopoly measures).

2. Economic function – the authorities involve real estate in economic turnover in order to obtain funds for financing the public sector and investments in the development of the territory. (G. B. Dergachev, 2017)

Based on these functions, it is possible to determine the main objectives of the state's activities to regulate the real estate market:

1. using real estate as an investment resource, as well as an incentive to attract funds from institutional and private investors to the economy. For enterprises, this makes it possible to reduce risks in the implementation of investment objects, reduce the cost of guarantees, increase business profitability, and also ensure the growth of stock liquidity. Jobs for the population are being preserved and developed, the reliability and profitability of purchased securities are increasing. The state also receives an increase in budget revenues and capital turnover, an increase in the liquidity of shares, an improvement in the ownership structure, and the emergence of extra-budgetary sources for infrastructure development.

2. Improving the efficiency of the use of real estate. This contributes to the creation of additional sources of financing, opportunities for enterprises to offer higher quality services, as well as the emergence of a wide range of high-quality housing services for the population on the housing market.

3. Increasing the liquidity of real estate in the secondary market. This helps enterprises to increase their liquidity, creates favorable conditions for changing the structure of assets. The population gets the opportunity to get a housing loan, subsidies, other forms of support, the possibility of using the right to benefits in the construction or purchase of housing. Due to this goal, the state replenishes the budget by taxation of real estate turnover in the secondary market, accumulates the necessary information to form an objective system of accounting and valuation of real estate.

4. Formation of a system of state control over the current economic activities of local self-government bodies. This gives a clear idea of the responsibilities of enterprises and the population and the responsibility of the state, thereby reducing the time to solve problems when contacting the authorities., and there is also a body representing the interests of local governments in the formation of regional policy.

The existing system of state regulation of real estate in the Russian Federation needs to be improved, since there is no system of market valuation of objects, which leads to a constant underestimation of the value of property, a shortage of rental payments generates corruption, since the state is the largest owner of real estate and rents real estate at rates significantly lower than market rates. The development of land legislation lags behind the development of other branches of legislation regulating the turnover of real estate, which leads to inconsistencies in the regimes of legal use of land plots and buildings and structures located on them. (Olga Chashchina, 2017)

Thus, despite the steady trend of increasing income received from the use of real estate, these incomes lag far behind the prevailing market indicators, which is the basis for changing approaches to real estate management.

3.3. Factors influencing changes in the real estate market

The real estate market is influenced by various factors: economic, political, socio-cultural and demographic.

Political aspects are shaped by the restrictions imposed by politics in the country, including election programs, the socio-economic direction of the ruling party, military actions, the economic policy of the authorities and regulatory norms for the real estate market. Economic factors include the level of economic development of the country, the growth rate of the gross national product, the monetary policy of the state, inflation, business activity, employment and purchasing power of the population. Socio-cultural aspects include socio-professional structuring of the population, consumer preferences, income, living conditions and other aspects. Demographic factors that also influence the real estate market include population size and growth, fertility and mortality rates, population density, migration, urbanization and other demographic indicators. (O.S. Belokrylova, 2009)

As in all markets, the real estate market has its own characteristics that affect supply and demand. There are many factors influencing the demand in the real estate market. Some of them are common and do not depend on the region or city (external factors). These include household incomes, conditions and volume of housing loans to buyers, the share of mortgage

transactions, macroeconomic indicators (GDP growth rates, employment rate) and inflation. Internal demand factors that depend on the region include the volume of solvent demand, the reputation of developers, the need for housing, the propensity of the population and investors to purchase housing and price expectations.

In addition to demand factors, there are also internal and external supply factors in the market. The internal ones include the specific housing stock, the financing of construction by market entities, the investment strategy of developers, the volume of supply, the marketing and pricing strategy of sellers. External factors are the conditions of the developer's entry into the market, the availability of alternative investment facilities, financing of construction and the cost of construction. (Olga Chashchina, 2017)

4. Practical Part

4.1. General characteristics of Krasnodar Region

Krasnodar region is one of the most economically developed regions of Russia. The economy of the region is significantly influenced by a number of factors, such as its favorable geographical location and high potential in resources and personnel. The location near the Azov and Black Seas, the variety of landscapes and a good network of transport routes contribute to the development of the industrial sector, agriculture and recreational infrastructure.

The Krasnodar region ranks third in terms of population among all regions of the Russian Federation and at the end of 2023 is estimated at 5,826,722 people. For several years, the region has been the leader in the country in terms of the volume of new housing. In 2023, the Krasnodar region took second place after the Moscow Region, commissioning 7.6 million m^2 of housing. (Krasnodarstat, 2024)

As a result of these factors, there has been an increase in residential real estate prices in Krasnodar and the Krasnodar region in recent years. This growth is partly due to high demand, especially in the primary market, as well as favorable conditions for investment. However, real estate prices in the region may vary depending on the city and type of property.

