



Магистерская диссертация

Подготовлена в рамках проектного семинара

«Real estate investments and valuation»

Determinants of Residential Real Estate
Prices. Bubbles Detection.

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Relevance & Motivation

Only few articles address the current state of real estate market in Russia, the economic drivers for pricing and the effect of preferential mortgages. As well, even fewer apply empirical analyses.

Motivation

Macroeconomic, demographic, income, mortgage pricing factors are the important **determinants** of housing demands and consequently **real estate prices** (Whitehead and Williams, 2011).

The efficiency of government regulation is highly influenced by adequate economic instruments, a legal framework, and effective enforcement in place

Policy makers might use this information to design effective regulations and incentives to support affordability and market stability

Real estate prices influence investment decisions and development strategies

The understanding of price determinants might help investors and developers make appropriate choices, impacting urban planning, infrastructure, and economic growth

The effect of the preferential mortgage program introduced in 2020 on real estate prices in Russia is important for policy evaluation

Assessing the program's impact might help policymakers to determine its effectiveness. They can use this information to improve existing policies or design new ones to better support housing affordability and market stability

Research problem & Motivation

Core hypothesis: the macroeconomic factors explain the volatility in residential real estate prices in Russian regions. Furthermore, the effect of the preferential mortgage programme on the degree of their impact and the state of real estate market as a whole is significant.

Object - the primary residential real estate in the regions of Russia

Subject - the relationship between macroeconomic factors and the price of primary residential real estate in the Russian regions



The **tasks** of the paper are the following:

- to find and analyse the **literature** exploring determinants of primary real estate prices and investigating techniques to detect bubbles;
- to make **hypotheses** about the relationship between macroeconomic factors and residential real estate prices in the primary segment and about the potential existence of bubbles in the Russian regions' markets;
- to define the **methodology** for testing the proposed hypotheses;
- to prepare the appropriate for the analysis dataset;
- to **construct regression models** on panel data and **GSADF** tests to examine the proposed hypotheses;
- to **compare** the obtained results with the existing literature on the sphere of research;
- to identify **limitations and areas for further research**



Novelty

Theoretical contributions

- Only **few articles address the current state** of real estate market, the drivers for pricing and the effect of preferential mortgages. Most of the researchers pay attention to the investigation of the influence of the physical characteristics of real estate on its prices
- The papers in most cases apply **illustrative analysis** or **simple regression models**, which casts doubt on the conclusions they come to. Therefore, the academic novelty is also based on the methodology that we apply in this research.
- Due to the **lack of detailed research on Russian regions**, the choice of regions instead of Russia as a whole or Moscow market can be considered as novelty

Practical contributions

- It is worth understanding, which factors influence prices, what the situation in the market is going to be and whether there is a bubble in the market and soon it will explode. This research allows us to make **more economically rational decisions, make effective investments and reduce time and material costs**
- The construction of **financial models** for developers' projects implies forecasting of real estate prices, which in most cases are constructed in line with the forecasted inflation
- The research might help **developers** to make **appropriate strategies** in line with current economic conditions as well as decisions regarding the entering new regions as it identifies the overheated markets
- Having detailed insights about price determinants and their change over time will be helpful for the **policymakers to develop appropriate framework**



Literature Review (1/3) – Determinants

| Author(s) | Sample | Object & Indicators | Results |
|----------------------------|--|---|---|
| Mohan et. al (2019) | 2000 - 2017 US market | House Price Index (HPI) 30-year mortgage interest rate (IR), Consumer Price Index (CPI), Dow Jones Industrial Average (DJIA), and unemployment rate (UR) | DJIA + CPI + HPI + Interest rate – Unemployment rate – |
| Savva (2018) | 2005-2016 24 countries | House Price Index (HPI) Population, Unemployment, Growth, Stock Returns, Construction Cost, Inflation Rate, Lending Rate | Population + Economic growth + Stock returns + Inflation + Construction cost + Lending rate – Unemployment rate – Population ✕ |
| Ding (2022) | 2005-2020 US market | House Price Index (HPI) Population, Stock Price, RGDP, Mortgage Rate, Unemployment Rate | Stock growth + Economic growth + Mortgage rate – Unemployment rate – Population growth ✕ |
| Engerstam (2021) | 1996–2018 Sweden cities 1990–2018 German cities | Apartment prices Population, Apartment stock, Disposable income per capita, Mortgage interest rate, Unemployment rate | Population + Disposable income + Apartment stock – + Mortgage rate – Unemployment rate – |

The reactions of the same factors are **smaller in Germany** than in Sweden.



