Is Housing for Everyone?
Comparative Analysis of Selected Regions in Slovakia

Andrej Včelík

University of Economics in Bratislava, Faculty of Commerce,
Dolnozemská cesta 1, Bratislava 5, 852 35
Slovak Republic
andrej.vcelik@euba.sk

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Abstract The property market and cost of housing are in the spotlight recently, not only as a result of its gradual increase but also as a consequence of latest governmental activities declaring housing and public rental market support as one of its main priorities. This paper shows the property market and residential property prices in the context of households´ disposable income across Slovakia and its sub-regions in the period 2012 - 2021. We see varying conditions between respective regions in terms of average income as well as property prices development. Average affordability index for each of Slovakian sub-regions is assessed combining these two variables. Our goal is to identify the most affected regions, outline an alternative approach for optimal support and investment allocation.

Key words: housing affordability, property prices, residential real estate market in Slovakia, regional differences, gross income, disposable income development

JEL classification: *R31, R58*

1. Introduction

In Slovakia, the real estate prices have been monitored since 2005 by the National Bank of Slovakia and since 2010 by the Statistical Office of the Slovak Republic too. Both institutions publish the prices per sqm, by respective residential segment (new or existing ones), regions, but also size and number of bedrooms. Besides those official statistical sources there are also some market participants also periodically publishing the market data – for example one of the most popular property websites www.nehnutelnosti.sk or some other companies managing their own analytical teams e.g. Bencont Investment or NARKS (National Real Estate Brokers Association).

After the 2006-08 boom the property market experienced certain freeze accompanied by slower transaction pace and overall price level stagnation as a consequence of the financial crisis. First signs of a recovery were witnessed back in 2014, since then the

property market has become year by year more liquid and vivid, indicating first signs of overheating in 2019 and later, when year-on-year price increases reached double-digit levels.

In this paper we analyse the property market development not only of its most liquid part – the capital city – but also in other regions of the country. Even the overall development shows the same (rising) trend across all analysed parts, there are some regional specifics as to the dynamics of the price development or certain income differences between the regional subareas.

Nevertheless, the real estate prices as such do not show clear picture without considering their macro economic context or their impact on the real living conditions across the population and households. Therefore, the property prices need to be considered also from the income perspective. Generally the following two approaches are usually applied - household´s purchasing power is mostly used. Alternatively, an investment based approach may be employed – considering the property price from a rate of return perspective (investment based perspective).

The National Bank of Slovakia therefore periodically publishes real estate indices as HAI – the housing affordability index or the composite housing price index based on the UBS Swiss Real Estate Bubble Index. There are also other respected and broadly accepted measurement methods as e.g. Deloitte Property Index etc. In our paper we adopt the Delloite´s approach, however by slightly adjusting it to national and regional context. The index is calculated for all parts of Slovakia.

2. Residential property market development in Slovakia

With the exception of an interim decline during the post 2008 financial crisis period, the real estate prices have been rising since 2014 and reached a double-digit y/y values in recent years:

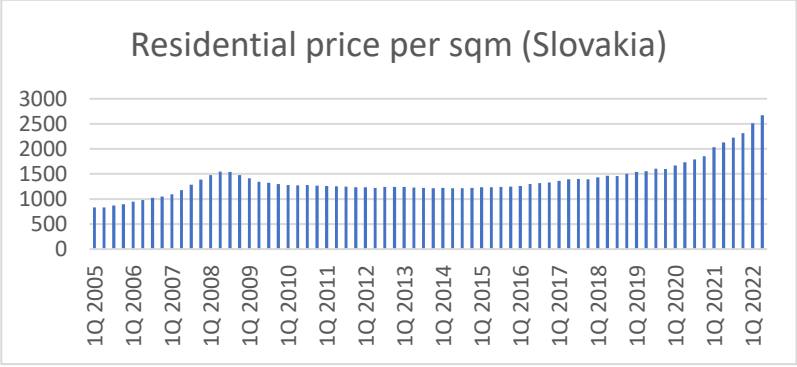

Fig. 1: Average price per sqm for the period 2005 – Q2 2022 (National Bank of Slovakia)

The chart shows average figures for the whole Slovakia; within this paper we analyze each of its eight subregions. Such price development was witnessed broadly and not only in the real estate segment; all asset classes experienced sooner or later a strong recovery period after the 2007/08 financial crisis effects were absorbed; mostly explained as a consequence of massive quantitative money easing policies of national banks willing to support economy and GDP growth.