4.2. Primary market vs secondary market

Being two components of a single market, the primary and secondary real estate market mutually influence each other, which, first of all, manifests itself in the area of pricing. Below is a graph of the average price, expressed in thousands of rubles, per 1 square meter in the market of primary and secondary housing in Krasnodar region by quarters from 2017 to 2023:

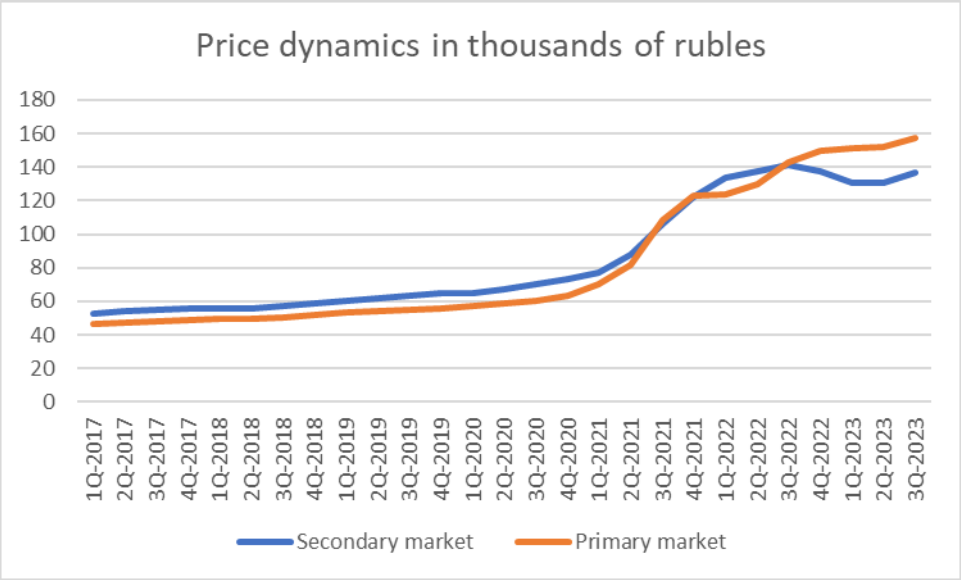

Figure 2. The dynamics of the price per 1 m^2 in thousands of rubles. (SberIndex, 2024)

As shown in the Figure 2, between 2017 and 2021, housing prices grew slowly in both the primary and secondary markets. However, in 2021 there was a sharp jump in prices, and by the end of the year the average cost of 1 m^2 in the primary and secondary markets reached 123 thousand rubles. The increase was 48.20% and 40.41%, respectively, compared to the end of 2020. This growth is associated with various factors. However, the main reason is the imbalance between supply and demand.

A significant change in prices was influenced by an increase in construction costs. Increase in the cost of construction materials caused by global price increases (the cost of many materials more than doubled during the year), inflation and changes in exchange rates. There was also an increase in labor costs. Restrictions imposed during the pandemic, such as the self-isolation regime, led to an increased need for more comfortable housing. Increased availability and volume of mortgage loans, as a result of concessional mortgage programs (up to 7% per annum), also impacted demand growth. Low interest rates on deposits have made investing in real estate more attractive, while uncertainty in the economy and rising exchange rates have contributed to a growing interest in housing as a means of saving. The combination of these factors led to a significant increase in demand for housing, while the amount of affordable housing was decreasing.

In addition, primary and secondary housing are two parts of the same market. Therefore, the high price set by construction companies for primary real estate has also influenced the increase in prices for secondary real estate. Moreover, it was more profitable to buy secondary housing at that time, because it can be used immediately and reduce repair costs. And when its cost is the same or even slightly cheaper than primary housing, it is also an opportunity to invest. (Tugaeva, 2021)

The dynamics of price growth remained positive in 2022, however, the growth rate is much slower than in 2021. The reason for this was the military situation in the country. The government has closed the airport in Krasnodar, which has always been the main terminal for the migration influx from other regions, due to its proximity to military operations. In addition, at the beginning of 2022, a moratorium on construction was introduced in the resort towns of the Krasnodar region, which stopped the activities of construction companies and created fears for buyers. (Dzen, 2022)

In the 3rd quarter of 2022, an abnormal situation occurred, which lasted until the 3rd quarter of 2023. The price per 1 square meter in the primary housing market was higher than in the secondary market. (Figure 2) This phenomenon is associated with the parameters of the cost of a mortgage loan, since most transactions in the real estate market are carried out with borrowed funds. Preferential mortgages, which reached 8% per annum in 2023, apply only to the purchase of primary real estate, while mortgages for secondary housing have double-digit values. That is, the secondary market is cheaper, but there is no preferential mortgage. In the primary market, the cost of housing is higher, but at the same time buyers can take out a fairly affordable mortgage loan and feel comfortable. For the third quarter of 2023, the prices of 1 square meter in the primary and secondary markets are 157 and 137 thousand rubles, respectively. This phenomenon in the market is likely to continue as long as there is such a difference in mortgage rates. (Gustova, 2022)

4.3. Demand analysis

4.3.1. Families in the residential real estate market

The most common buyers of residential real estate are families who are planning or already have children. Couples in a relationship or married make up 84% of all buyers in the market.

On the number of families in the Krasnodar region and their size depends on the level of demand in the real estate market.

According to statistics, 71% of the region's population (4,121,221 people) are in family units. This includes couples with children (39%), couples without children (33.8%), mothers with children (22.6%) and fathers with children (4.6%). (Krasnodarstat, 2023) It should be noted that among married couples with children, 52.44% of families have 1 child, 37.24% of families have 2 children and only 10.32% of families have many children (3 or more children). (Figure 3)