Literature review (2/3) - bubbles

| Author(s) | Sample | Object & Indicators | Results |
|---|--------------------------------------|---|--|
| Wang et. al (2018) | 1995Q4 - 2015Q3 Australian market | Home value index Mortgage interest rate, Average weekly earnings, AU S&P/ASX 200 stock market index, Sentiment Index, Unemployment rate, Population, Inflation | Consumer sentiment + Mortgage interest rate - Stock market index + Unemployment rate - Population, Average weekly earnings ✗ Long-term equilibrium; short-term changes self-correct over the long term → no bubble in the market |
| Asal (2019) | 1986Q1-2016Q4 Sweden market | Real house price Aggregate household real disposable income, mortgage rate, real effective exchange rate, housing stock, unemployment rate, population, real household debt, and rent | REER + Mortgage rate - Disposable income + Housing stock - Population, real housing debt, rent ✗ Disequilibrium in the short-run is corrected over time, but can take decades to return to equilibrium → market is likely to be in a bubble |
| <p>VECM: highly sensitive to model specification, requires data to be integrated of order 1 and to be cointegrated and as well, is limited in real-time monitoring and early detection of emerging bubbles in the housing markets</p> <p>GSADF is a better methodology than the VECM for identifying bubbles, particularly in real estate markets, for the following reasons: ability to detect multiple bubbles, real-time monitoring capabilities, better handling nonlinear dynamics and straightforward interpretation (Bertelsen, 2019; Ahmed et al., 2021).</p> | | | |
| Ahmed et al. (2021) | 1972-2018 Pakistan | House prices | Multiple episodes of the bubbles in the house prices for the three strands of analysis : annual and quarterly (two episodes) and monthly (three periods) |
| Cevik and Naik (2023) | 1994-2022 Lithuania | House price Price-to-rent | Prices: bubbles in all the major cities and at the national level (coincides with the period of the COVID-19 pandemic) Price-to-rent ratio: only in one city and also during the pandemic |
| Sobieraj and Metelski (2021) | 2006Q3-2021Q1 Polish cities | House price Price-to-income | Prices: signs of explosive behaviour in most of the investigated cities Price-to-income ratio: explosive behaviour only in the 2 cities |



Literature review (3/3) – Russian market

Petrova (2023) : **illustrative analysis** (Moscow and Moscow Region)

Key rate, the volume of mortgage debt, the volume of consumer loans, the mortgage rate, demand, income, the cost of housing, the annual volume of housing commissioning, level of debt burden of construction companies

Kolmakov et al. (2022) **divide the history** of the modern housing market into **two periods**: from the **turn of the century till 2013** and **from 2013 till the 1Q2021**. The first period - the **inflation of the bubble**, the second period - **a cooling state**. In the first period - **the investment demand for housing** and **"self-fulfilling expectations"**. In the second period - **the traditional demand for housing**. However, they **did not construct any econometric models**

| Author(s) | Sample | Object & Indicators | Results |
|-------------------------------------|---|---|---|
| Salnikov and Mikheeva (2018) | 2010 - 2016 Moscow market | Residential real estate price Macroeconomic factors Real estate market indicators Housing lending indicators Income level indicators | Level of income and economic condition USD/RUB exchange rate + (monthly models) Urals crude oil (in dollar terms) +, Construction costs + (yearly models (dollars)) USD/RUB exchange rate +, Construction costs + (yearly models (rubles)) |
| Nikitina (2023) | 1Q2000-2Q2012 Russian market | The real price of oil (<i>oil</i>) - exogenous variable Endogenous variables: real GDP, real interest rate, housing price index, uncertainty index | Oil price shock + Real interest rate shock - Uncertainty shock + |
| Tripathi (2019) | 1970 – 2017 43 countries (with Russia) | House price Rent, Price-to-income ratio, Price-to-rent ratio, Urbanisation, GDP, Population age structure, Inflation, Broad money, REER, Employment in services, Interest rate | Rent, Price-to-income ratio, Price-to-rent ratio, Urbanisation, GDP, Population age structure, Inflation, Broad money, Real effective exchange rate + Employment in services - Interest rate X |



Hypotheses development (1/2)

- **H1: The unemployment rate, economic uncertainty, USD/RUB exchange rate, IMOEX price and oil price are significant factors determining residential real estate prices.**
 - H1.1. **Unemployment rate** has a slight **negative significant impact** on residential real estate prices in both periods investigated (Tripathi, 2020).
 - H1.2. **Economic uncertainty** has a **positive significant** relationship with prices in both periods investigated (Nikitina, 2023)
 - H1.3. **USD/RUB** exchange rate has a slight **positive relationship** with residential real estate prices in both periods investigated (Salnikov and Mikheeva, 2018)
 - H1.4. **IMOEX price** is a **significant positive** driver of the changes in the real estate prices (Ding, 2022)
 - H1.5. **Urals price** is a **significant positive** driver of real estate prices (Salnikov and Mikheeva, 2018)
 - H1.6. There is a **significant negative** relationship between residential real estate prices and interest rate on deposits
- **H2: Across periods investigated it is supposed that the degree of impact of mortgage rate and income on real estate prices will be different.**
 - H2.1. Mortgage rate has a **significant negative** influence on residential prices. However, due to the appearance of preferential mortgages in 2020 in the **second investigated period** the **degree of influence** of the weighted average mortgage rate on the real estate prices **is higher**.
 - H2.2. Income has a strong **positive** impact on the residential real estate prices, however, its effect is **less in the second investigated period**.