However, in Slovakia – namely in the real estate market - there also some other major factors contributing to this market development.

2.1. Limited stock and new supply

New supply and delivery of additional residential stock seems to be extremely low in all parts of the country. In the most competitive market – the capital city – new yearly delivery hardly exceeds 1,3% of total stock, achieving 1,10% on average for the past 10 years. Slovakian regional cities suffer from even greater lack of competition and their situation is no better.

Table 1: Number of apartments in Bratislava, yearly increase in stock for the period 2011-20.

Bratislava	**2020**	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**	**2011**
Stock	219 297	216 818	214 026	211 299	208 558	206 655	204 363	202 744	201 219	198 356
year-on-year change	2 479	2 792	2 727	2 741	1 903	2 292	1 619	1 525	2 863	
in %	*1,1%*	*1,3%*	*1,3%*	*1,3%*	*0,9%*	*1,1%*	*0,8%*	*0,8%*	*1,4%*	

Source: Statistical Office Slovakia

The following reasons are generally identified to be contributing to these very low figures: First of all, it is current status quo with respect to the permitting process. The World Bank, in its annual *Doing Business* report[1], ranks Slovakia 146th with an average building permit issuance time of 300 days. The length and difficulty of receiving a building permit creates absolutely fundamental and determining barrier to the establishment of an effective competitive environment. Nonetheless, it is not only the building permit which causes a bottleneck in the new delivery; zoning as well as the environmental impact assessment process both take very long time and are easy to be disputed during the issuance phase, causing further delays in final granting and legal validity.

This whole topic has broader context, as it is directly related to the absence of clear urban-architectural rules and settings in the cities and deserves further special

[1] https://www.doingbusiness.org/en/data/exploretopics/dealing-with-construction-permits

discussion. It is not only Slovakian specific though; the same situation has been a long-lasting struggle in the Czech republic and Poland too.
When it comes to additional reasons contributing to low competition and delayed supply, some other industry related aspects need to be mentioned. The real estate industry is a heavily capital demanding one. That creates natural barriers of entry for any aspiring competitors. Land bank aspect also gives advantage to traditional and local players over the newcomers even non-local ones.

2.2. Demand drivers

There are, however, also many factors fueling the overall demand and supply/demand imbalance. Firstly, the low interest rates environment. Extremely favorable loan conditions combined with low interest rates have contributed to much easier access to the loans also for households with lower income and caused massive lending boom. In combination with historically lowest unemployment rates, low equity requirement or high loan to value ratios (the LtV limitation was introduced in 2018), the overall demand soared dramatically.