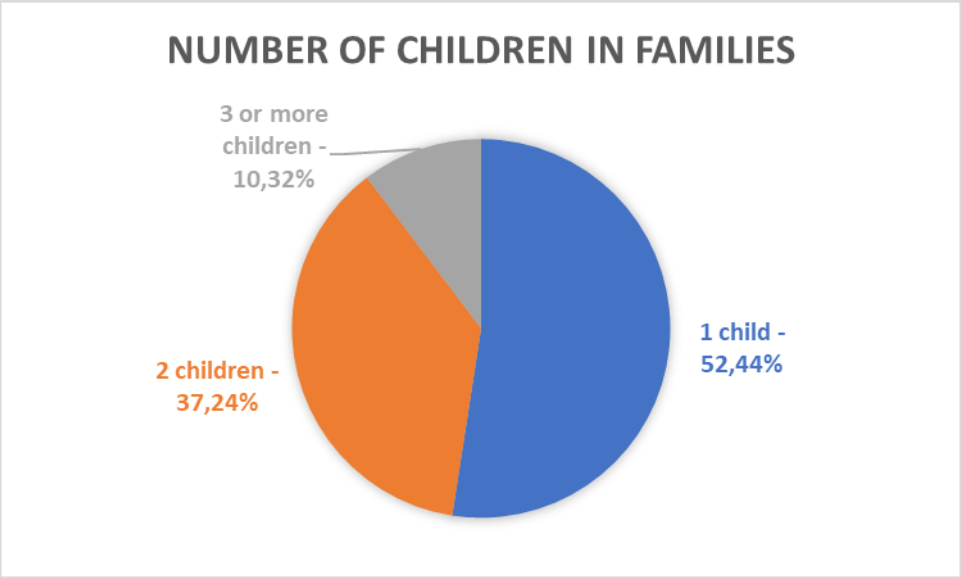

Figure 3. Percentage of children in families in the Krasnodar region (Krasnodarstat, 2023)

Based on this data, it is possible to assume what kind of real estate will be interesting to families-buyers. The more members there are in a family, the larger the area of housing they need. Since most families have 1 or 2 children, they are likely to demand 2-room apartments. One-room apartments are also popular for young families who are just planning to have a child. Also, an important factor for families in purchasing housing is the infrastructure near the house - kindergartens, schools, hospitals, parks, good transportation accessibility.

In Russia there are several large social programs to support families in the purchase of real estate. Maternity capital, which is paid at the birth of the first (587 thousand rubles) and second (775,6 thousand rubles) child. Improvement of housing conditions and mortgage

payments are the most popular way of using this state support. There is also a family mortgage program at 6% per annum. It can be used by families in which a child was born in the period from 1.01.2018. Families with 3 or more children can take advantage of state support for the repayment of a mortgage loan of up to 450 thousand rubles, as well as qualify for a free land plot.

4.3.2. Migration growth

One of the main factors influencing the formation of demand in the real estate market is population growth. In 2023, the population in the region is 5,826,722 people. Krasnodar Region is one of the most attractive places to move from regions more remote from the central regions of Russia: The Far East, Western and Eastern Siberia and others. The region is attractive for migrants not only because of its favorable climate and high quality of life, but also because of the availability of jobs and investment opportunities. Over the past 5 years, more than 200,000 migrants have moved to this region. (Figure 4) This number could have been higher if the martial law in Russia had not contributed to a reduction in the number of migrants to this part of the country.

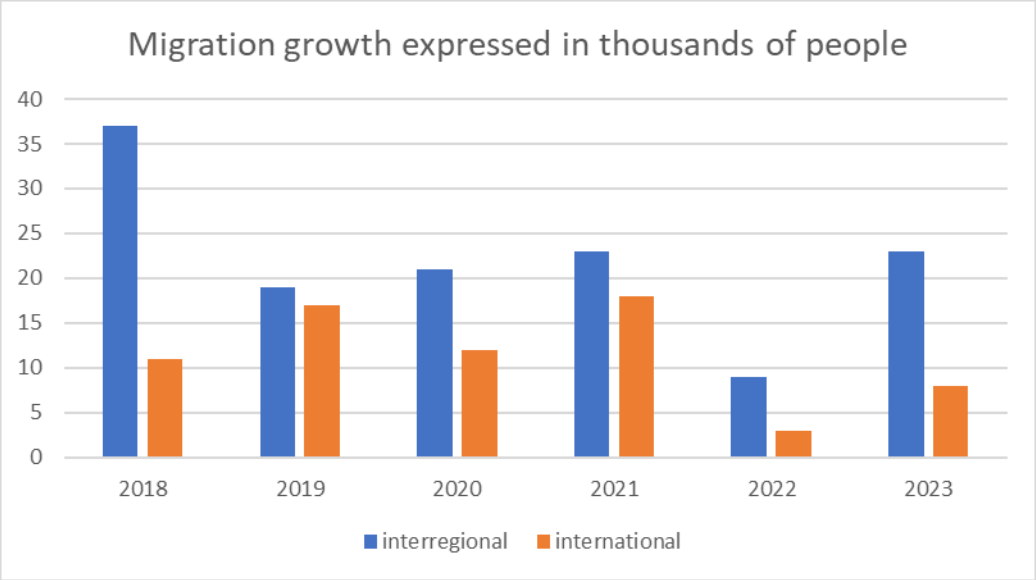

Figure 4. An illustration of migration growth in the period 2018-2023. (Rosstat, 2023)

Over the last 5 years, the region has experienced unstable but positive migration growth. While in 2018 it was the highest (47570 people), in 2022 it was the lowest (11892 people) due to the political situation in the country and, related to it, the introduction of some

restrictions. However, the region did not lose its migration advantages and the situation started to improve rapidly. Already in 2023, 30761 people moved to the region. The considered demographic dynamics indicates a continuous growth of consumer demand in the real estate market on the part of migrants.

4.3.3. Income of the population

Income of the population is an important component of the real estate market, as it directly affects the demand for housing and changes in real estate prices. Below is a Figure 5 of average per capita income of the population in Krasnodar Region on a quarterly basis from 2017 to 2023. These incomes include wages and salaries of employees; income from entrepreneurial and other production activities; social payments; property income; payment of income on government and other securities; investment income; and other cash receipts.