Hypotheses development (2/2)

| Region | Jan. 2016 | Dec. 2023 | Change, % |
|---------------------------|-----------|-----------|-----------|
| Moscow | 118 687 | 294 745 | 148 |
| Saint-Petersburg | 82 734 | 222 383 | 169 |
| Voronezh Region | 43 643 | 100 696 | 131 |
| Volgograd Region | 40 692 | 94 743 | 133 |
| Rostov Region | 46 371 | 116 917 | 152 |
| Republic of Bashkortostan | 50 224 | 121 949 | 143 |
| Republic of Tatarstan | 53 110 | 145 831 | 175 |
| Perm Region | 48 901 | 120 717 | 147 |
| Nizhny Novgorod Region | 61 840 | 137 723 | 123 |
| Samara Region | 45 176 | 104 264 | 131 |
| Sverdlovsk Region | 65 743 | 126 838 | 93 |
| Chelyabinsk Region | 40 738 | 94 797 | 133 |
| Krasnoyarsk Region | 50 814 | 119 756 | 136 |
| Krasnodar Region | 44 451 | 171 573 | 286 |
| Novosibirsk Region | 53 472 | 122 016 | 128 |
| Omsk Region | 42 381 | 119 077 | 181 |

| Region | Jan. 2016 | Nov. 2023 | Change, % |
|---------------------------|-----------|-----------|-----------|
| Moscow | 1.97 | 2.26 | 14.8 |
| Saint-Petersburg | 1.96 | 2.34 | 19.1 |
| Voronezh Region | 1.84 | 1.81 | (1.9) |
| Volgograd Region | 1.75 | 1.88 | 7.2 |
| Rostov Region | 1.98 | 2.15 | 8.7 |
| Republic of Bashkortostan | 2.02 | 2.09 | 3.9 |
| Republic of Tatarstan | 1.90 | 2.17 | 14.6 |
| Perm Region | 1.79 | 1.91 | 7 |
| Nizhny Novgorod Region | 2.48 | 2.44 | (1.6) |
| Samara Region | 1.75 | 1.83 | 4.8 |
| Sverdlovsk Region | 2.19 | 1.87 | (14.9) |
| Chelyabinsk Region | 1.40 | 1.52 | 9 |
| Krasnoyarsk Region | 1.43 | 1.50 | 4.3 |
| Krasnodar Region | 1.76 | 3.01 | 71.1 |
| Novosibirsk Region | 2.01 | 1.86 | (7.6) |
| Omsk Region | 1.64 | 2.03 | 23.6 |

H3. Some of the regions investigated tend to be in a bubble, to be exact, **Moscow, Saint Petersburg, Republic of Tatarstan, Krasnodar and Omsk Regions.**
The greatest dynamics is observed in the Krasnodar Region (71%)



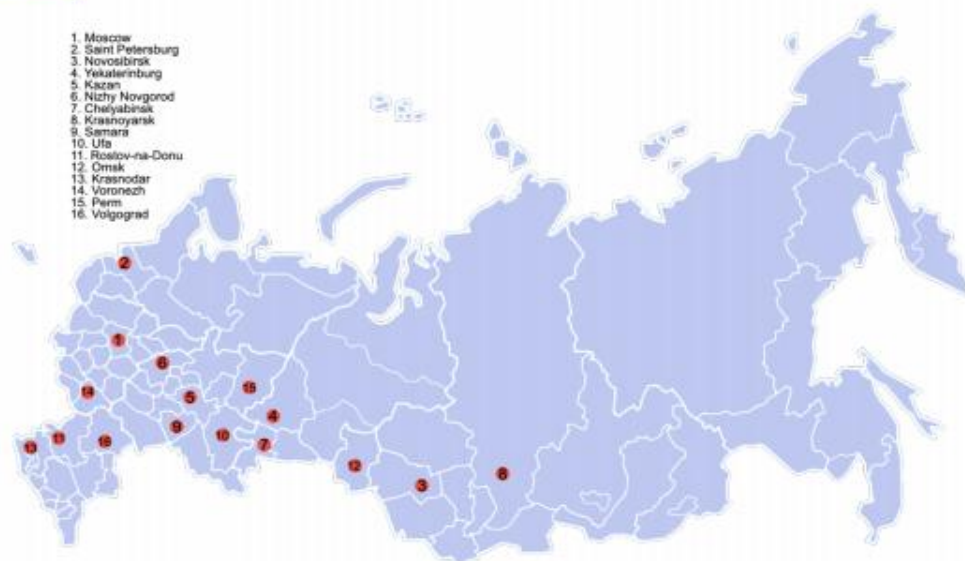
Data (1 / 2)



