

THE IMPORTANCE OF UNIVERSITIES FOR SOCIETY AND ECONOMY THE EXPERIENCE OF RESEARCHERS FROM THE VISEGRÁD GROUP

edited by Bogusława Drelich-Skulska
Magdalena Sobocińska
Andrea Tomášková



Publishing House of Wrocław University of Economics and Business
Wrocław 2024

Reviewer

Radosław Baran

Copyediting

Elżbieta Macauley, Tim Macauley, Agnieszka Flasińska

Proofreading

Barbara Łopusiewicz

Typesetting

Małgorzata Myszkowska

Cover design

Beata Dębska

The book cover uses images from Adobe Stock

© Copyright by Wrocław University of Economics and Business
Wrocław 2024

Copyright notice is valid until 31 July 2025.

Since 1 August 2025 the publication is available
under Creative Commons Attribution-ShareAlike 4.0 International License (CC BY-SA 4.0).
To view a copy of this license, visit <https://creativecommons.org/licenses/by-sa/4.0/deed.pl>



ISBN 978-83-67899-91-8 (for the paper version)

ISBN 978-83-67899-92-5 (for the electronic version)

DOI: 10.15611/2024.92.5

Quote as: Drelich-Skulska, B., Sobocińska, M., & Tomášková, A. (Eds.). (2024). *The Importance of Universities for Society and Economy. The Experience of Researchers from the Visegrád Group*. Publishing House of Wrocław University of Economics and Business.

Printing: TOTEM



CHAPTER 10

Housing Affordability in the Visegrád Countries

Eva Ardielli

Robert Kovács

Marta Maciejasz

David Slavata

Quote as: Ardielli, E., Kovács, R., Maciejasz, M., & Slavata, D. (2024). Housing Affordability in the Visegrád Countries. In B. Drelich-Skulska, M. Sobocińska, & A. Tomášková (Eds.), *The Importance of Universities for Society and Economy. The Experience of Researchers from the Visegrád Group* (pp. 163-181). Publishing House of Wrocław University of Economics and Business.

DOI: [10.15611/2024.92.5.10](https://doi.org/10.15611/2024.92.5.10)

Abstract: Housing has always been, is and most likely will be a very sought-after and important good from the point of view of members of society. It has the potential to support households in fulfilling a whole range of their needs, and has many unique features, among which cost is a very important one. This means that a household must have sufficient financial resources to be able to purchase property. Housing affordability shows whether a typical family earns enough income to qualify for a mortgage loan on a typical home at the national and regional levels based on the most recent price and income data (Housing Affordability Index). It informs how easily a household can buy its own home based on its own income. The V4 countries have undergone an enormous economic transformation in the last 30 years, which also concerned the housing market. Thus this chapter aimed to compare Czech, Polish and Hungarian regions based on selected housing indicators and assess the level of housing affordability using the calculated Housing Affordability Index (SAI). The research was to determine whether similar trends were observed across the regions of the three Visegrád countries.

Keywords: housing affordability, Housing Affordability Index, Visegrád countries



10.1. Introduction

Real estate is primarily a tool for meeting one's own needs (housing), yet it is also a subject that should be treated in many aspects. Firstly, real estate has a potential to support households in fulfilling a whole range of needs. Secondly, thanks to real estate purchase, household can achieve various goals, both in the economic and financial dimension, as well as in the more personal, psychological and social ones. Thirdly, real estate serves many functions that concern many areas of human life. Fourthly, operating on the real estate market is quite complicated in formal terms and sometimes it is safer to use the services of professionals, i.e. an advisor, intermediary, manager or appraiser. At the same time, it may generate ethical problems resulting from the possibility of abuse by entities professionally dealing with the real estate. The goals pursued by households in this market depend to a large extent on their financial situation and activity of the public sector. The state can undoubtedly support the development of construction and the creation of new housing material directly and indirectly at various stages of investment project implementation, but it can also effectively inhibit initiatives undertaken by real estate market participants. All these elements determine housing affordability. State housing policy is therefore an important element in the process of meeting the housing needs of society, and the roles played by the state in solving housing problems will determine housing affordability within a given society in a given moment of time. Therefore, the aim of this chapter was to compare housing and its affordability in three of the four V4 countries: Czechia, Hungary and Poland.