As the region is located in the south of the country, it has a good geographical position next to the Black Sea, a favorable climate and fertile soils. Thanks to this, many industries are developed in Krasnodar Region, with manufacturing, sales and tourism in the top 3. The region is consistently ranked first in the country in terms of wheat, corn, sunflower and rice production. Tourism, hotel and restaurant business are actively developed in such resort cities as Sochi, Gelendzhik, Anapa. Of course, in these industries the main activity falls on May-October (sowing and harvesting of plants, tourist season on the coast). The 4th quarter is also a good quarter mainly because of December and the pre-New Year period, the level of sales of consumer goods is increasing, hence incomes are growing. Therefore, the level of income in Q2, Q3 and Q4 is noticeably higher than in Q1. In addition, the graph shows the annual growth of income. For example, the average per capita income in Q3 2023 amounted to 61,7 thousand rubles, which is 11% more than in the same quarter last year. (Sokolov B.A., 2024)

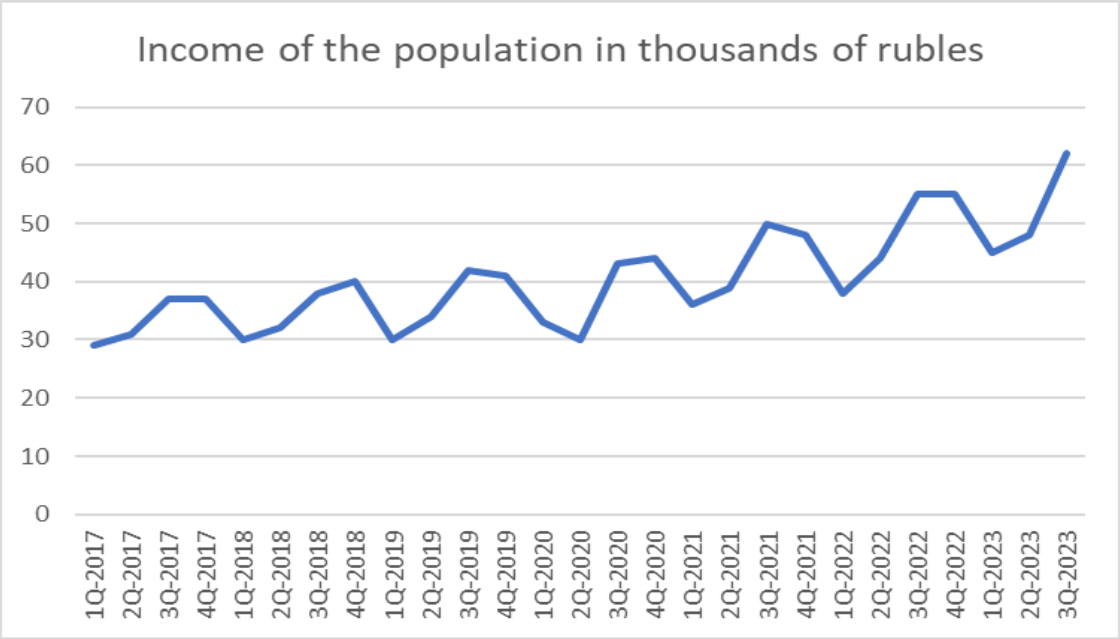

Figure 5. Average per capita income of the population in thousand rubles by quarter. (Krasnodarstat, 2023)

4.4. Supply analysis

In 2023, over 7.6 million sq m of housing was built in the Krasnodar Region by organizations of all forms of ownership and individual developers, an increase of 0.6% on last year's housing commissioned. This indicator ranks second in the country after the Moscow Region. 55% of the total housing commissioned in the region are residential buildings (4,24m sq.m.), and 45% are apartments (3,4m sq.m.). The number of built apartments is 103,6 thousand, of which 34,1 thousand are built by individual developers and 64,2 thousand are built by construction organizations. More than 50% of the built housing belongs to the middle segment, about 30% is economy class. The rest are business and elite classes. (Krasnodarstat, 2024)

4.4.1. Factors affecting the construction process

Construction in the Krasnodar Region is actively developing and is in high demand. The region has the necessary production and resource base, and there are many industrial complexes for the production of construction materials, which determines low logistics costs. In addition, the favorable climate allows construction at any time of the year.

However, there are a number of factors that complicate the construction process. Over the last 2 years, the cost of construction materials and equipment has increased significantly.

Also, companies are facing the issue of import substitution of equipment and disruption of logistics supply chains. Moreover, competition among construction companies in the market is increasing every year and it is becoming more difficult to obtain construction permits from the government. For example, in 2023, some cities imposed a moratorium on the construction of apartment buildings due to the influx of migrants and the lack of social facilities such as schools, kindergartens, and hospitals. (Kazakov, 2022)

4.4.2. Competition among construction companies

The primary real estate market is characterized by high competition, there are more than 50 construction companies in the region. The top 3 developers in terms of housing commissioning in 2023 include DOGMA (385,000 m^2 and 13.55% of the total volume in the region), SCC Group (281,000 m^2 and 9.9% of the total volume in the region) and AVA GROUP (248,700 m^2 and 8.75% of the total volume in the region). (Kholopik, 2023)

In the context of growing consumer demands for quality and price, developers have problems such as declining sales, the need to improve the quality of construction and lower prices. There is also an increase in the number of residential complexes being built with a delay. This leads to an increase in the number of deceived buyers, which increases the level of distrust of housing market participants.