Russian regions, that include the million-plus cities : Moscow, Saint-Petersburg, Voronezh Region, Volgograd Region, Rostov Region, Republic of Bashkortostan, Republic of Tatarstan, Perm Region, Nizhny Novgorod Region, Samara Region, Sverdlovsk Region, Chelyabinsk Region, Krasnoyarsk Region, Krasnodar Region, Novosibirsk Region, Omsk Region



The sample period: 2016 – 2023, monthly data.



| VARIABLE NAME | UNITS | DESCRIPTION | SOURCE |
|---------------|----------------------|--|-----------------------------|
| PRICE | local currency (rub) | The price of residential real estate in the primary market | Sberindex |
| SALARY | local currency (rub) | The average salary accrued and received by the employees | Rosstat |
| USD/RUB | local currency (rub) | USD/RUB exchange rate | Investing.com |
| UNEMPLOYMENT | % | Unemployment rate in Russia | Investing.com |
| UNCERTAINTY | - | Uncertainty index that measures policy-related economic uncertainty for Russia | Economic Policy Uncertainty |
| DEPOSIT | % | Weighted average deposit interest rate | Central bank rate |
| MORTGAGE | % | Weighted average mortgage rate secured by equity participation agreement | Central bank |
| URALS | USD | The average price of Urals crude oil | Investing.com |
| IMOEX | local currency (rub) | The values of the Moscow Stock Exchange index | Investing.com |



Data (2 / 2)

| Variable | | Mean | Std. Dev. | Min | Max | Observations |
|--------------|---------|----------|-----------|----------|----------|--------------|
| Price | overall | 79472.13 | 43818.06 | 36764 | 294745 | N = 1536 |
| | between | | 33093.01 | 51638.29 | 182906.9 | n = 16 |
| | within | | 29877.3 | 6408.257 | 191310.3 | T = 96 |
| Salary | overall | 46011.23 | 20279.56 | 23229 | 218637 | N = 1536 |
| | between | | 16412.5 | 35303.79 | 99048.7 | n = 16 |
| | within | | 12592.13 | 7124.13 | 165599.5 | T = 96 |
| Mortgage | overall | 8.055423 | 2.438841 | 2.47 | 12.44 | N = 1536 |
| | between | | .1549326 | 7.6575 | 8.286354 | n = 16 |
| | within | | 2.43422 | 2.627819 | 12.39782 | T = 96 |
| IMOEX | overall | 2623.616 | 582.2815 | 1840.17 | 4150 | N = 1536 |
| | between | | 0 | 2623.616 | 2623.616 | n = 16 |
| | within | | 582.2815 | 1840.17 | 4150 | T = 96 |
| Deposit | overall | 6.478437 | 1.53752 | 4.06 | 10.83 | N = 1536 |
| | between | | 0 | 6.478437 | 6.478437 | n = 16 |
| | within | | 1.53752 | 4.06 | 30590 | T = 96 |
| USD_RUB | overall | 69.28373 | 10.13389 | 51.45 | 97.9675 | N = 1536 |
| | between | | 0 | 69.28373 | 69.28373 | n = 16 |
| | within | | 10.13389 | 51.45 | 97.9675 | T = 96 |
| Uncertainty | overall | 340.5274 | 185.0986 | 55.0955 | 964.1407 | N = 1536 |
| | between | | 0 | 340.5274 | 340.5274 | n = 16 |
| | within | | 185.0986 | 55.0955 | 964.1407 | T = 96 |
| Unemployment | overall | 4.73125 | .8723401 | 2.9 | 6.4 | N = 1536 |
| | between | | 0 | 4.73125 | 4.73125 | n = 16 |
| | within | | .8723401 | 2.9 | 6.4 | T = 96 |
| Urals | overall | 61.35083 | 15.26214 | 15.11 | 98.03 | N = 1536 |
| | between | | 0 | 61.35083 | 61.35083 | n = 16 |
| | within | | 15.26214 | 15.11 | 98.03 | T = 96 |

