

Chapter 6

The Residential Real Estate Market in the Slovak Republic

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Abstract

The residential real estate market represents the entire complex of economic and social relations at the macroeconomic and microeconomic levels. This publication aims to evaluate developments in the field of financing and the development of the residential real estate market in Slovakia, with a special focus on the determinants affecting the demand, supply, and prices of residential real estate in Slovakia and Bratislava. Owner-occupied housing is the dominant type of housing and has a significant impact on the development of housing issues. Research into the issue of multiple ownership of real estate provides answers to questions about the growth of real estate prices in the conditions of Bratislava. The influence of financial indicators, especially interest rates, the availability of housing loans, and the regulation of the banking sector explain the essential connections in the area of the development of residential real estate prices and factors of their development. The analysis points to the need for the development of rental housing in Slovakia.

Keywords: Residential real estate market; housing policy; owner occupied and rental housing; real estate prices; cyclicity of housing prices

1. Introduction

The real estate market is part of a complex economic and financial system that connects the macroeconomic environment, the financial market, investments, banking, social conditions, and territorial development. The real estate market and the stability of the economic environment are in mutual interaction.

According to [Schwartz \(2020\)](#), housing finance serves to understand how government policy affects financial markets, because mortgages are a central element of both banks and households balance sheets. Determinants affecting the prices of residential real estate are divided into supply and demand factors. As stated by [Cár \(2009\)](#), demand factors include credit availability, location, economic situation, demographic factors, political situation, housing policy, and savings rate. On the side of supply factors, the author mentions mainly the place of housing construction in the spatial plans of cities and municipalities, the availability of building plots as well as economic and technical factors such as the construction stage and the state of the housing stock. He considered the interest rate as a key factor in the real estate market.

Real estate market research focuses on various groups of approaches, such as regional, socioeconomic, investor, financial, banking, psychological, and others.

The regional approach looks for key factors of regional development and solutions to regional disparities, for example, [Arundel and Hochstenbach \(2020\)](#). [Plešivčák and Buček \(2017\)](#), using the example of the analyzed region, pointed out that the innovative capacity of the region and the support of the business environment are key development factors arising from the internal environment. From the external environment, the development of regions is mainly influenced by foreign direct investments and the social cohesion of the EU.

The authors [Wu and Lux \(2018\)](#) identified factors affecting real estate prices at the regional and national level, as well as potential price bubbles. They used Gordon's dividend discount model and treated house prices as the present value of future rental income. The analysis of regional trends showed that the growth of real estate prices in the regions was influenced by different factors in the short and long-term, so regional aspects are important.

The socioeconomic approach solves issues of housing policy, housing affordability, and thus has several aspects of research. For example, [Lux and Sunega \(2014\)](#) analyzed the conditions of eight European countries (Austria, Germany, Czech Republic, Hungary, Poland, Slovakia, Slovenia, and Italy) from the point of view of subsidies and housing options for seniors. They found that in countries with lower rates of home ownership and a higher share of rental housing, the range of housing subsidies for the elderly is wider and includes more innovative features. [Szüdi and Kováčová \(2016\)](#) applied a socioeconomic approach to housing issues for marginalized groups of Roma in Slovakia when they described the social housing project "Building hope" in the municipality of Rankovce in Eastern Slovakia.

2. Factors Influencing the Supply and Demand of Residential Real Estate

The analytical approach is related to the analysis of housing affordability. Housing affordability is an important social and economic indicator. It is evaluated from the financial aspect as housing affordability, and from the material point of view as housing accessibility. Questions of financial affordability of housing were addressed by [Endel and Kuta \(2018\)](#) and others. According to the authors [Kuda and Lux \(2010\)](#), the unaffordability of housing can be a cause of social exclusion. The concept of housing affordability has become the basis for assessing the housing situation.

[Bohle \(2018\)](#) analyzed the mortgage markets and found that factors such as the liberalization of financial flows and the privatization of the banking sectors directed predominantly international liquidity into mortgage financing.

Nemcová (2016) points to the importance of the concept of state housing policy in terms of strengthening purchasing power in the national economy. Kelly et al. (2018) evaluated that an increase in the availability of loans leads to an increase in the value of real estate. Their results indicate that market conditions such as LTV (Loan to Value) and PTI (Payment to Income) also had a significant impact on property prices.

Several economic, social, and demographic factors support owner-occupied housing. Kropáčková et al. (2022) state the advantages of owner-occupied housing through the advantages of mortgages compared to renting. Mikeszová et al. (2018) consider real estate ownership as an investment for old age. Property ownership can be motivated by own consumption, but it can also be an investment. Lennartz et al. (2019) stated that the motive for buying a second property is intergenerational support. Multiple property ownership affects housing affordability. Bieger et al. (2007) reported that retirees prefer secondary ownership due to living in nature. Lux (2009) stated that the taxation of financial income increases the price of rent. Therefore, people prefer to own property.

The influence of cultural and social factors was addressed by Acolin (2022), when he presents own housing as ontological certainties and the subjective feeling of creating one's own decisions. Hubert and Schmidt (2019) also found that cultural preferences influence homeownership decisions.

Palacin and Shelburne (2005), Winkler (2010), and Syrový (2009) found that homeowners move less compared to renters and therefore homeownership seems to be negatively correlated with labor mobility. Broulíková et al. (2018) analyzed the common assumption that home ownership promotes unemployment, because it is said that ownership limits the search for a job in the labor market. Empirical tests have produced mixed results, possibly due to the endogeneity of home ownership. The article documents that the privatization of apartments in Central and Eastern Europe after the fall of the Iron Curtain resulted in a quasiexperimental allocation of ownership of apartments to individual households. The authors found only weak evidence that homeowners are less willing to move and no evidence of a higher risk of unemployment compared to renters.

The authors Mnasri (2015) and Syrový (2009) connected the advantages of rental housing with the flexibility of the workforce. The authors De Boer and Bitetti (2014) found that the deregulation of social housing does not automatically mean the emergence of a stable private rental sector.

3. History of Housing Development and Real Estate Market in Slovakia

3.1 History of Housing Development in Slovakia

Housing policy and the residential real estate market in Slovakia have undergone major changes, especially in the period of economic transformation after 1989. In Slovakia, owner-occupied housing is currently the dominant form. We believe that it is largely an economic question, as well as a psychological and cultural one. As stated by Lux (2009), until 1989, housing consisted mainly of state, cooperative, and state

enterprise apartments. To a lesser extent, there were privately owned houses. Until 1989, the area of housing was generally affected by central planning and administrative interventions. The construction of prefab houses before 1989 was typical for most socialist states and helped to overcome the housing need, according to [Hegedüs et al. \(2013\)](#). The development of the residential real estate market after 1989 was significantly contributed by the stabilization of the macroeconomic indicators of the Slovak economy, the reduction of interest rates, the growth of employment and economic performance, and last but not least, the adoption of the common euro currency in 2004. Policy changes in the area of housing after 1989 were dealt with by [Szelény \(2014\)](#), [Špirková \(2018\)](#), and [Szolgayová et al. \(2019\)](#).