4.4.3. The most attractive cities for investment in the Krasnodar Region

Krasnodar is one of the most developed cities in southern Russia and the administrative center of the Krasnodar Region, with a population of 1.12 million people and a distance of 125 km from the Black Sea. It is the largest economic, cultural and educational city in the region, where several universities and colleges, theaters and museums are open. At the same time, the cost of living there is lower than in resort cities on the coast, which makes Krasnodar attractive for living and investment. The high population density and active development of the city guarantee a high demand for rentals, which makes real estate investments profitable and reliable. The real estate market in the city is stable, and the cost of housing over the past few years shows significant growth. Over the past 6 years, the cost of 1 m^2 of primary real estate has increased 2.3 times and in 2023 is 105 thousand rubles. (Figure 6)

Sochi is one of the most popular vacation cities in Russia, which is characterized by a mild climate, developed infrastructure and a long stretch along the Black Sea. Moreover, 43 km away from the city is the most popular ski resort in the country, where the Olympic Games were held in 2014. The variety of sports and entertainment complexes, high level of service makes Sochi attractive to tourists not only in summer, but also in winter. This creates demand for rental housing all year round, so buying real estate in this city is not only a way to store funds, but also a good tool for passive income. However, buying housing in Sochi is not suitable for everyone, because the price for 1 m^2 of primary housing in 2023 is 332,5 thousand rubles and can be compared with Moscow housing prices. Over the last 6 years the price has increased 3.6 times. (Figure 6)

Novorossiysk is a modern and well-appointed port city with prospects for tourist growth, which creates good opportunities for real estate investors. Novorossiysk offers a variety of residential real estate that can be used both for rent or subsequent sale, and for own residence. Moreover, real estate prices in the city are the lowest of any city on the Black Sea coast, making Novorossiysk attractive to investors with different budget levels. Since 2017, the price of primary residential real estate has increased 2.5 times and at the end of 2023 is 138,3 thousand rubles per 1 m^2. (Figure 6)

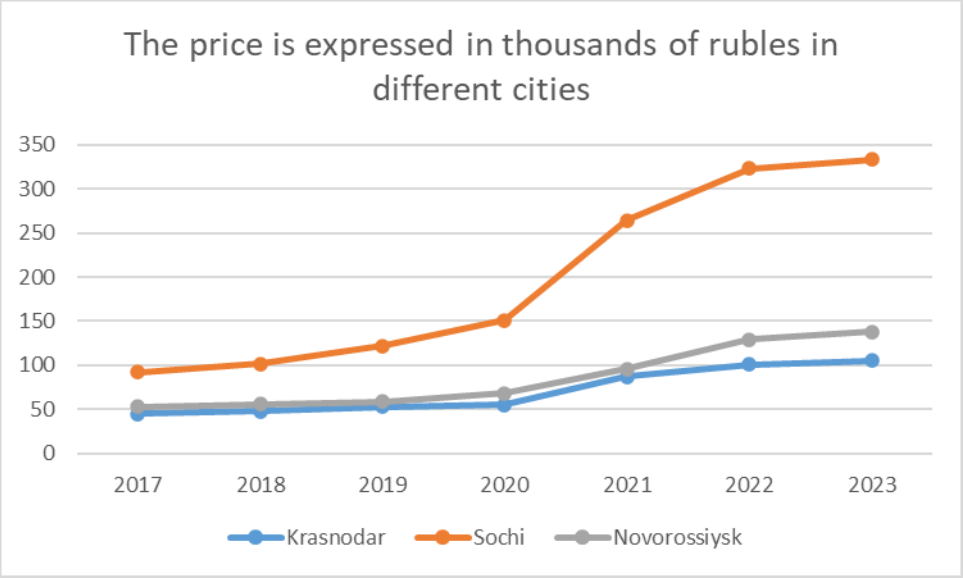

Figure 6. The price for 1 m^2 of housing in thousands of rubles. (Rosrealt, 2024)

4.4.4. Types of offers on the real estate market

According to statistics from the real estate search site, in 2023, 92% of the total number of ads were an offer for the sale of apartments and only 8% of the offer for the sale of houses. The average price for apartments per 1 square meter is 124,3 thousand rubles, and the price for houses is 73 thousand rubles. Since the number of offers for the sale of apartments occupies the majority of the market, it is necessary to study it in more detail. (IMLS, 2024)

Today, developers are actively introducing one- and two-bedroom apartments into their projects, as well as increasing the compactness of all types of housing. The largest number of offers for sale in Krasnodar region in 2023 was 1-bedroom apartments (47% of the total number of ads). (Figure 7) This is the most popular type of apartment, as it can be used both as an investment, and for the residence of young families, and for long-term and short-term rentals (for example, in seaside towns in the summer tourist season). In the second place of the total number of advertisements are 2 room apartments (33%). They are very popular among families with children. Offers for sale of apartments with 3 or more rooms is 15.2% of the total number, and studio apartments are offered to the lowest extent (4.8%). However, the last mentioned are also good investments and can be used as holiday properties for short term rentals, so it is not excluded that builders will develop this type of apartments as well. Due to the abundance of offers in the economy and comfort segments, each construction company offers different options to attract potential buyers, such as non-standard layout, large loggias, closets and pantries.