Regions: 16
Observations: 1 536
Years: 2016 – 2023
Data: monthly

Methodology

First two groups of hypotheses - several panel data models

Construction of panel data models: Fixed Effects Model and Random Effects Model

$$\ln(\text{Price})_t = \alpha + \beta_1 \ln(\text{Nominal salary})_t + \beta_2 \ln(\text{Mortgage rate})_t + \beta_3 \ln(\text{Urals})_t + \beta_4 \ln(\text{Uncertainty})_t + \beta_5 d.\ln(\text{IMOEX})_t + \beta_6 \ln(\text{USD/RUB})_t + \beta_7 d.(\text{Unemployment})_t + \beta_7 d.(\text{Deposit rate})_t$$

The problem of **high multicollinearity** has been detected



Parsimonious models were built

A **dummy variable** for the identification of period was applied, which takes two values – **1 if the period is from 2016 till March 2020** and **2 – for the period from April 2020 till 2023** to capture the changes in the real estate market – the introduction of **preferential mortgages**

The last **hypothesis about the existence of bubbles** we apply the Generalised Supremum Augmented Dickey-Fuller (GSADF) test, proposed by Phillips et al. (2015), which is a widely used econometric method for detecting explosive behaviour and multiple bubbles in time series data, particularly in the context of real estate markets.

Two variables – **price** and **price-to-income ratio**



Results (1/6)

| | RE model | RE model (specification 1) | RE model (specification 2) | RE model (specification 3) | RE model (specification 4) |
|------------------------|------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Variables | Coef. | Coef. | Coef. | Coef. | Coef. |
| Ln(Salary) | 0.6746*** (0.0477) | 0.8164*** (0.0330) | | | |
| D(ln(IMOEX)) | -0.1206*** (0.0190) | -0.1826*** (0.0273) | -0.3875*** (0.0378) | -0.1064*** (0.0263) | -0.0209 (0.0218) |
| D(Unemployment) | -0.0410*** (0.0067) | -0.0667*** (0.0090) | -0.3480*** (0.0178) | -0.0504*** (0.0063) | -0.1031*** (0.0095) |
| Ln(Uncertainty) | -0.0059 (0.0069) | | 0.3298*** (0.0137) | | |
| D(Deposit) | -0.0091*** (0.0022) | | 0.0306*** (0.0030) | 0.0410*** (0.0032) | |
| Ln(Mortgage) | -0.3616*** (0.0405) | -0.3499*** (0.0367) | | | -0.6889*** (0.0220) |
| Ln(USD_RUB) | 0.2831*** (0.0553) | | | | 0.6301*** (0.0474) |
| Ln(Urals) | 0.0829*** (0.0135) | | | 0.3882*** (0.0206) | |
| Observations | 1 536 | 1 536 | 1 536 | 1 536 | 1 536 |
| Overall R ² | 0.7975 | 0.8181 | 0.1965 | 0.0765 | 0.4128 |

| Variable | VIF |
|-------------|---------|
| ln_salary | 1085.75 |
| ln_USD_RUB | 896.09 |
| ln_Urals | 211.64 |
| ln_uncert | 172.57 |
| ln_mortgage | 45.75 |
| d.unemp | 1.14 |
| d.deposit | 1.05 |
| d.ln_IMOEX | 1.03 |
| Mean VIF | 301.88 |

Specification 1:

Salary – significant (positive)

Unemployment – significant (negative)

IMOEX price – significant (negative)

Mortgage rate – significant (negative)

Specification 3:

Urals price – significant (positive)

Unemployment – significant (negative)

IMOEX price – significant (negative)

Deposit rate – significant (positive)

Specification 2:

Uncertainty – significant (positive)

Unemployment – significant (negative)

IMOEX price – significant (negative)

Deposit rate – significant (positive)

Specification 3:

USD/RUB – significant (positive)

Unemployment – significant (negative)

IMOEX price – insignificant

Mortgage rate – significant (negative)

- H1.1 is **not rejected** (Unemployment)
- H1.2 is **not rejected** (Uncertainty)
- H1.3 is **not rejected** (USD/RUB)
- H1.4 is **rejected** (IMOEX)
- H1.5 is **not rejected** (Urals)
- H1.6 is **rejected** (Deposit rate)



Results (2/6)

| | RE (All) | RE (Group 1) | RE (Group 2) | RE (Group 3) |
|------------------------|------------------------|------------------------|------------------------|------------------------|
| Variables | Coef. | Coef. | Coef. | Coef. |
| Ln(Salary) | 0.8164*** (0.0330) | 0.8883*** (0.0971) | 0.8447*** (0.0320) | 0.8016*** (0.0736) |
| D(Unemployment) | -0.1826*** (0.0273) | -0.0908*** (0.0185) | -0.0541*** (0.0063) | -0.0576 (0.0234) |
| Ln(Mortgage) | -0.0667*** (0.0090) | -0.4265*** (0.0455) | -0.2574*** (0.0352) | -0.2856*** (0.0795) |
| D(Ln(IMOEX_price)) | -0.3499*** (0.0367) | -0.2840*** (0.0694) | -0.1305*** (0.0210) | -0.1742*** (0.0419) |
| Observations | 1 536 | 480 | 672 | 384 |
| Overall R ² | 0.8181 | 0.9108 | 0.7257 | 0.7639 |