According to [Szolgayová et al. \(2019\)](#), the first population census in 1991 showed that the rental sector made up 26.7% of the total housing stock and 22.1% were cooperative apartments. [Szolgayová et al. \(2019\)](#) found that the prevailing owner-occupied housing was caused by the privatization of apartments after 1989 in Slovakia. State apartments and apartments of state enterprises were transferred free of charge to the property of municipalities. The subsequent transformation of housing cooperatives after 1993 made it possible to privatize cooperative housing. The price of privatized apartments represented the unpaid part of investment loans, which was far below the market price. In this context, [Špirková \(2018\)](#) writes that as a result of privatization, up to 90% of apartments came into private ownership and there was a complete elimination of public and private rental apartments. Owned housing in Slovakia continues to grow continuously, when according to [Eurostat \(2024\)](#) in 2010, it represented 90%, in 2018, it was 91.3%, in 2020, it was 92.3%, and in 2022, up to 93% of the population had their own housing. This is broken down in [Fig. 6.1](#) below:

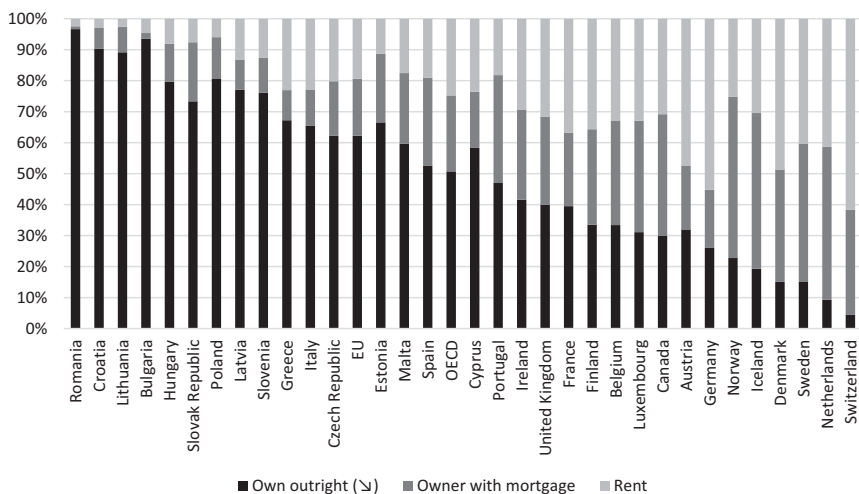


Fig. 6.1. Share of Owner-Occupied Housing in Selected Countries and Slovakia. *Source: OECD (2022)*. *Note: In each column, the first dark color indicates owner-occupied housing, followed by owner with mortgage, then rent private, rent subsidized and others.*

3.2 The Situation on the Housing Market After Slovakia's Accession to the European Union

In 2004, the Slovak Republic joined the European Union. It was the beginning of a new phase of development for the Slovak residential real estate sector. As a result of positive macroeconomic developments, stable economic growth was recorded which was manifested in increasing foreign direct investments, increasing liquidity, decreasing inflation, and lowering interest rates. After joining the EU, Slovakia was perceived as a fast-growing economy, which joined the Eurozone in 2009. In the period after the global financial crisis after 2008, the Slovak banking sector maintained the growth of real estate loans. This phenomenon persisted until 2023. Real estate financing was the dominant element of lending, as loans were directed not only to the purchase of real estate but also to the financing of developers' development projects. Since 2015, Slovak households have been among the fastest-indebted households in the EU. The ratio of loans to GDP increased from 25% in 2015 to 36.7% in 2020.

The housing market includes owner-occupied, rental, and state-owned sectors. [Mansfeldová and Tuček \(2002\)](#) and [Hegedüs et al. \(2013\)](#) stated that the rental sector contains the state (often seen as social) and the private sector.

Rental housing in Slovakia lags behind after 1989. In practice, there exist basic forms of rental housing, namely market, regulated, and social rental housing. Social and regulated rental housing have a weak offer in Slovakia, where market rental housing prevails. Market rental housing is concentrated in the Bratislava region and in large regional cities such as Košice and Banská Bystrica. There are differences in the definition of social rental housing in EU countries. The authors [De Boer and Bitetti \(2014\)](#) and [Cár \(2009\)](#) pointed to the need to approach it according to specific national conditions. [Hegedüs et al. \(2017\)](#) addressed the issues of the private rental sector, and they predict its dynamic development in the future.

According to [Eurostat \(2024\)](#) data, the share of people living in rental housing in Slovakia is continuously maintained at a low level. In 2017, 9.9% of the population used rental housing, in 2018, it was 8.7%, and in 2022, it was only 7.8%. Statistical data also point to the threat of poverty from the point of view of rental housing. In Slovakia, in connection with the growth of rental prices, the threat of poverty in the area of rental housing has increased compared to owner-occupied housing. The risk of poverty increased during the period between 2005 and 2023 from 18% to 40% in rental housing, while the risk of poverty remained at 12% in owner-occupied housing.

In 2023, rental prices have increased significantly. The growth of interest rates, the decrease in the financial availability of housing, and the related reorientation of a part of the population to rental housing contributed to the growth of the rent.

The Average Monthly Rental Prices of Two-Room Apartments (EUR) are shown in below [Table 6.1](#).

Developments in the housing market after 2015 were influenced by low interest rates and available housing loans. Several studies shown below in [Fig. 6.2](#) that the increase in the availability of credit causes an increase in real estate prices. The

Table 6.1. Average Monthly Rental Prices of Two-Room Apartments (EUR).

	1Q 2010	4Q 2018	4Q 2020	4Q 2021	4Q 2022	3Q 2023*
Bratislava I	670	790	646	676	739	1,163
Bratislava II	530	570	561	537	665	838
Bratislava III	540	570	558	542	619	889
Bratislava IV	500	540	550	558	622	843
Bratislava V	531	600	561	509	605	794
Košice I	530	590	545	561	670	n.a
Košice II	380	560	532	548	656	n.a
Košice III	370	430	510	495	570	n.a
Košice IV	510	490	526	516	659	n.a
Banská Bystrica	410	440	514	531	604	n.a
Nitra	390	580	528	534	585	n.a
Prešov	370	410	456	482	560	n.a
Trenčín	360	400	520	549	596	n.a
Trnava	410	560	551	553	618	n.a
Žilina	380	550	539	505	623	n.a

Source: Author's own processing using data reality.sk, nehnuteľnosti.sk and bencont.sk.