10.2. Housing and Its Affordability

Housing (real estate, dwelling, accommodation) has always been, is and most likely will be a very sought-after and important good from the point of view of society. It is identified with a sense of security and freedom, and according to Maslow's pyramid of needs, and is in second place, right after biological needs (Gerrig & Zimbardo, 2001). Every person (family) strives to obtain their own premises, which gives them shelter from both weather conditions and undesirable situations, whilst it also contributes to ensuring the sense of independence associated with having the right to own the place of residence. Therefore, it is not surprising that every person (family) sets a life goal to buy or build their own apartment or house. The state should support society's efforts to achieve these goals. The reasons may be various, but the psychological aspect of this phenomenon is very important. Achieving personal goals always brings a subjective feeling of happiness. Satisfied individuals usually have a favourable

attitude towards organizations supporting them, which in this case should be the state, and translating this into political factors – the authorities ruling in the country at a given time. In turn, from the economic point of view, achieving housing goals causes the development of this market by stimulating demand for construction products. Housing affordability shows whether a typical family earns enough income to qualify for a mortgage (loan) on a typical home at national and regional levels based on the most recent price and income data (National Association of Realtors, 2024). It shows how easily a household can buy its own accommodation based on its own income.

Housing affordability can be determined by several factors including: the rate of inflation, the population size, the cost of housing, the loan interest rate, the rate of housing construction, the investment scale, the income level of the population, and the economic system's overall development level (Kleshcheva, 2021). In this context, a system of supporting citizens in their efforts to achieve their goals, including those related to meeting housing needs, is very important.



10.3. Housing Market in V4 Countries

In the current period of dynamic changes in the economy and society, the topic of housing policy and housing affordability is becoming increasingly important. The V4 countries are significantly affected by the consequences of the economic and energy crisis, facing high inflation, high interest rates and reduced performance of the construction sector. All these aspects are reflected in the current unaffordability of housing, especially for the socially disadvantaged and the young generations entering the labour market.

Czechia is according to Deloitte (2021) one of the countries with the lowest housing affordability in Europe. Real estate prices in Czechia are growing faster than household disposable income (OECD, 2021). Moreover, the V4 countries are among those where ownership housing traditionally prevails. The population has a low willingness to live in rented housing in the long term, which increases the demand for own housing even more. Nevertheless, it is estimated that there are up to 600,000 available flats in Czechia that have been unoccupied for a long time (Eurostat, 2020). It is the intention of the current government to use appropriate instruments to help bring these flats back to the market. Various policy options are being considered, such as an increase in property tax, which will affect the owners of the second and every other property, as well as reform measures in the form of grants for reconstruction, but also reducing the risk associated with renting out flats in the form of a state guarantee for tenants, which will encourage owners to offer the flat for rent. Currently for example, the Czech Housing Support Act is being drafted and comes with

a system of positive incentives for so-called guarantors who will guarantee tenants to owners. The guarantor can be a municipality, a region or other legal entities that provide social services or are engaged in real estate activities. Czech municipalities should therefore play an important role in terms of increasing housing affordability in the future, and should take on the role of guarantor. Regarding the possibility of municipalities owning their own housing stock, currently they do not usually have significant housing resources. The housing stock has largely been privatised, and the remainder are often in an unsatisfactory condition, without necessary investment in the long run and in many cases unoccupied. Municipalities should ensure their ability to become a guarantor of rental housing and be able to effectively manage their housing stock and offer social housing to groups in need.

The population of Hungary in 2022 numbered 9.69 million, and the number of housing units amounted to 4.58 million, i.e. 210 persons for 100 housing units. The indicator for population density by NUTS2 units was the lowest for Budapest (175 inhabitants for 100 units) and the highest for Pest County (257 inhabitants for 100 units), showing the strong suburbanisation process in the surroundings of Budapest (approximately Pest County) (Központi Statisztikai Hivatal [KSH], 2024).