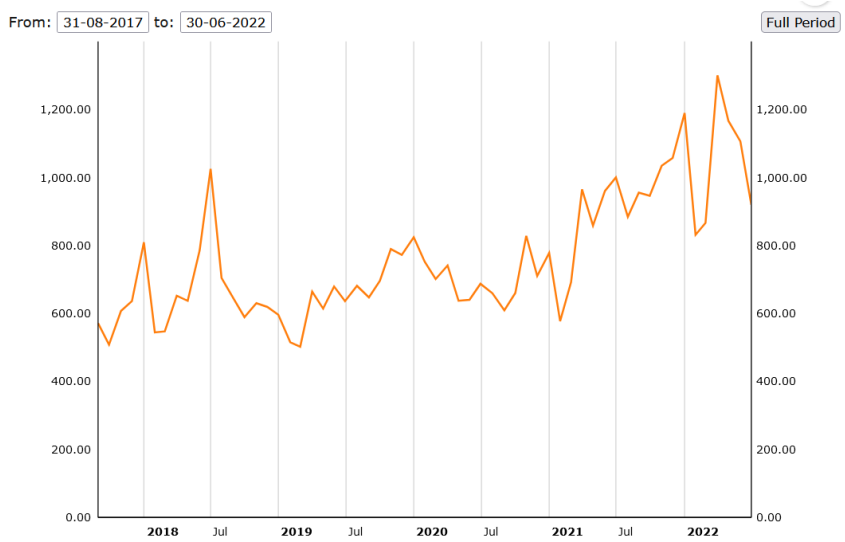

Fig. 2: Lending for house purchase excl. revolving loans and overdrafts, convenience and credit card debts. In millions €, monthly view for the period 31/8/2017 – 30/06/2022 (European Central Bank, Statistical Data Warehouse)

In larger cities some developers were reporting higher share of investment based demand in their new residential developments – share of new acquisitions based on investment purposes or free cash based acquisition - created additional demand acceleration.

The other major factor driving the demand is a strong preference for possessing own residential real estate - a very specific pattern for Slovakia. When it comes to the ownership preference, Slovakia holds the second place within the OECD countries with almost 90% share:

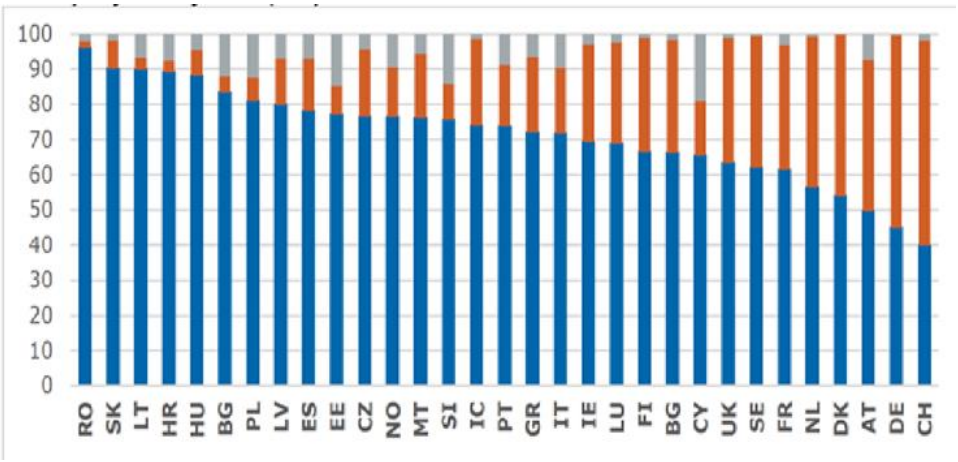

Fig. 3: Residential stock structure based on property ownership/rental in Europe (in %), blue – owned, orange – rented, grey – other (http://www.oecd.org/social/affordable-housing-database.htm)

Reason for this phenomenon is not only in the mentality of the population, but to a large extent also in the absence of any state support and affordability of rental housing in general. Until now, this issue in the state policy has narrowed solely to the social housing - i.e. indirect assistance to the families facing financial shortage and so on (it should also be noted that this role has been conducted mainly by local governments). Rental housing in the sense of residential construction targeting the middle-class income segment, young families or flats supporting the job mobility of the Slovaks had been completely non-existent until July 2022. As a consequence, the housing need and demand can be satisfied only by new construction activity and owner-occupied residential segment.

There are also other factors, listed by local experts and industry observers, affecting the demand side - e.g. inflation-fear based purchases (especially in the period from 2020) or some sort of market greed caused by the sharp property price increase.

The scientific literature offers numerous research papers globally investigating the relations and determinants on the property market. As for foreign countries the Chinese market is very well covered (e.g. Peng, Shunfeng 2016), European context has been researched by Hervé (2014), Shida (2021) or a pan-European study issued by the Bank for International Settlement (2020). The central - European context is described by Fidrmuc, Senaj (2010) or Czech authors Votava et al. (2021).

2.3. Regional market development

Regional specifics have been seen also through different dynamics of respective regional property markets. While the overall price development progressed as shown in Figure 1, some Slovakian subareas witnessed slightly different trends.