Note: *Bruchánik (2023).

increase in the availability of loans was mainly caused by the drop in interest rates. Research in Slovakia confirmed that these factors, combined with the growth in demand, also influenced the growth in real estate prices. There was continuous growth in real estate prices until 2023. In 2023, real estate prices fell. The fall in real estate prices was caused by the rise in interest rates, the reduction in the availability of loans, and the limitation of loans by the regulator through LTV, DSTI (Debt Service to Income), and DTI (Debt to Income).

The stability of the real estate market is also influenced by the development of apartment construction. The number of completed apartments in this area is growing, but the demand for apartments in cities exceeds their supply. The following Fig. 6.3 shows the development of construction in the conditions of the Slovak Republic in parts of Western, Central, and Eastern Slovakia, as well as in individual regions of the Slovak Republic.

4. Real Estate Market Developments

4.1 Determinants of the Development of Real Estate Prices

The development of the real estate market is influenced by several determinants. According to the authors Schiller and Weiss (1999), real estate prices are essentially predictable. A drop in prices on the real estate market may not be news

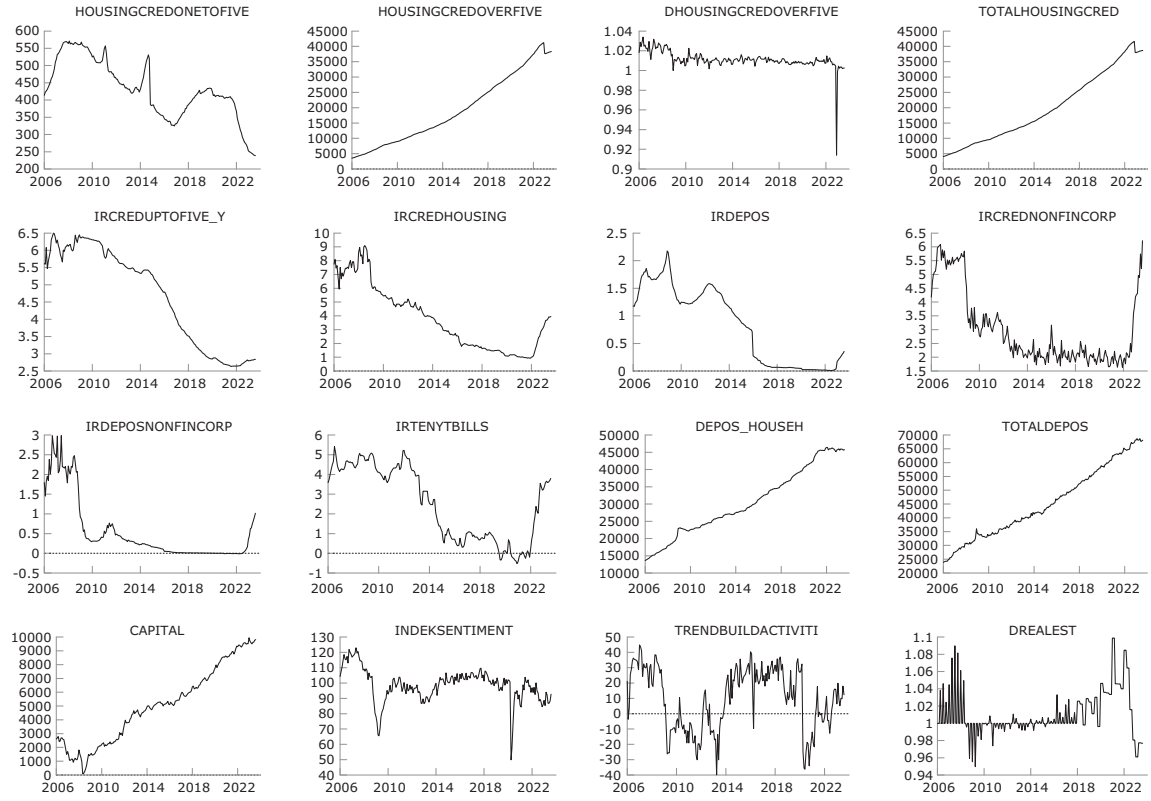


Fig. 6.2. Selected Indicators Influencing the Property Market. *Source:* Author’s own processing using [NBS \(2024\)](#) data. *Note:* HOUSINGCREDONETOFIVE = housing loans with maturity 1–5 years; DHOUSINGCREDOVERFIVE = changes in housing loans with maturity over 5 years; TOTALHOUSINGCRED = total housing loans; IRCREDUPTOFIVE_Y = interest rate for loans up to 5 years; IRCREDHOUSING = interest rate on housing loans; IRDEPOS = interest rates on deposits; IRCREDNONFINCORP = interest rate on loans for non-financial corporations; INDEKSENTIMENT = economic sentiment index; DWAGES = wage changes; INFL = inflation; IRDEPOS = interest rate on deposits; DEPOS_HOUSEH = household deposits; TOTALDEPOS = total deposits; CAPITAL = capital of banks; DREALEST = changes in real estate prices in Slovakia.

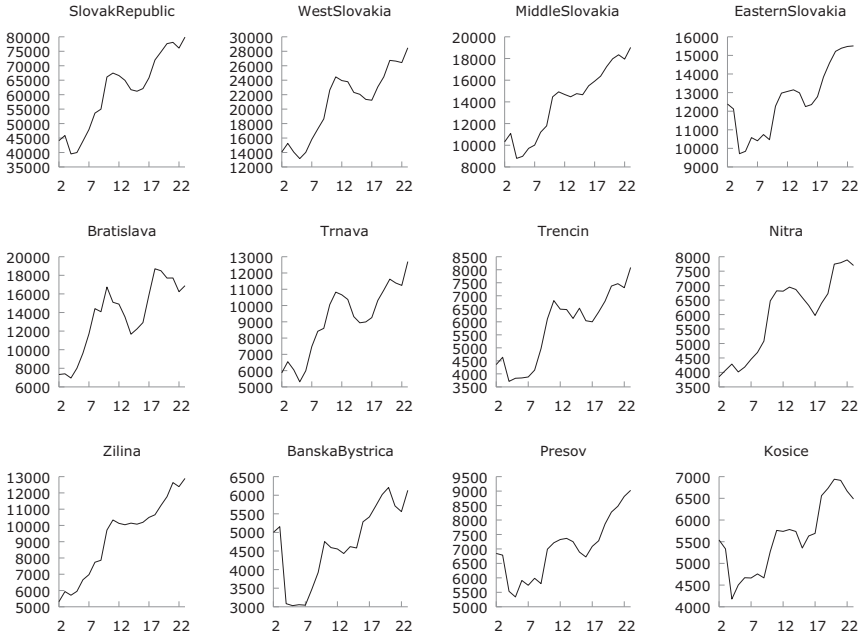


Fig. 6.3. Flats Under Construction Within Slovakia in the Period 2002–2022. *Source:* Author’s own processing using [Statistical Office of the SR \(2024\)](#) data.