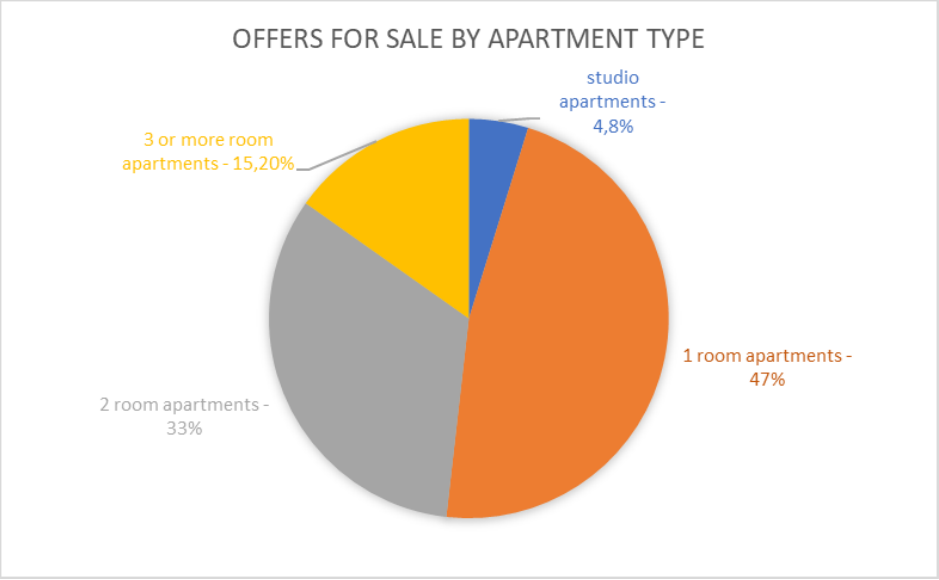

Figure 7. Percentage of types of apartments for sale. (IMLS, 2024)

4.5. Regression analysis

The regression analysis will help identify the main factors affecting the real estate market, as well as assess their significance and contribution to the formation of prices for primary real estate in the Krasnodar region. The results obtained will be useful for construction companies and investors, as well as for government agencies when making decisions in the field of real estate market regulation.

Pricing of residential real estate in Russia and in Krasnodar region, in particular, is influenced by many factors - social, demographic, political, economic and others. However, to conduct regression analysis, the author used important economic indicators such as the inflation rate, the dollar exchange rate, the price of oil, the key rate of the Central Bank and the average per capita income of the population.

4.6. Correlation analysis

The correlation coefficient "r" is used to measure the closeness of the relationship between the indicators. The linear correlation coefficient takes values from -1 to +1. Figure 8 shows that the strongest correlation coefficient of the dependent variable PPH is with the independent variable IP and is equal to 0.79. However, the two weakest coefficients are with KR and OP which are 0.32 and 0.35 respectively. They have no significant effect on the dependent variable PPH, so the author removes these factors and will not use them in further regression model. in addition, multicollinearity (linear relationship between explanatory variables) between variables is not observed, that is, all pairwise coefficients between them are <0.8. Therefore, the remaining three factors (IP, I, USD) can be used in further analysis.

Pearson Correlation Coefficients, N = 27						
	PPH	IP	I	USD	KR	OP
PPH PPH	1.00000	0.79069	0.65234	0.63220	0.32343	0.34839
IP IP	0.79069	1.00000	0.49575	0.48026	0.10143	0.35821
I I	0.65234	0.49575	1.00000	0.10578	0.47370	0.58064
USD USD	0.63220	0.48026	0.10578	1.00000	0.15699	0.14897
KR KR	0.32343	0.10143	0.47370	0.15699	1.00000	0.58961
OP OP	0.34839	0.35821	0.58064	0.14897	0.58961	1.00000

Figure 8. Correlation matrix (own source)

4.7. Regression model

The regression model was made using the dependent variable - primary house price (PPH) and independent variables - income of the population (IP), inflation (I), dollar exchange rate (USD).

4.7.1. Coefficient of determination (R-square)

The value of coefficient of determination (R-square) shows the percentage of variability in the dependent variable that is explained by the independent variables included in the model. The higher the value of the coefficient of determination, the better the model fits the data and explains the variability in the dependent variable.

In this model, the coefficient of determination R-square = 0.8342, which means that about 83.42% of price variability in the primary real estate market is explained by the factors included in the model (inflation, income of the population and dollar exchange rate). And the error is 16.58%. This indicates that this model is not perfect. (Figure 9)

Root MSE	12731	**R-Square**	0.8342
Dependent Mean	76373	**Adj R-Sq**	0.8126
Coeff Var	16.66902		

Figure 9. Model Summary (own source)

4.7.2. ANOVA test

Using ANOVA test, the author tests whether the regression model is useful overall. The p-value connected with the overall F statistic indicates whether the regression model as a whole is statistically significant. If the p-value is less than the significance level (α), there are enough arguments to conclude that the regression model fits the data better than a model without independent variables. To conduct the test, the author uses data from Figure 10.

H_0: $\beta_{IP} = \beta_I = \beta_{USD} = 0$ – no relationship between PPH and IP, I, USD.

H_1: at least one $b_i \neq 0$

Decision (α=0,05):

F= 38,57

p-value <.0001

p-value < α – H_0 is rejected

Conclusion: relationship between PPH and at least one explanatory variable is statistically significant.

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	18753844236	6251281412	38.57	<.0001
Error	23	3727573953	162068433		
Corrected Total	26	22481418189			

Figure 10. Analysis of Variance (own source)

4.7.3. Parameter estimates

Intercept: based on the model results shown in Figure 11, the value of the intercept point is -84688. Since this value is negative, it cannot be interpreted. This can be explained by the fact that economic indicators such as the average per capita income of the population, inflation rate and dollar exchange rate can never be equal to 0. The standard error in this model is 19231, i.e., the observed values deviate from the regression line by 19231 units on average.

IP: due to the t-value for IP is equal to 3.49 and, related to it, p-value equal to 0.002, we can conclude that the average per capita income of the population and prices in the primary real estate market have a statistically significant relationship, since the p-value is less than the significance level (α = 0.05). The β coefficient for this independent variable is 1.34203 and the standard error is 0.38442. Figure 11. This means that an increase in the average per capita income of the population by 1 ruble leads to an increase in the price of 1 m^2 of primary real estate in Krasnodar region by 1.34203 rubles, provided that the indicators of inflation rate and dollar exchange rate remain fixed. This trend is expected, as the increase in the population income leads to an increase in demand for real estate and, accordingly, to

an increase in the price of real estate. Therefore, the trend is considered economically justified.