The quality of Hungarian housing stock is better than the European average if we take some European deprivation indicator: only 5.4% of Hungarians suffered to not be able to protect adequately their housing in 2021 while European average was 6.9%. Yet, this indicator was significantly better for Czechia (2.2%) and Poland (3.2%) (Eurostat, 2022). A common phenomenon in former communist countries and among those in CEE is the high share of people living in housing owned by themselves or their family (household) members. For Hungary it is 91.7% and 86.8% for Poland and 78.3% for Czechia (Eurostat, 2022). In the case of Hungary this was product of the transition period (the late 1980s to the early 1990s) when public housing was privatised, partly as a popular act, and partly the pass the duty of renovation onto new owners.

While the entire housing stock in Hungary increased by 2% between 2000 and 2020, the municipal stock decreased by 40%. Faster decrease was experienced by the public housing in Budapest where in two decades half of it disappeared. Even so in 2022, 35% of municipal housing in Budapest numbered 39 736 units. The smallest housing stock of Hungarian regions is that of Pest County, the 3% of the municipal stock and 11% of all Hungarian residential accommodation.

Housing affordability is twofold. On the one hand it means accesses to living somewhere by renting or purchasing, and on the other it is ability cover cost related to the housing. Daily (monthly) housing expenditures in Hungary in 2021 assured a relatively good position for its citizens, representing 12.5% of their disposable income whose share is 1.54% lower than the EU average (19.3%). This position seems to be much better than in other countries of the regions given that Czech (19.3%) and Polish (17.9%) values are closer to those of the EU.

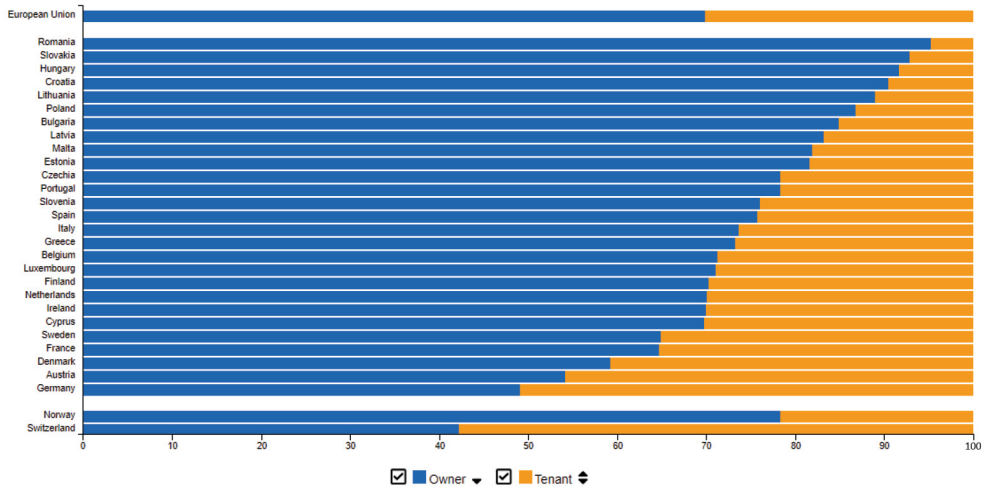


Fig. 10.1. Share of people living in households owning or renting their home, 2021

Source: (Eurostat, 2022).