because price changes are partly known in advance. To illustrate the importance of real estate market inefficiencies for risk management, the authors estimate a simple model of real estate price forecasts using an indicator called the “Case-Shiller quarterly Home Price Index.” [Shiller \(2016\)](#) has warned against both tech bubbles and real estate bubbles, arguing that psychologically driven volatility is an inherent feature of all asset markets.

The authors [Tkacova et al. \(2024\)](#) identified the influence of economic and sociological variables on the price of real estate at the national and regional level in Slovakia and pointed out the differences at the regional level. They confirmed the assumption about the different influence of determinants on the price of real estate at the regional level. The National Bank of Slovakia consistently monitors the development of the real estate market and the quarterly development of real estate prices in Slovakia.

The authors [Cesnak et al. \(2024\)](#) provide a market evaluation methodology through indices used for real estate market analysis, such as the housing affordability index or macroeconomic models estimating real estate price fundamentals.

The authors [Vogel and Werner \(2015\)](#) analyzed bubbles in real estate markets and found that extreme market events were basically caused by excessive expansion of bank credit and leveraged transactions.

[Cronin and McQuinn \(2016\)](#) found that the reduction in LTV ratios that may occur as a result of regulatory caps will lead to greater demand for rental housing, which will lead to higher rents at a given housing price level.

This result is suitable for explaining the housing market in Slovakia after 2022. [Greenwald \(2018\)](#) found that the PTI indicator is a more effective tool for dampening the growth of real estate prices compared to the LTV indicator.

[Brauner and Plottová \(2017\)](#) found that the rental price depends on the purchase price of the property, interest rates, developments on the financial market, and the rate of inflation. They confirmed that there is interdependence between property prices and rental prices. [Dröes and Francke \(2018\)](#) found a strong correlation between property prices and market turnover. GDP and interest rates could also explain the correlation between price and turnover indicators.

As [Schwartz \(2020\)](#) points out, large-scale mortgage markets only work where the government influences the banking system to eliminate maturity risks and limit excessive credit creation.

Using quarterly data covering house prices in different countries over four decades, [Aizenman et al. \(2019\)](#) find that house price appreciation is positively associated with economic growth, while the relationship between house price depreciation and economic growth is highly nonlinear depending on country-specific characteristics. [Ehrenbergerová and Bajžík \(2020\)](#) found that an increase in the interest rate by one percentage point causes a decrease in real estate prices by 0.7% after 1 year and by 0.9% after 2 years.

The authors [Pittini et al. \(2019\)](#) identified these problems when it comes to the Slovak real estate market: a high share of owner-occupied housing in Slovakia, high prices of private rental housing, and large price differences between Bratislava and other regions.

The article from [Lennartz et al. \(2019\)](#) addresses three key topics: how to produce more affordable housing units, how to better allocate scarce housing resources among residents and between regions; and how to reduce the speculative element in the current housing market.

[Cunha and Lobão \(2021\)](#) consider factors such as gross domestic product (GDP), interest rates, housing starts, and tourism to be the main cause of real estate price growth but not in all the geographical levels of analysis.

The development of interest rates on loans and the drop in interest rates on deposits stimulated households to buy residential real estate or to buy secondary and investment real estate. Limited investment returns on the capital market during the period of low interest rates stimulated to invest in real estate. The growing demand for loans and the increasing availability of loans in combination with a limited supply caused the growth of real estate prices on the Slovak market. These are displayed below in [Fig. 6.4](#):

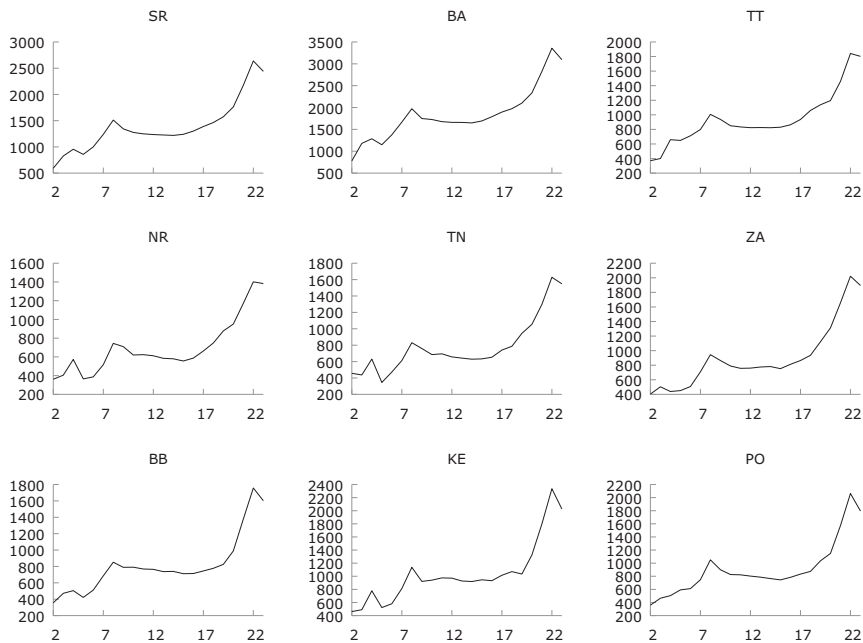


Fig. 6.4. Development of Real Estate Prices in Slovakia (EUR/m²).
 Source: Author's own processing using NBS (2024) data.

The author [Cár \(2009\)](#) states that the growth of interest in private rental housing is limited by the economic disadvantages of renting an apartment compared to purchasing it, while in addition the apartment becomes the property of the buyer.

4.2 Analysis of Housing Prices in Slovakia and Bratislava

The following models shown in [Fig. 6.5](#) are compiled in such a way that it is possible to identify the main factors of the development of the real estate market in Slovakia.