I: Based on the Figure 11, t-value for I equal to 4.18 and the associated p-value equal to 0.0004, which is less than the significance level $\alpha = 0.05$, allow the author to state that the inflation rate and the price of 1 m^2 of primary housing have a statistically significant relationship. The β coefficient for variable I is equal to 3158.73953 and the standard error is 755.07685. These indicators show that if the inflation rate increases by 1%, the price of 1 m^2 of primary housing in the market of Krasnodar region will increase by 3158.73953 rubles, when all other indicators remain constant. It follows that the increase in inflation leads to an increase in real estate prices. This can be explained by the fact that the inflation rate reflects the general increase in prices, and real estate is no exception. In addition, when inflation rises, people often prefer to preserve their capital from monetary devaluation by investing it in real estate, which increases demand and hence real estate prices. This trend is expected and is considered economically justified.

USD: dollar exchange rate also has a statistically significant relationship with the price of 1 m^2 of housing in the primary real estate market, as the p-value is equal to 0.0005 and less than the significance level ($\alpha = 0.05$). The β coefficient for the variable USD is equal to 1294.71146 and the standard error is 318.49633. (Figure 11) That is, the dollar exchange rate positively affects the price of primary real estate in Krasnodar region. When the dollar price increases by 1 ruble, the price for primary housing increases by 1294.71146 rubles, if other indicators remain constant. This trend is expected and is explained by the fact that some of the construction materials used for housing construction are imported from other countries and paid for in dollars, an increase in the value of the dollar can increase their cost in ruble equivalent. This can lead to an increase in the cost of housing construction, which in turn can increase prices in the primary market. Therefore, the trend is economically confirmed.

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	-84688	19231	-4.40	0.0002
IP	IP	1	1.34203	0.38442	3.49	0.0020
I	I	1	3158.73953	755.07685	4.18	0.0004
USD	USD	1	1294.71146	318.49633	4.07	0.0005

Figure 11. Parameter Estimates (own source)

4.8. The regression equation

Based on the Figure 11 and the results of the regression model, the estimated equation is as follows:

$$PPH' = (-84688) + 1{,}34203 * IP + 3158{,}73953 * I + 1294{,}71146 * USD + \varepsilon \quad (2)$$

To assess the quality of the conducted model, the graph of actual values (PPH) and estimated values of PPH' (based on the obtained regression equation, but without the "ε" error) is presented below. Figure 12. The graph shows the actual (blue line) and estimated (orange line) value in rubles of 1 m^2 of primary housing in the real estate market in the Krasnodar region. The residual is the difference between PPH and PPH'. The smallest deviation was obtained in 4Q-2017, where the real value is higher than the estimated value by 526 rubles. The maximum deviation is in 2Q-2023 and amounts to 33,3 thousand rubles, where also the actual value exceeds the estimated value.

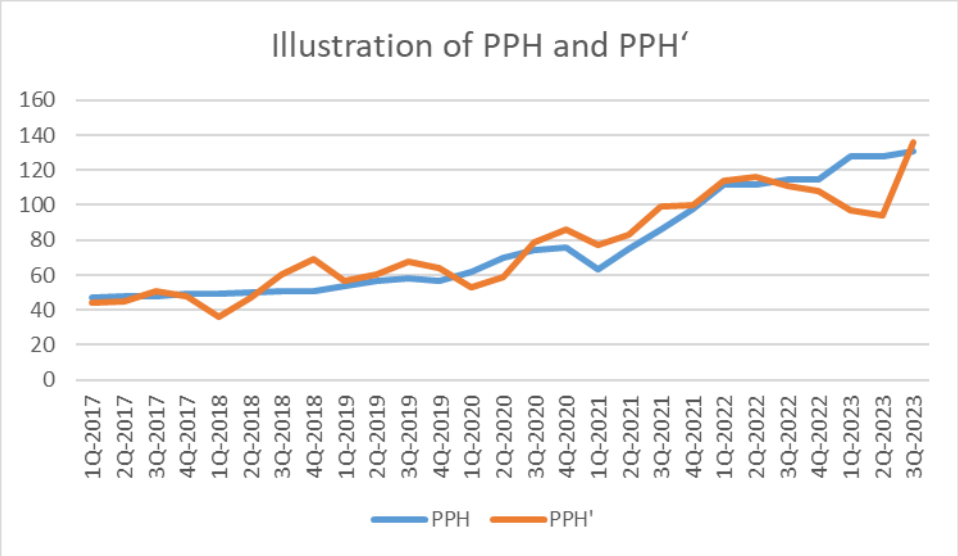

Figure 12. Illustration of PPH and PPH‘ expressed in thousands of rubles. (own source)

4.9. Results of the regression analysis

This regression analysis was aimed at identifying the main factors affecting the primary real estate market in the Krasnodar region, as well as assessing their significance in the formation of prices per 1 m^2. Preparation of the regression model was carried out in several stages. At the stage of correlation analysis, the author decided to remove the variables KR (key rate) and OP (oil price), as they have weak correlation coefficients and do not significantly affect the dependent variable PPH (price for primary housing). Consequently, the explanatory variables in the analysis are income of population (IP), inflation rate (I) and dollar exchange rate (USD). The model reflects the formation of the price per 1 m^2 of primary residential real estate in the Krasnodar region based on the above-mentioned indicators.