Salary – significant (positive)

Unemployment– significant (negative)

IMOEX price – significant (negative)

Mortgage rate – significant (negative)

Group 1 - Moscow, St. Petersburg, Republic of Tatarstan, Krasnodar Region and Omsk Region

Group 2 - Volgograd Region, Rostov Region, Republic of Bashkortostan, Perm Region, Samara Region, Chelyabinsk Region and Krasnoyarsk Region

Group 3 - Voronezh Region, Nizhny Novgorod Region, Sverdlovsk Region and Novosibirsk Region



Results (3/6)

| RE model | |
|------------------------|------------------------|
| Variables | Coef. |
| period#c.ln_salary | |
| 1 | 0.7779*** (0.0391) |
| 2 | 0.9007*** (0.0508) |
| period#c.ln_mortgage | |
| 1 | 0.1816*** (0.0628) |
| 2 | -0.3927*** (0.0363) |
| d.unemp | -0.0295** (0.0132) |
| d.ln_IMOEX | -0.1984*** (0.0291) |
| Observations | 1 536 |
| Overall R ² | 0.8322 |

Period 1:

Salary – significant (positive)
Unemployment – significant (negative)
IMOEX price – significant (negative)
Mortgage rate – significant (positive)

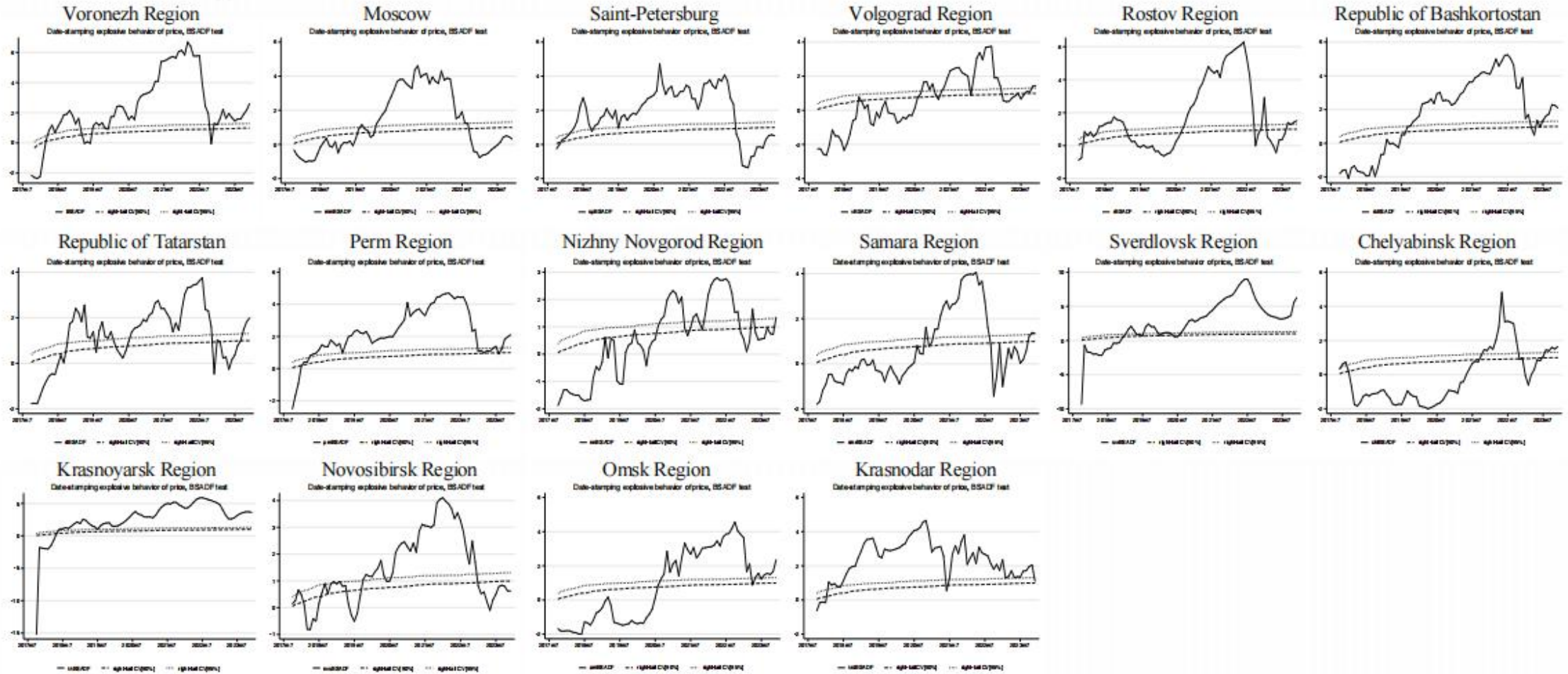
Period 2:

Salary – significant (positive)
Unemployment – significant (negative)
IMOEX price – significant (negative)
Mortgage rate – significant (negative)

- H2.1. is partly not rejected
- H2.2. is partly not rejected



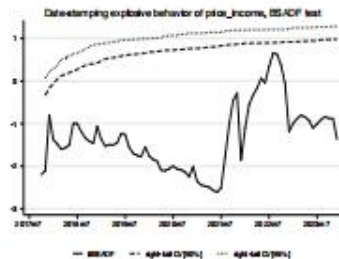
Results (4/6)



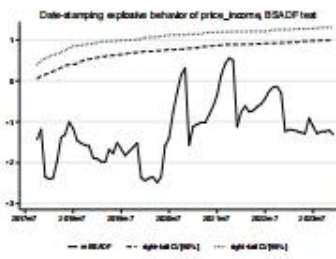


Results (5/6)

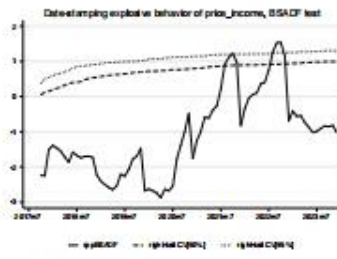
Voronezh Region



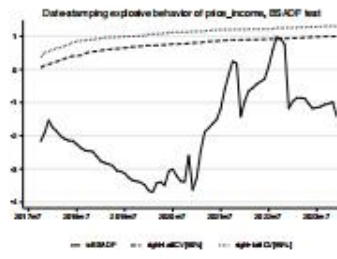
Moscow



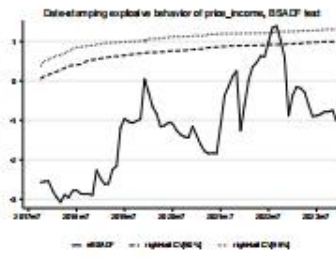
Saint-Petersburg



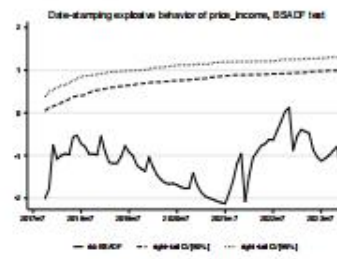
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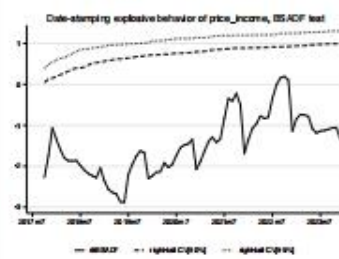
Rostov Region