The growing demand for loans and the increasing availability of loans have caused an increase in real estate prices on the Slovak market. The models show the strong influence on real estate prices in Slovakia when it comes to such factors as changes in housing loans over 5 years, interest rates on loans over 5 years, interest rates on housing loans, economic sentiment index, construction activity trends, and total housing loans. The development of real estate prices in Bratislava was influenced by the development of wages and savings, which we explain by the fact that investors prefer investing in real estate over alternative forms of

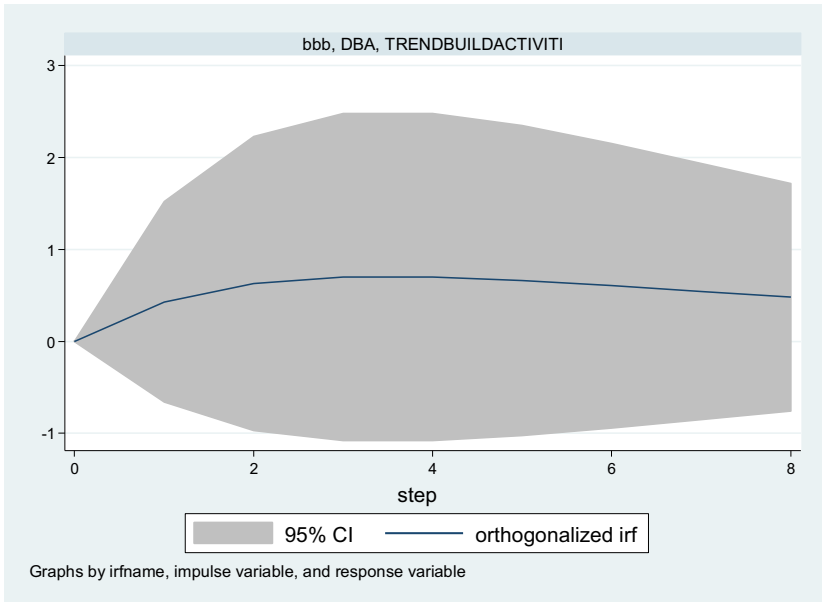


Fig. 6.5. Impulse-Response Function: Impulse – Real Estate Prices in Bratislava Changes; Response – Build Activity. *Source:* Author's own processing using [NBS \(2024\)](#) data.

investment and also by multiple ownership of real estate as investment real estate or for rental purposes.

The residential real estate market is influenced by macroeconomic factors and the development of the banking and financial market. When it comes to macroeconomic influences, it was mainly inflation that had a significant impact on the growth of real estate prices in both, Slovakia and Bratislava. The positive development of employment was reflected in the growth of real estate prices in Bratislava.

We analyzed the impact of individual variables on the prices in Bratislava and on the average prices of residential properties in Slovakia. The conclusions about the impact of the growth of deposits on the growth of real estate prices in Bratislava were confirmed. The conclusions about the impact of growth in construction activity on price changes in Bratislava were based on the theoretical assumptions that rising prices cause growth in construction activity. The growth of residential real estate prices in Bratislava was driven by demand from investors, as well as a reaction from construction contractors.

Models of Real Estate Price Factor Estimations in Slovakia and Bratislava are shown in the below [Table 6.2](#).

Table 6.2. Models of Real Estate Price Factor Estimations in Slovakia and Bratislava.

	Model 1 WLS Dependent Variable: BA	Model 2 OLS Dependent Variable: DBA	Model 3 OLS Dependent Variable: Realestate-Prices	Model 4 OLS Dependent Variable: Drealest	Model 5 ANOVA Dependent Variable BA	Model 6 ANOVA Dependent Variable Realestate-Prices
Const	-3800.66 *** (1063.98 -3.57)	0.53*** (0.18 2.84)	-2909.67*** (866.87 -3.35)	0.51*** (0.20 2.49)	- 1504.45*** (260.89 -5.77)	-1311.58*** (212.47 -6.17)
DHOUSINGCREDOVERFIVE	1380.54 (962.96 1.43)	0.17** (2.56 0.01)	793.46 (785.12 1.01)	0.50*** (0.18 2.67)	0.06** (0.02 2.74)	0.05** (0.01 3.02)
IRCREDUPTOFIVE_Y	263.23*** (31.88 8.25)	-0.01* (0.005 -1.96)	226.04*** (26.48 8.53)	-0.01** (0.005 -2.34)	243.44*** (28.32 8.59)	206.57*** (23.07 8.95)
IRCREDHOUSING	163.05*** (14.60 11.16)	-0.002 (0.002 -1.09)	141.31*** (12.33 11.46)	-0.002 (0.002 -0.96)	178.52*** (15.59 11.45)	151.14*** (12.70 11.90)
IRCREDNONFINCORP					-4.95 (14.17 -0.35)	-1.83 (11.54 -0.16)
INDEKSENTIMENT	3.74*** (1.05 3.53)	0.0009*** (0.0002 4.49)	2.28** (0.936 2.44)	0.0008*** (0.000225 3.39)	3.77*** (1.028 3.67)	1.93* (0.83 2.31)

DWAGES	343.410 *** (2.901 2.901)	-0.00378 (0.0219 -0.17)	215.58** (98.57 2.18)	-0.01 (0.02 -0.50)	261.28* (107.80 2.42)	163.12* (87.79 1.83)
INFL	82.62*** (16.71 4.94)	0.005* (0.003 1.70)	68.49*** (13.84 4.96)	0.006* (0.003 1.82)	68.23*** (13.84 1.70)	58.90*** (12.22 4.82)
IRDEPOS	61.68 (49.19 1.25)	0.02** (0.008 2.53)	48.82 (41.77 1.16)	0.02** (0.009 2.31)	80.94* (44.58 1.82)	75.64* (36.30 2.08)
DEPOS_HOUSEH	0.020** (0.009 2.122)	0.04 (0.0006 0.06)	0.01* (0.008 1.71)	-0.0002 (0.00007 -0.38)	0.09*** (0.01 7.34)	0.07*** (0.01 7.42)
TOTALDEPOS					-0.07*** (0.008 -8.41)	-0.06*** (0.007 -8.79)
IRTENYTBILLS	-9.78 (10.62 -0.92)	-0.016*** (0.001 -5.25)		-0.009 (0.002 -4.52)	-12.94 (9.36 -1.38)	-3.73 (7.26 -0.49)
UNEMPL	-22.71*** (5.80 -3.91)	-0.0007 (0.001 -0.71)		-0.0008 (0.001 -0.68)	-25.08*** (5.50 -4.56)	-20.76*** (4.48 -4.63)
TRENDBUILDACTIVITI	-2.83*** (0.55 -5.12)	-0.0006 (0.001 -6.14)	-2.42*** (0.46 -5.19)	-0.0006 *** (0.001 -5.25)	-1.63** (0.52 -3.12)	-1.27** (0.42 -2.99)
DGDP		-0.001 (0.007 -1.61)	-2.13 (3.22 -0.66)	-0.001 (0.0008 -1.42)	-1.91 (3.41 -0.56)	-0.57 (2.77 -0.21)