The interpretation of the regression model is as follows: an increase in the average per capita income of the population by 1 ruble leads to an increase in the price of 1 m2 of primary real estate in the Krasnodar region by 1.34203 rubles, with an increase in the inflation rate by 1%, the price of 1 m2 of primary housing in the market of the Krasnodar region will increase by 3158.73953 rubles, with an increase in the dollar exchange rate by 1 ruble, the price of primary housing increases by 1294.71146 rubles. These changes act for each variable when all other explanatory factors remain unchanged.

5. Conclusion

In the practical part of this thesis, the author conducted a comparative analysis of primary and secondary real estate prices, supply and demand analysis, as well as regression analysis to determine the factors affecting the price in the primary real estate market in the Krasnodar region.

As a result of the comparative analysis, it was revealed that after a prolonged moderate price increase in 2021, there was a sharp jump caused by an imbalance between supply and demand. Therefore, it was necessary to analyze in detail the demand factors and supply factors in the market. In 2022, the growth dynamics slowed down due to the military situation and the construction moratorium. In the third quarter of 2022, prices in the primary market exceeded prices in the secondary market, related to mortgage loan cost parameters. This phenomenon is likely to continue as long as the difference in mortgage rates persists.

According to the results of the analysis of demand for primary real estate it was obtained that families, especially those with children, make up the main share of buyers in the real estate market. Government support programs, such as maternity capital and family mortgages, contribute to increased affordability of housing for families. Demand is also influenced by population growth due to migration to the region. Over the past five years, more than 200,000 migrants have been registered in the Krasnodar Region. Despite temporary fluctuations due to the political situation, the migration flow to the region remains positive. And, of course, income levels affect the purchasing power of the population. The stable annual growth in average per capita income is due to activity in various economic sectors, including manufacturing, tourism and agriculture.

The supply analysis proved that the Krasnodar Region is actively developing in housing construction, ensuring a high supply in the market. In 2023, more than 7.6 million square meters of housing was built in the region. In terms of real estate commissioned, the Krasnodar Region ranks second in the country, second only to the Moscow Region. Despite the large number of favorable factors contributing to
successful construction, developers have several difficulties related to the increasing cost of construction materials and equipment, problems with import substitution, disruption of logistics supply chains, and there is also a lot of competition among sellers. In order to

remain competitive in the market and increase real estate sales, developers are actively introducing compact apartments into projects, which meets the needs of young families and investors. The market offers a variety of housing options in the economy and comfort segments, attracting buyers with various amenities and layouts.

Residential real estate offers were also analyzed by location for more detailed market research. Krasnodar, Sochi and Novorossiysk present different opportunities for real estate investment on and near the Black Sea coast. Krasnodar is characterized by a stable market, attractive housing costs and high rental demand. Sochi attracts tourists all year round, which creates a constant demand for rentals and real estate investments, but the cost of housing here is high. Novorossiysk offers affordable real estate prices and prospects for tourism growth, making it attractive to investors with different budgets.

Regression analysis was used to study price changes in the primary real estate market due to changes in critical economic indicators. This analysis proved the relationship of selected indicators with the price per 1 square meter. According to the result of the regression model, the increase in inflation rate, dollar value and average per capita income of the population leads to an increase in the price per 1 m^2 of primary real estate. Figure 12 shows the effectiveness of the prepared model, which can be used to forecast prices using indicators of variables.

6. References

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7. List of pictures, tables, graphs and abbreviations

7.1 List of pictures

7.2 List of tables

8. Appendix

Table 1 contains the data that were used for regression and correlation analyses.

	PPH	IP	I	USD	KR	OP
1Q-2017	46628	29 105	4,62	58,25	9,92	52,29
2Q-2017	47564	31 120	4,19	57,48	9,33	47,86
3Q-2017	48214	36 568	3,37	58,42	8,83	53,23
4Q-2017	48806	37 209	2,46	58,13	8,08	63,74
1Q-2018	49206	29 728	2,26	56,56	7,5	66,06
2Q-2018	49666	31 997	2,38	62,69	7,25	75,12
3Q-2018	50644	38 201	2,99	65,2	7,33	77,24
4Q-2018	51457	40 077	3,88	67,55	7,58	60,61
1Q-2019	53533	29 962	5,17	65,83	7,75	65,44
2Q-2019	56628	33 669	5	64,58	7,67	69,01
3Q-2019	57797	41 704	4,3	64,39	7,17	62,31
4Q-2019	56533	41 435	3,43	63,56	6,42	63,86
1Q-2020	62132	32 751	2,4	66,5	6,08	40,78
2Q-2020	70092	30 044	3,1	72,13	5,17	32,8
3Q-2020	74292	42 884	3,57	73,45	4,25	43,05
4Q-2020	76043	43 842	4,43	75,92	4,25	45
1Q-2021	63122	35 738	5,57	74,13	4,33	60,79
2Q-2021	74636	39 343	6	74,15	5,17	69,45
3Q-2021	86318	49 537	6,86	73,5	6,58	73,57
4Q-2021	97596	48 452	8,31	72,46	7,83	76,08
1Q-2022	111537	38 277	11,52	85,5	16,17	89,74
2Q-2022	111854	44 477	16,94	67,29	12,5	89,47
3Q-2022	115421	54 769	14,36	59,43	7,83	77,12
4Q-2022	115376	55 382	12,18	62,08	7,5	65,95
1Q-2023	127932	44 510	8,76	72,94	7,5	58,27
2Q-2023	127805	48 356	2,69	81,69	7,5	57,76
3Q-2023	131236	61 725	5,15	93,9	11,17	74,46

Table 1. Data used in regression and correlation analyses. (Own source)