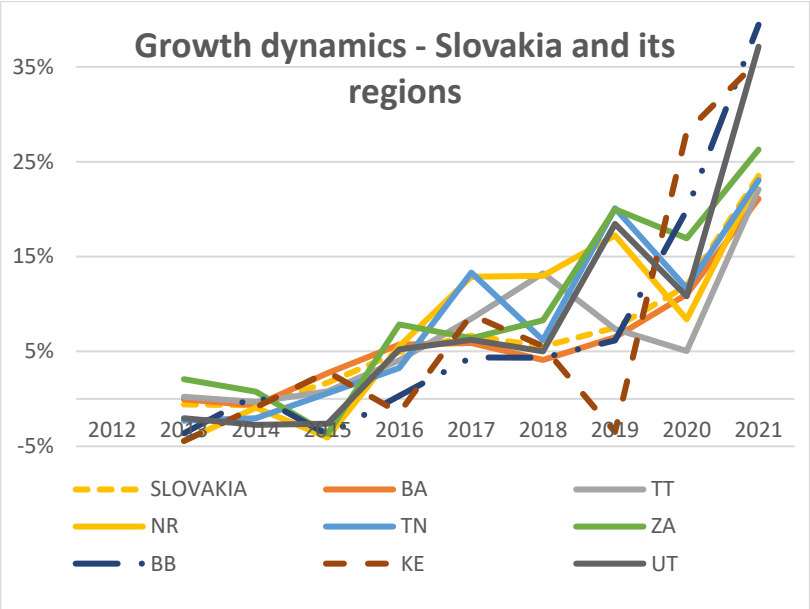

Fig. 4: Regional growth dynamics for the period, year-on-year property price change during the period 2012 – 2021 (National Bank of Slovakia, own calculations)

Some of the regions (Košice and Banská Bystrica) saw different development compared to the majority of region, however a more surprising view is the average price level change. While whole Slovakia reached 76% (period 2012 to 2021), Žilina, Trenčín and Prešov (relatively weaker regions), ranked the three highest growth ratios, exceeded 95% watermark.

Table 2: Regional growth dynamics per region, increase in price 2012 and 2021.

REGIONAL GROWTH DYNAMICS - PRICE PER SQM	
Region	2012 --> 2021 in %
ŽILINA	118%
TRENČÍN	97%
PREŠOV	96%
KOŠICE	85%

BANSKÁ BYSTRICA	80%
TRNAVA	77%
BRATISLAVA	70%
NITRA	63%
SLOVAKIA total	76,23%

Source: National Bank of Slovakia dataset, own calculations

3. Slovakia´s labor market, gross and disposable income situation

Out of the Visegrad countries, Slovakia has long term suffered from high unemployment rate – reaching the double-digit level until 2014. Improving economic sentiment and growth affected also the labor market positively, as a result the unemployment rate dropped to 5,0 – 7,0% since 2018 on.

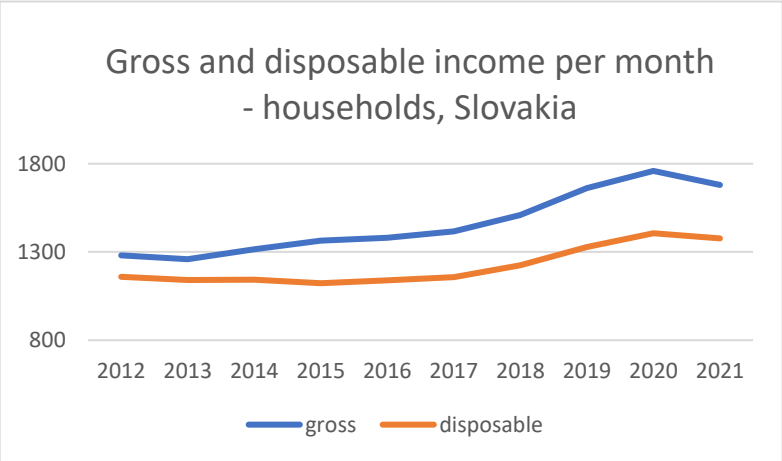

Fig. 5: Gross and disposable income per month – households, Slovakia, average for the period 2012 -2021. (Statistical Office of the Slovak Republic)

That development has positively materialized also into households´ income situation. On average 2021 vs 2012 gross or disposable income soared by 31% and 18,7% respectively.