(Continued)

Table 6.2. (Continued)

	Model 1 WLS Dependent Variable: BA	Model 2 OLS Dependent Variable: DBA	Model 3 OLS Dependent Variable: Realestate-Prices	Model 4 OLS Dependent Variable: Drealest	Model 5 ANOVA Dependent Variable BA	Model 6 ANOVA Dependent Variable Realestate-Prices
TOTALHOUSINGCRED	0.08*** (0.008 9.92)		0.07*** (0.007 10.49)		0.04* (0.02 1.85)	0.03* (0.01 1.82)
	<i>R</i> -squared 0.967	<i>R</i> -squared 0.47	<i>R</i> -squared S.E. of regression 80.17	0.96 0.95 S.E. of regression 87.17614	<i>R</i> -squared = 0.97 Prob > <i>F</i> = 0.000	0.97 Prob > <i>F</i> =

Source: Author's own processing using NBS (2024) data.

Note: Values in parentheses are std. error and *t*-value; *** denotes statistical significance at the 1% level, ** at the 5% level and * at the 10% level. Variables: DHOUSINGCREDOVERFIVE = changes in housing loans with maturity over 5 years; IRCREDUPTOFIVE_Y = interest rate for loans up to 5 years; IRCREDHOUSING = interest rate on housing loans; IRCREDNONFINCORP = interest rate on loans for non-financial corporations; INDEKSENTIMENT = economic sentiment index; DWAGES = wage changes; INFL = inflation rate; IRDEPOS = interest rate on deposits; DEPOS_HOUSEH = household deposits; TOTALDEPOS = total deposits; IRTENYTBILLS = interest rate on 10-year government bonds; UNEMPL = unemployment rate; TRENDBUILDACTIVITI = the trend of construction activity; DGDP = change in GDP growth; TOTALHOUSINGCRED = total housing loans.

The current development after the increase in interest rates confirms the validity of general results and connections between loan prices, their availability, real estate prices, and interest rates. Last but not least, in the real estate market, there is inertia and downward price inflexibility. How can this be explained? It is also necessary to start from the position of individual subjects on the market and their preferences. If we think about whose interest is the reduction of real estate prices, we come to the following conclusions: Banks and developers perceive a possible fall in real estate prices as a risk. Banks because they not only finance real estate but also, they have real estate as collateral for housing loans. A reduction in the value of collateral requires additional security of receivables or reporting them as more risky, which requires the holding of higher capital. Developers are interested in selling real estate at a profit, which also threatens the rise in input prices at the time of real estate construction. Real estate agents are also interested in maintaining high real estate prices, as their commissions depend on the value of transactions. In essence, it can be concluded that from a microeconomic point of view, there are only a few entities that are interested in reducing real estate prices. These include entities on the demand side, that is, households and also the state, which is interested in increasing the availability of housing.

Based on all the known contexts, the growing trend in the real estate market has broken and currently a drop in prices is already noticeable throughout the Slovak Republic. This can be explained mainly by the growth of interest rates and inflation. Despite the reduction in real estate prices, the affordability of residential real estate has decreased in Slovakia. In order to reduce risks, the National Bank of Slovakia limited the LTV, DSTI, and DTI indicators to housing loans.

As a result of rising interest rates, access to own housing became more difficult and therefore residents had to solve their needs through rental housing. The growth of rental housing in 2023 was largely caused by the inaccessibility of own housing, which the inhabitants of Slovakia prefer not only for economic but also for psychological reasons. The growth of rental housing in the last year is not the result of household preferences, but is a solution from the point of view of economic constraints.

The Hodrick–Prescott filter was used to estimate the cyclicity of the development of housing prices in Slovakia. As the graph in Fig. 6.6 shows, during the period 2022–2023, significantly increasing cyclical component appears which indicates an overvaluation of residential real estate prices.

This figure points to two significant periods of cyclical growth in real estate prices. The first period with significant cyclical component can be recognized during the global financial crisis in 2008 and the second period with significant growth in real estate prices was during the period 2021–2022. [Cesnak and Klacso \(2021\)](#) did not find the presence of a price bubble on the real estate market in the Slovak Republic, although they admitted the overvaluation of real estate in some regions of the Slovak Republic. Similar results are also reported by [Tkacova et al. \(2024\)](#).

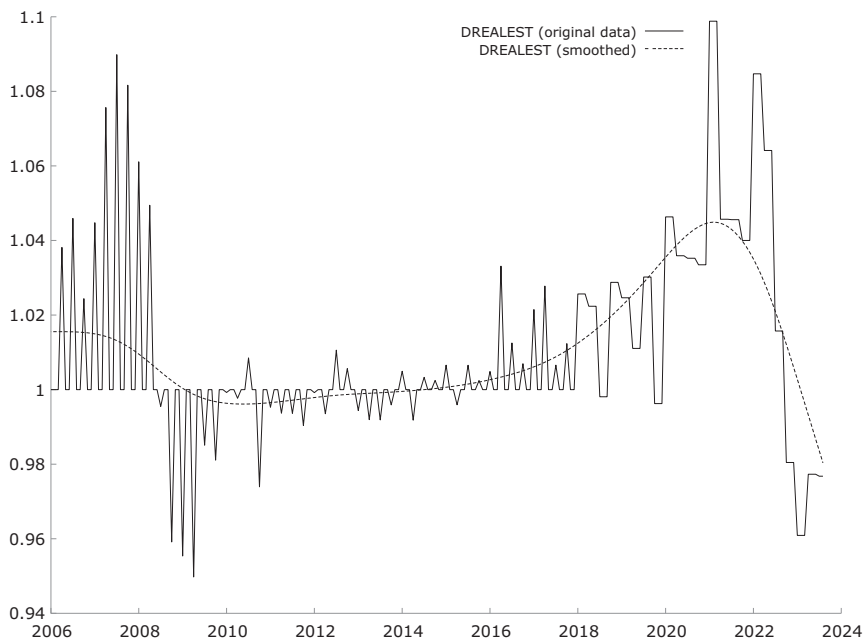


Fig. 6.6. Hodrick–Prescott Filter of the Time Series of Changes in the Prices of Residential Real Estate in Slovakia. *Source:* Author’s own processing using [NBS \(2024\)](#) data.