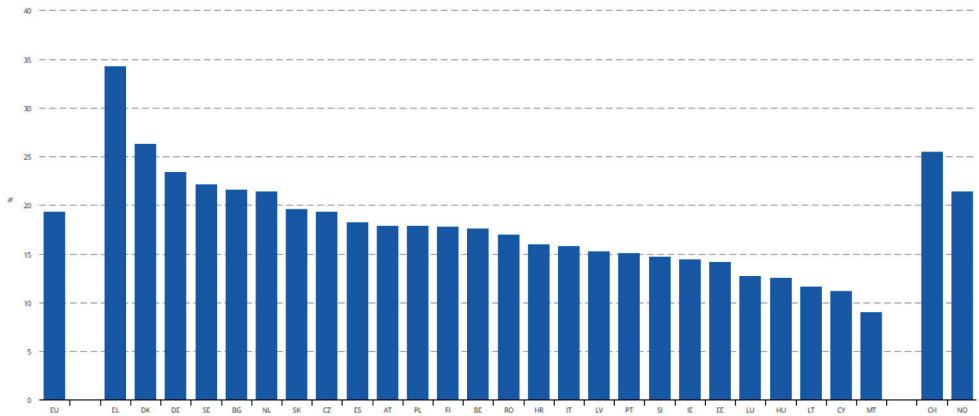


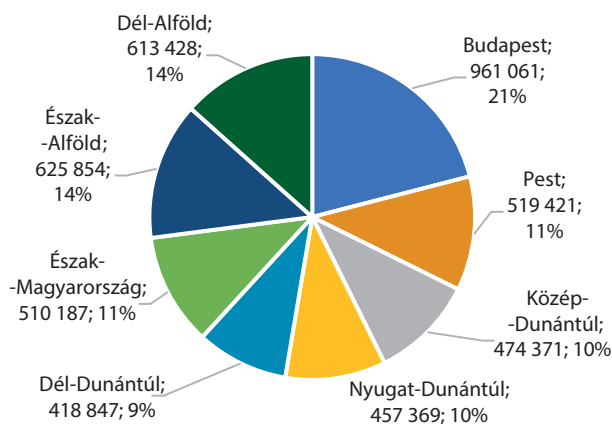
Fig. 10.2. Housing costs in disposable income, 2021

Source: (Eurostat, 2022).

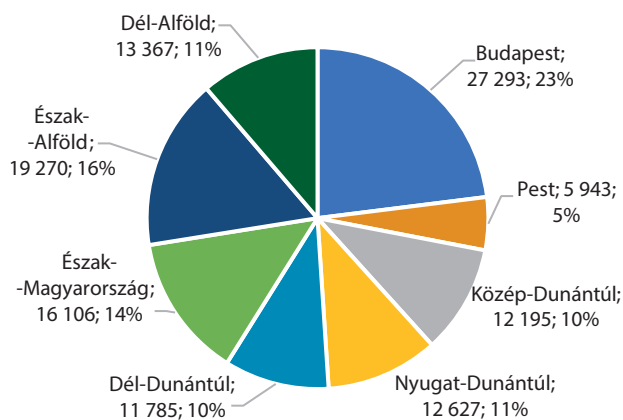
Secondly, to buy secondary-market housing, the average Hungarian needed 6.8 total yearly disposable income in 2022. In poorer regions this value was lower (4.2 years for Észak-Magyarország) and was close to double for Pest County (12.3 years, Budapest's agglomeration). However, for the Budapest itself, it stayed under 10 years (9.8 years). These numbers were quite stable during the last five years for Pest County, which experienced a significant (50%) increase from 8.4 years (2017) to

12.3 (2020). This phenomenon can be related to the government policy of help for families to get a home on better financial conditions, affecting mainly those areas where they represent a higher share of the population.

In 2022, based on data from the Hungarian Statistical Office, the market of secondary housing registered 118 586 transactions. This corresponds to 2.6% of the housing stock, i.e. 25.89 transactions per 1000 housing units. It is difficult to determine regional disparities, except for Pest. The value for Budapest (28.40 transaction for 1000 units) was not significantly higher than in other regions. However, in Pest the number of registered transactions in 2022 was relatively low (11.44 transactions per 1000 units).



(a) Distribution of housing stock by regions



(b) Distribution of housing transactions by regions

Fig. 10.3. Housing stock and transactions in Hungary, 2022

Source: (KSH, 2024).

For housing rentals in the municipal sector there were no big differences among the regions in 2022; rentals varied between 0.88 EUR/m² (Dél-Dunántúl) and 1.42 EUR/m² (Pest).¹ In the case of municipal housing, individual situation can determine the reasons for the price. Moreover, the municipal rental market is divided into three type of rentals (social housing – the biggest share [50%], costs-related rental [29%], and rented at market price [16%]). The last five years showed the increase of proportional cost of renting and shrinking social renting for municipal stock. At the same time, market rental prices varied between 5.40 EUR/m² (Észak-Magyarország) and 9.32 EUR/m² (Budapest). Market prices were higher for Budapest (9.32 EUR/m²) and Pest (7.37 EUR/m²) in 2022.