Different dynamics has been observed in respective regions; however the attention needs to be drawn to relative gains for the eight subareas:

Table 3: Disposable income of households, Slovakia and regions (disposable income in 2012 per month, disposable income in 2021 per month, difference 2012/2021 in %, *difference for the gross income values 2012/2021 in %*, sorted)

region	disp 2012	disp 2021	disp 12 -> 21	*gross 12 -> 21*
NITRA	1 051	1 347	28,16%	*41,85%*
TRNAVA	1 145	1 457	27,25%	*41,83%*
ŽILINA	1 190	1 436	20,67%	*30,91%*
BRATISLAVA	1 330	1 515	18,71%	*31,07%*
BANSKÁ BYSTRICA	1 060	1 249	17,83%	*31,87%*
PREŠOV	1 145	1 339	16,94%	*25,33%*
KOŠICE	1 156	1 332	15,22%	*27,26%*
TRENČÍN	1 229	1 361	10,74%	*21,85%*
SLOVAKIA	1 160	1 377	18,71%	*31,07%*

Source: Statistical Office of the Slovak Republic, own calculations, http://datacube.statistics.sk/#!/folder/sk/1000424

Respective regions have seen very different development in their growth - while the two best performing ones achieved 27% to 28%, the Trenčín region rose by 10,7% only. It needs to be noted that the Trnava region includes suburbs of greater Bratislava area. Especially in the past 10 years the outflow of the upper middle class segment seeking a living outside the city was happening, so the data for this area may be influenced by this aspect. (The growth rate in the Nitra region is not clear, may be explained by increased FDIs heading to this area during the past years.)

Generally speaking, the growth of property price level compared to the income growth dynamics is very different – while the slowest relative growth in the property market between 2102 - 2021 reached 70-77%, the labor market added maximum 27% of the relative income growth during the same period.
The same approach for inter-regional comparison returned the following figures:

Table 4: Slovakia and its regions. Relative gross income increase, disposable income increase, property price growth, disposable income and property growth difference. All figure for the period 2012 – 2021.

	Gross income	disposable	prop price
ŽILINA	*30,91%*	20,67%	118,07%
TRENČÍN	*21,85%*	10,74%	97,36%
PREŠOV	*25,33%*	16,94%	96,00%
KOŠICE	*27,26%*	15,22%	85,11%
BANSKÁ BYSTRICA	*31,87%*	17,83%	80,48%
NITRA	*41,85%*	28,16%	91,52%
BRATISLAVA	*31,07%*	18,71%	70,15%

TRNAVA	*41,83%*	27,25%	77,19%
SLOVAKIA	*31,07%*	18,71%	76,23%

Source: Statistical Office Slovakia, National Bank of Slovakia, own calculations, http://datacube.statistics.sk/#!/folder/sk/1000424, https://nbs.sk/statisticke-udaje/vybrane-makroekonomicke-ukazovatele/ceny-nehnutelnosti-na-byvanie/ceny-nehnutelnosti-na-byvanie-podla-krajov/

Combining the previous views we came to some interesting results. For example the Bratislava region, having the highest residential price level, reached the slowest price increase witnessed and second lowest combined price/income growth. On the opposite, the Trenčín region with very low increase in wages and disposable income, recorded skyrocketing property growth of 97%, while still retaining the second lowest apartment price per sqm (1.297).
From the investment point of view also Žilina region was a good choice – it recorded the sharpest price increase of 118%. Even if accompanied with one of the highest disposable income increase, the final difference still even doubled unfortunately.