5. Conclusion

The development of the residential real estate market in Slovakia shows certain general features that can be theoretically predicted, but it also has its own specifics, which are connected to historical, cultural, and other elements specific to Slovakia. The general factors that significantly influenced the development of the residential real estate market include mainly the effects of the macroeconomic environment. In Slovakia, it has been confirmed that the financing and development of the real estate market requires a stable economic environment. The stabilization of the macroeconomic indicators of the Slovak economy contributed significantly to the development of the real estate market and its financing, especially the reduction of interest rates, the growth of employment, the performance of the economy, and last but not least, the adoption of the common currency, the euro.

The reduction of interest rates caused an increase in the availability of housing loans, which on the other hand, along with the growth in demand, caused an increase in the prices of residential properties. In the period after 2015, Slovak households were evaluated as the fastest indebted households within the EU,

which caused the need to limit the availability of loans. The decrease in the availability of loans was also caused by the increase in interest rates and the limits and restrictions on housing loans by the National Bank of Slovakia. Although rental housing began to increase after 2023, it was forced due to the unavailability of housing loans. Preference for owner-occupied housing still persists, due to the economic disadvantage of rental housing compared to housing loan repayments.

The analysis points out that individual factors affect real estate prices in Bratislava and Slovakia to a different extent. Real estate prices in Bratislava reacted more strongly to changes in interest rates and credit availability. In Bratislava, the influence of multiple ownership of properties held for rent, was also evident. We explain the connection with savings by the fact that the saved funds are invested in the secondary ownership of real estate, which is subsequently sold at a profit or used for renting. This is manifested to a greater extent in Bratislava. Of the macroeconomic influences, inflation had a significant impact on the growth of real estate prices in both groups, Slovakia and Bratislava. The positive development of employment was reflected in the growth of real estate prices in Bratislava.

The situation on the residential real estate market is undergoing major changes resulting from rising interest rates and inflation. At all levels of residential real estate market research, the need to develop affordable or rental housing, comes to the fore.

References

- Acolin, A. (2022). Owning vs. renting: The benefits of residential stability? *Housing Studies*, 37(4), 644–667. <https://doi.org/10.1080/02673037.2020.1823332>
- Aizenman, J., Jinjark, Y., & Zheng, H. (2019). Housing bubbles, economic growth, and institutions. *Open Economies Review*, 30, 655–674. <https://doi.org/10.1007/s11079-019-09535-9>
- Arundel, R., & Hochstenbach, C. (2020). Divided access and the spatial polarization of housing wealth. *Urban Geography*, 41(4), 497–523. <https://doi.org/10.1080/02723638.2019.1681722>
- Bieger, T., Beritelli, P., & Weinert, R. (2007). Understanding second home owners who do not rent – Insights on the proprietors of self-catered accommodation. *International Journal of Hospitality Management*, 26(2), 263–276. <https://doi.org/10.1016/j.ijhm.2006.10.011>
- Bohle, D. (2018). Mortgaging Europe's periphery. *Studies in Comparative International Development*, 53(2), 196–217. <https://doi.org/10.1007/s12116-018-9260-7>
- Brauner, R., & Plottová, S. (2017). Factors that affect the market prices of flat renting. In *Proceedings of the 14th international scientific conference European financial systems 2017*. Masaryk University. https://munishop.muni.cz/en/catalog/free-e-books/european-financial-systems-2017-munispace_948
- Broulíková, H. M., Huber, P., Montag, J., & Sunega, P. (2018). *Homeownership, mobility, and unemployment: Evidence from housing privatization*. ISE Working Paper No. 7. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2896765

- Bruchánik, R. (2023). *Staršie byty majú za sebou rok poklesu cien, nájomné stále rastie*. Kvartálna analýza realitného trhu, ročník 2023, 3. kvartál. <https://www.bencont.sk/app/cmsSiteAttachment.php?ID=520&disposition=inline>
- Cár, M. (2009). Výber faktorov ovplyvňujúcich ceny nehnuteľností na bývanie na Slovensku. *BIATEC*, 17(3), 2–8. https://www.nbs.sk/_img/documents/_publik_nbs_fsr/biatec/rok2009/biatec0309.pdf
- Cesnak, M., & Klacso, J. (2021). *Assessing real estate prices in Slovakia – A structural approach*. NBS Working paper 3/2021. National Bank of Slovakia. https://www.nbs.sk/_img/documents/publik/wp_3_2021_cesnak_klacso_assessing_real_estate_prices.pdf
- Cesnak, M., Klacso, J., Kupkovič, P., Moravčík, A., Rychtárik, Š., & Vrbovský, R. (2024). *Assessing residential real estate prices in Slovakia: Possible approaches and indices*. NBS Occasional paper, No 1/2024. <https://nbs.sk/dokument/b5de6821-fe5b-4cd9-9e1b-af4043d75e21/stiahnut/?force=false>
- Cronin, D., & McQuinn, K. (2016). Credit availability, macroprudential regulations and the house price-to-rent ratio. *Journal of Policy Modeling*, 38(5), 971–984. <https://doi.org/10.1016/j.jpolmod.2016.06.002>
- Cunha, A. M., & Lobão, J. (2021). The determinants of real estate prices in a European context: A four-level analysis. *Journal of European Real Estate Research*, 14(3), 331–348. <https://doi.org/10.1108/JERER-10-2020-0053>
- De Boer, R., & Bitetti, R. (2014). *A revival of the private rental sector of the housing market? Lessons from Germany, Finland, Czech Republic and The Netherlands*. OECD Economics Department Working Papers No. 1170. OECD Publishing. <https://doi.org/10.1787/5jxv9f32j0zp-en>
- Dröes, M. I., & Francke, M. K. (2018). What causes the positive price-turnover correlation in European housing markets? *The Journal of Real Estate Finance and Economics*, 57(4), 618–646. <https://doi-org.ezproxy.muni.cz/10.1007/s1146-017-9602-7>
- Ehrenbergerová, D., & Bajzík, J. (2020). *The effect of monetary policy on house prices – How strong is the transmission?* Working Papers Series 14/2020. Czech National Bank. <https://www.cnb.cz/en/economic-research/research-publications/cnb-working-paper-series/The-Effect-of-Monetary-Policy-on-House-Prices-How-Strong-is-the-Transmission-00001/>
- Endel, S., & Kuta, V. (2018). *Bydlení v souvislostech*. Vysoká škola báňská – Technická univerzita Ostrava.
- Eurostat. (2024). *Distribution of population by tenure status, type of household and income group – EU-SILC survey*. https://ec.europa.eu/eurostat/databrowser/view/ILC_LVHO02_custom_2618682/default/table?lang=en
- Greenwald, D. (2018). *The mortgage credit channel of macroeconomic transmission*. MIT Sloan Research Paper No. 5184–16. <http://dx.doi.org/10.2139/ssrn.2735491>
- Hegedüs, J., Lux, M., & Horváth, V. (2017). *Private rental housing in transition countries: An alternative to owner occupation?* Palgrave Macmillan.
- Hegedüs, J., Lux, M., & Teller, N. (2013). *Social housing in transition countries*. Routledge.
- Hubert, J. S., & Schmidt, T. (2019). *Cross-country differences in homeownership: A cultural phenomenon?* Deutsche Bundesbank No 40/2019. <https://www.bundesbank.de/resource/blob/812762/f8a280904a736a138a8f7d2e09dcd2f2/mL/2019-11-01-dkp-40-data.pdf>