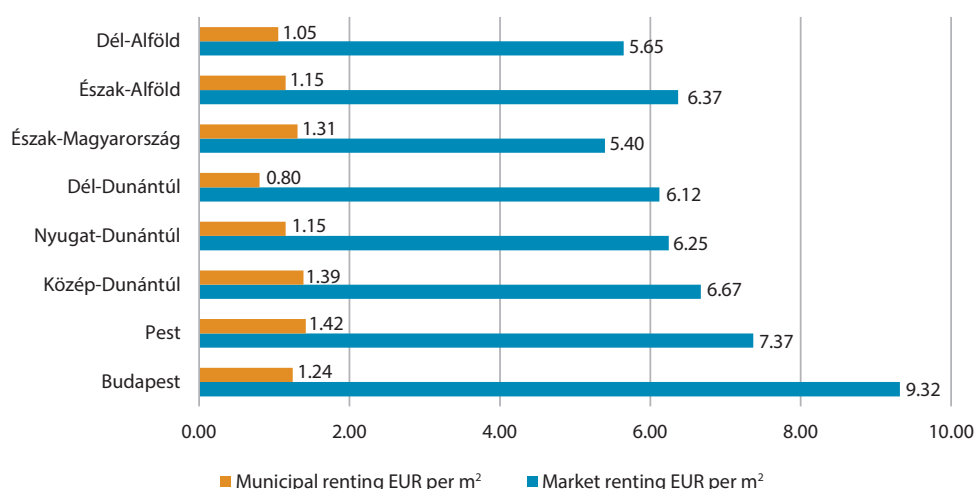


Fig. 10.4. Housing rentals for market and municipal sector, 2022

Source: (KSH, 2024; ingatlan.com).

Investments in housing represented 5.8% of EU GDP in 2021. This number was a bit lower for Czechia (4.7%), much lower for Hungary (3.9%) and even lower for Poland (2.3). The lower interest for housing investment was also reflected in the issuing of new building permits and new constructions.

In Hungary, the building of housing by construction companies is encouraged with a lower (5%) value added tax rate from 2022, and investment by private persons is influenced by stricter energy efficiency inscriptions. In summary, constructions by companies decreased slowly from 66 to 60% in one year. A positive sign in housing investment was the increase of the number of housing loans in 2016 by 32%,

¹ Prices were converted into euros based on the conversion rate of the Hungarian National Bank on 30 December 2022: 400.25 HUF/EUR.

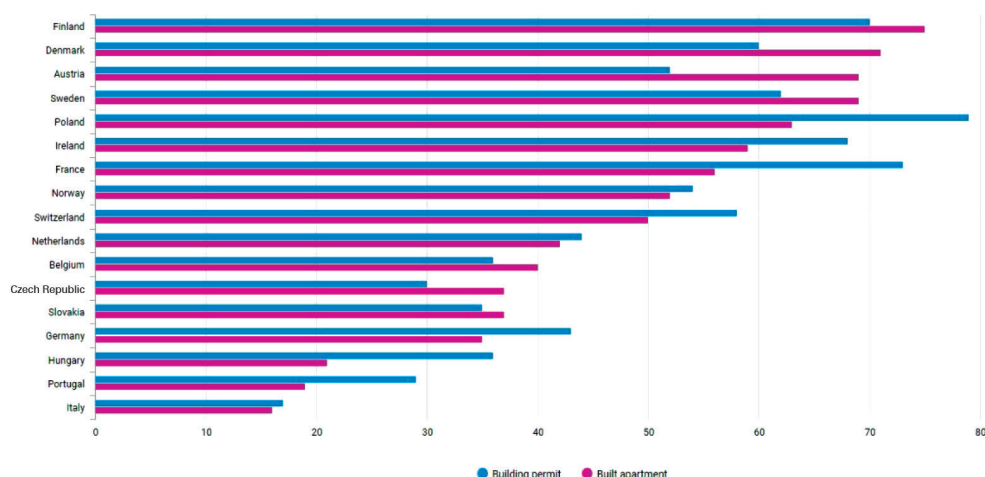


Fig. 10.5. Number of building permissions and built dwelling per ten thousand inhabitants in EU countries, 2022

Source: (KSH, 2024; buildcon).

from 9.36 billion EUR to 12.32 billion EUR.² Interestingly, while subsidies for housing stagnated (−0.3%), the non-subsidised investment increased by 41.4%. In general, approximately half of housing loans was used for purchases in secondary property market. From the second half of 2022, new housing loans shrank by 31%. Housing subsidies amounted to EUR 1.64 billion in total for the period between 2016 and 2022.³ Again more than a half was used to buy secondary housing and around 1/3 to buy or to build new housing.