Generally, regional income/property price disparities have been observed in many other countries and regions and are well covered by the scientific literature *(i.a.)* – Germany (Bischoff 2011), Germany and UK (Blaseio, Jones 2019) or China (Cheong et al. 2020). The local context was thoroughly covered by a Czech study (Votava et al. 2021) analyzing eight factors and their impact on the pricing trends. This paper´s main aim is to compare Slovakia´s major subregions and their affordability ratios as a basis for further research.

4. Discussion

For the final discussion on real housing affordability in Slovakia combining both income and price-based view need to be applied.
Out of the property indexes that are used worldwide we opted for the Deloitte Property Index, which is well accepted and comparable also with other countries or regions. The index computes number of gross income multiples needed for a 70 sqm large apartment purchase in respective country or region.
The gross value is generally applied in order to avoid bias deriving from countries´ different tax systems and their impacts on the disposable income figures. For a single country calculation, tough, we include also the net figures as those describe more precisely the overall price burden.

Table 5: Deloitte Property Index, calculated for all regions. Typical apartment = a 70 sqm large apartment, multiples of yearly disposable and gross income for acquisition of typical apartment.

Region	typical apartment price	multiples of yearly income	
		disposable	gross
BRATISLAVA	197 798	10,88	8,69
KOŠICE	125 877	7,88	6,53
PREŠOV	110 190	6,86	5,71
ŽILINA	116 017	6,73	5,53
BANSKA BYSTRICA	96 554	6,44	5,26
TRNAVA	102 176	5,84	4,78
TRENČÍN	90 800	5,56	4,60
NITRA	82 048	5,08	4,16
SLOVAKIA	***152 308***	***9,22***	***7,56***

Despite relatively low income levels both Nitra and Trenčín regions keep the position of the most affordable regions from the housing point of view using the Deloitte methodic. Due to their very favorable starting position (2012 index of both circa 3,1) even the high property price increases in the past periods did not decrease the final housing affordability ratio.

So which region recorded the highest deterioration in the housing affordability over the period 2012-2021?

Table 6: Deloitte Property Index, difference in values for 2021 and 2012, own calculation.

	2012	**2021**	**difference**
BRATISLAVA	7,28	10,88	49%
TRNAVA	4,20	5,84	39%
TRENČÍN	3,12	5,56	78%
ŽILINA	3,73	6,73	81%
BANSKA BYSTRICA	4,21	6,44	53%
KOŠICE	4,90	7,88	61%
PREŠOV	4,09	6,86	68%
NITRA	3,40	5,08	49%

Source: previous data sources, own calculation

5. Concluding remarks

Since 2012 both categories – disposable income and property prices have seen gradual increase. As the dynamics of the income growth does not correspond with the property market dynamics, overall housing affordability deteriorated. Considering an intra-regional comparison, Slovakian sub-regions have also witnessed some disproportionate trends. As shown in the Table 4, Bratislava and Trnava region recorded lowest combined increase in property prices vs. disposable income increase; unlike to e.g. Žilina or Trenčín having higher unemployment rate for instance. There are also some other unexpected outcomes – Nitra, Trnava and Žilina being the winners of the 2012 -> 21 increase on the income side.
Therefore, more complex view need to be applied when assessing the real housing affordability or its progress particularly to control the effects of more contextual factors such as salaries, number of completed apartments per year, marriage/divorce rate, regional population growth, interest rates, construction activity etc. Moreover, it seems that many of the factors mentioned have different correlation effect through according to the related research.

The ruling coalition has included the law on rental housing among its priorities shortly after its formation. Respective law finally came into force on 1 July 2022. A housing affordability approach could and should be one of the decisive criterions for allocating the state support or its prioritization. Opposite to the expectations – not the traditionally less successful regions are the ones most affected; our analyses shows that the largest cities and economically strong regions suffer from sharpest housing affordability deterioration.

The main challenge for further research should also be the data collection and sorting of real estate submarkets. The most reliable source – the cadastral office had not been collecting and releasing any datasets until 2019. Besides that, the data is mostly available on a whole-region basis only – inputs for respective cities or subregions are not being collected by any governmental bodies. Those figures are watched by some private entities, though underlying micro datasets are not available for further statistical processing.

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