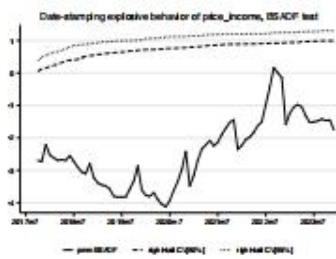
Republic of Bashkortostan



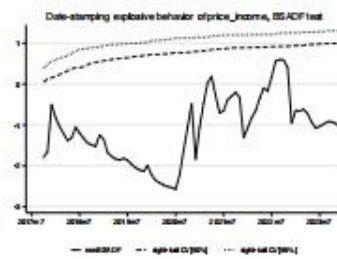
Republic of Tatarstan



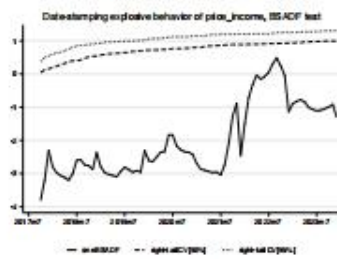
Perm Region



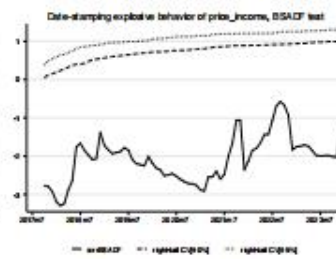
Nizhny Novgorod Region



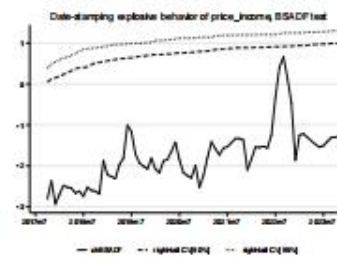
Samara Region



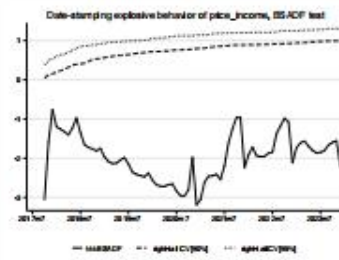
Sverdlovsk Region



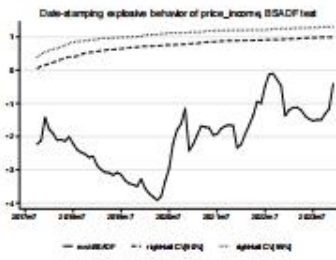
Chelyabinsk Region



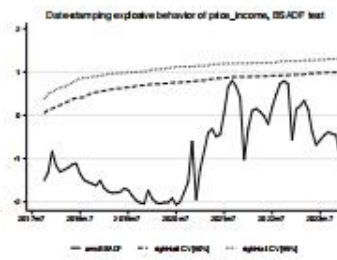
Krasnoyarsk Region



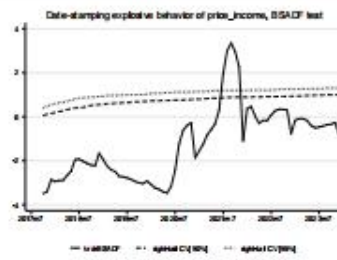
Novosibirsk Region



Omsk Region



Krasnodar Region





Results (6/6)

Статистика за 2023 год, которую приводят Центробанк и Министерство финансов России, чётко и однозначно говорит о том, что никакого ипотечного пузыря на российском рынке не предвидится. Это подтверждает и **невысокий** уровень **закредитованности населения**, и **низкая доля просроченной задолженности**

Сергей Разуваев, директор консалтинговой компании GМК

Риски пузыря на рынке недвижимости остаются низкими: **минимальная доля просроченных кредитов, небольшая доля ипотечной задолженности от ВВП**, покупка жилья преимущественно для **собственного проживания**

Виктория Кирюхина, эксперт «Циан.Аналитики»

Показатель **просроченной задолженности** остается **низким**, поэтому говорить о пузыре пока не приходится. **Банк России предпринимает массу мер** для снижения рисков надувания пузыря. В том числе ужесточает ДКП, повышает макропруденциальные требования по ипотечным кредитам, контролирует действие льготных программ

Наталья Пырьева, аналитик ФГ «Финанм»

Пузыря на рынке недвижимости нет из-за отсутствия бума инвестиционной покупки жилья. Большая часть жилья покупается для удовлетворения потребностей семей. Ипотечный платеж посильный. В среднем семья тратит на ипотечный платеж меньше четверти своих доходов. То есть это довольно комфортный уровень, и он пока не подразумевает, что мы находимся в нездоровой зоне

Артём Федорко, Председатель правления Банка ДОМ.РФ



Conclusion

- ✓ The results have confirmed that all the investigated macroeconomic variables are significant determinants of real estate prices
 - ✓ The most **substantial effect** can be seen from two variables – **nominal salary (positive effect)** and **weighted average mortgage rate (negative effect)**
 - ✓ **Uncertainty index, deposit interest rate, USD/RUB exchange rate** and **Urals price** have also been found **significant positive drivers** of residential real estate prices.
 - ✓ On the contrary, **IMOEX price** and **unemployment rate** have a **significant negative impact**
- ✓ It has been found that the **preferential mortgage programme** has **significantly changed the degree of exposure** of the mortgage rate on the price
- ✓ **Krasnodar Region** has suffered from the highly **explosive behaviour** of prices. Explosive behaviour has been detected in **other regions** only when **investigating the residential prices themselves**



Contribution & Implications

The study extends the existing literature regarding the analysis of determinants of residential real estate prices in Russian regions and addresses the gap in understanding the effect of the preferential mortgage program on the extent of their influence. Furthermore, in this paper the GSADF tests are employed for detecting “overheated” markets.



The results of the study may be relevant for authorities in order to strategically plan the development of the real estate market and apply appropriate regulation, for developers, real estate agents and consumers, and will allow them to make economically rational decisions, make effective investments and reduce time and material costs.

Some **limitations** in our research that could be covered in **future papers**:

- The study covers only 16 key regions, therefore, the sample could be extended
- The investigation and comparison of results on the countries' level could be done in further research (for example with the Chinese market or other BRICs countries' markets)
- The results of GSADF test could be compared to other methods of identification of bubbles