The housing situation in Poland has been improving in recent years. Data from the Central Statistical Office show that in the period 2013-2022 the number of dwellings put into use increased from 145 thousand to 220 thousand, which constitutes over a 50% increase (Ministerstwo Rozwoju i Technologii, 2024). At the same time, the number of apartments per 1,000 inhabitants increased from 359.9 to 412.4 (2022), which is over 14% more. The average size of the apartment is also increasing (73.1 in 2013 and 75.3 in 2022), the average usable area in m² per person (26.3 in 2013 and 31.1 in 2022), while the number of people per apartment is decreasing (2.78 in 2013 and 2.42 in 2022). These data show quite a positive picture of the Polish housing market,

² Prices were converted into euros based on the conversion rate of the Hungarian National Bank respectively on 30 December 2016: 311.02 HUF/EUR, and on 30 December 2022: 400.25 HUF/EUR.

³ Prices were converted into euros based on the conversion rate of the Hungarian National Bank corresponding to the official conversion rate of the last day of the year, i.e. 2016: 311.02; 2017: 310.14; 2018: 321.51; 2019: 330.52; 2020: 365.13; 2021: 369.00; 2022: 400.25 HUF/EUR.

but regarding its affordability it seems not so clear. There are people – even those with average, not the lowest income – who have a problem meeting their housing needs, but also, after paying all the bills and fees related to their home, they do not have enough money for a decent life. The problem is not only the high rate of housing costs, but also a rental gap that concerns over one-third of the population. According to Eurostat, Poles spend on average 17.9% of their income on housing costs. This is still slightly below the European average of 18.9% (*W Polsce brakuje...*, 2024). The Habitat for Humanity Foundation notes that in Poland there has been no statistical housing deficit since at least 2009, and there are even 1.3 million more apartments than households. However, their prices are too high for a single family, also in relation to wages. The problem is made worse by the fact that in Poland, 60% of newly built houses and apartments are development investments (*W Polsce brakuje...*, 2024). This shows the importance of state and municipal policy, and developing adequate legal solutions to support households in increasing housing affordability.

10.4. Methods and Data

There are various approaches to measuring housing affordability (Anacker, 2019; Czischke & van Bortel, 2018). The predominant method involves comparing financial aspects of housing affordability, typically by examining ratios of financial index numbers. The most commonly employed indicators include the income-to-price ratio and the income-to-rent ratio (Bieri, 2014). Another approach considers the physical aspect of affordability, focusing on metrics such as the quantity of housing units built or available within the economy (Urban Reform Institute [URI], 2022). However, relying solely on separate indicators may not offer a comprehensive view of the issue. Thus, there is a need to develop new methodologies in the realm of housing affordability assessment.

This chapter introduces a novel evaluation methodology that offers a more comprehensive assessment of housing affordability. This methodology encompasses four fundamental indicators, both financial and physical in nature, which include IR (income-to-rent ratio), IP (income-to-price ratio), FS (number of flats for sale per 1000 inhabitants), and FR (number of flats for rent per 1000 inhabitants). The indicators are logically defined. A higher value of the indicator signifies better housing affordability. The calculated indicator (SAI) encapsulates the comprehensive level of housing affordability in the region. The SAI is computed according to formula (1):

$$SAI = \frac{(FR * FS) + (FS * IP) + (IP * IR) + (IR * FR)}{2}, \quad (1)$$

where: FR – flats for rent per 1000 inhabitants, FS – flats for sale per 1000 inhabitants, IP – income to price ratio, IR – income to rent ratio.