- Kelly, R., McCann, F., & O'Toole, C. (2018). Credit conditions, macroprudential policy and house prices. *Journal of Housing Economics*, 41, 153–167. <https://doi.org/10.1016/j.jhe.2018.05.005>
- Kropáčková, S., Čudová, M., Šimeček, T., Podškubka, T., Laipold, M., Brodecká, V., & Hlúšková, R. (2022). *Bytové domy, zdroj příjmů i povinností*. Wolters Kluwer.
- Kuda, F., & Lux, M. (2010). *Bydlení v regionech: Důsledky regionálních rozdílů v dostupnosti bydlení*. Professional Publishing.
- Lennartz, C., Baarsma, B., & Vrieselaar, N. (2019). Exploding house prices in urban housing markets: Explanations and policy solutions for the Netherlands. In R. Nijskens, M. Lohuis, P. Hilbers, & W. Heeringa (Eds.), *Hot property: The housing market in major cities* (pp. 207–221). Springer.
- Lux, M. (2009). *Housing policy and housing finance in the Czech Republic during transition: An example of the schism between the still-living past and the need of reform*. Delft University Press.
- Lux, M., & Sunega, P. (2014). The impact of housing tenure in supporting ageing in place: Exploring the links between housing systems and housing options for the elderly. *International Journal of Housing Policy*, 14(1), 30–55.
- Mansfeldová, Z., & Tuček, M. (2002). *Současná česká společnost: sociologické studie*. Sociologický ústav AV ČR.
- Mikeszová, M., Sunega, P., Lux, M., & Aresta, V. (2018). *Vlastní bydlení jako finanční bonus k důchodu*. Sociologické nakladatelství SLON/Sociologický ústav AV ČR.
- Mnasri, A. (2015). Renting vs. buying a home: A matter of wealth accumulation or of geographic stability? *Journal of Economic Dynamics and Control*, 60, 42–72. <https://doi.org/10.1016/j.jedc.2015.08.008>
- NBS. (2024). *Štatistika*. <https://nbs.sk/statisticke-udaje/>
- Nemcová, D. (2016). State housing policy in Slovak Republic as the mean of stimulating demand in the real estate market. In *Drive your knowledge be a scientist: Conference proceedings of the 12th annual international Bata conference for Ph.D. students and young researchers*. Zlín. <https://digilib.k.utb.cz/handle/10563/45980>
- OECD. (2022). *HMI.3 housing tenures*. <https://www.oecd.org/els/family/HM1-3-Housing-tenures.pdf>
- Palacin, J., & Shelburne, C. R. (2005). *The private housing market in eastern Europe and the CIS*. Discussion Paper Series No. 2005.5. United Nations. https://unece.org/fileadmin/DAM/oes/disc_papers/ECE_DP_2005-5.pdf
- Pittini, A., Dijol, J., Turnbull, D., & Whelan, M. (2019). *The state of housing in the EU 2019*. Housing Europe, the European Federation of Public, Cooperative and Social Housing. <https://www.housingeurope.eu/resource-1323/the-state-of-housing-in-the-eu-2019>
- Plešivčák, M., & Buček, J. (2017). In the centre, but still on the periphery: Is there any room for development of socio-economically deprived region in Slovakia? *International Journal of Social Economics*, 44(11), 1539–1558. <https://doi.org/10.1108/IJSE-01-2016-0023>
- Schiller, R., & Weiss, A. (1999). Home equity insurance. *The Journal of Real Estate Finance and Economics*, 19(1), 21–47. <https://link.springer.com/article/10.1023/A:100779229387>
- Schwartz, H. M. (2020). Covering the private parts: The (re-)nationalisation of housing finance. *West European Politics*, 43(2), 485–508. <https://doi.org/10.1080/01402382.2019.1582254>

- Shiller, R. (2016). *Irrational exuberance*. Princeton University Press.
- Špirková, D. (2018). *Housing policy in the Slovak Republic*. IntechOpen.
- Statistical Office of the SR. (2024). *Statistics*. <https://slovak.statistics.sk/>
- Syrový, P. (2009). *Financování vlastního bydlení*. GRADA Publishing.
- Szelényi, I. (2014). Pathways from and crises after communism: The case of central Eastern Europe. *Belvedere Meridionale*, 16(4), 7–23. http://www.belvedere-meridionale.hu/?page_id=444
- Szolgayová, E., Hlaváčová, V., Kaliňák, M., Kollár, E., Kurňavka, J., Pilát, E., & Reháková, V. (2019). *Podpora nájomného bývania*. <https://www.zmos.sk/oznamy/podpora-najomneho-byvania.html>
- Szüdi, G., & Kováčová, J. (2016). “Building hope: From a shack to 3E house”—Innovative housing approach in the provision of affordable housing for Roma in Slovakia. *Journal of Housing and the Built Environment*, 31(3), 423–438. <https://www.jstor.org/stable/43907394>
- Tkacova, A., Gavura, S., Fulajtarova, M., & B.asistova, L. (2024). Determinants of real estate prices in Slovakia at the national and regional level. *AD ALTA Journal of Interdisciplinary Research*, 13(2), 250–256. <https://www.magnanimitas.cz/ADALTA/1302/PDF/1302.pdf>
- Vogel, H. L., & Werner, R. A. (2015). An analytical review of volatility metrics for bubbles and crashes. *International Review of Financial Analysis*, 38, 15–28. <https://doi.org/10.1016/j.irfa.2014.11.003>
- Winkler, H. (2010). *The effect of homeownership on geographic mobility and labour market outcomes*. University of California.
- Wu, Y., & Lux, N. (2018). U.K. house prices: Bubbles or market efficiency? Evidence from regional analysis. *Journal of Risk and Financial Management*, 11(3), 54. <https://doi.org/10.3390/jrfm11030054>