The calculation of FR , FS , IP and IR ratio is summarised in formulas (2), (3), (4) and (5):

$$FR \text{ ratio} = \frac{Fr}{Inh.}, \quad (2)$$

where: Fr – flats for rent in the housing market, $Inh.$ – population of region.

$$FS \text{ ratio} = \frac{Fs}{Inh.}, \quad (3)$$

where: Fs – flats for sale in the housing market, $Inh.$ – population of region.

$$IP \text{ ratio} = \frac{I}{P}, \quad (4)$$

where: P – average flat price per m^2 , I – average year personal income.

$$IR \text{ ratio} = \frac{I}{R}, \quad (5)$$

where: R – average year rent per 67 m^2 flat, I – average year personal income.

The primary source of data for describing the Czech real estate market was the Internet analytical portal Tržní ceny (2024). Information regarding the Polish real estate market was sourced from Otodom (2024). The data describing Hungarian real estate market were obtained from Realestate (2024).

The data covered details on flat prices, rental rates, and the proportion of flats available for sale. Additional necessary data were obtained from the official national statistical offices (Český Statistický Úřad [CZSO], 2023), (Główny Urząd Statystyczny [GUS], 2023) and (Központi Statisztikai Hivatal [KSH], 2022) particularly focusing on information delineating salary levels in Czech, Polish and Hungarian regions, respectively. The analysis reflects the real estate market situation as of April 2024.

10.5. Results

This chapter compares Czech, Polish and Hungarian regions based on selected housing indicators and assess the level of housing affordability using the calculated Housing Affordability Index (SAI), comparing 90 regions. The research aimed to determine whether similar trends were observed across the regions of the three Visegrád countries.

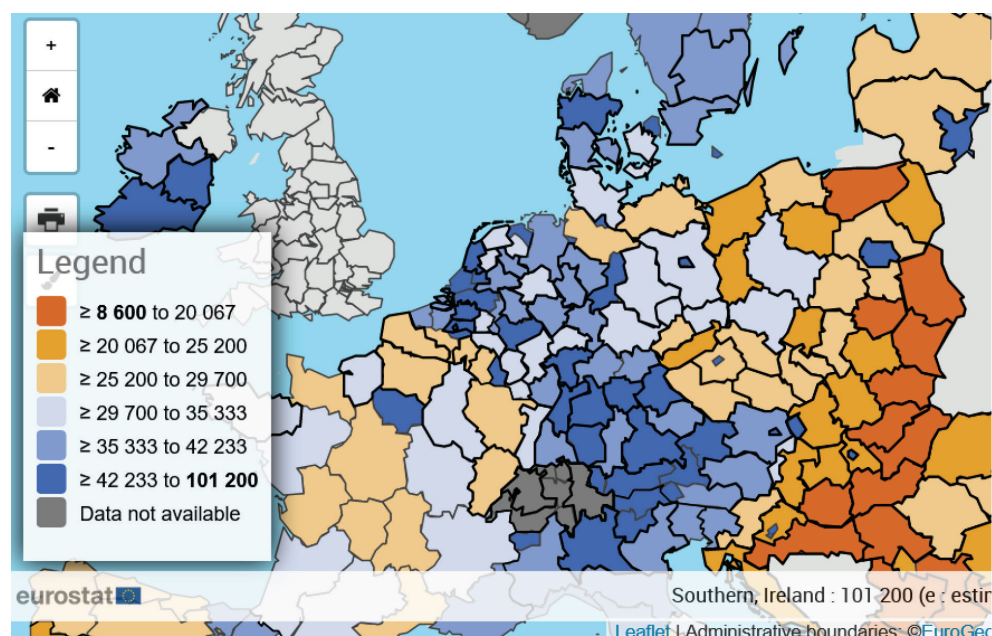


Fig. 10.6. Regional gross domestic product (PPS per inhabitant) by NUTS 2 regions

Source: (Eurostat, 2022).

Czechia is divided into 14 self-governing regions and 6,253 municipalities. Outside of Prague, the territory is further divided into 76 districts. The regions of Czechia serve as higher-level territorial self-governing units within the country. A summary of Czech regional data is available in Tab. 10.1.

Table 10.1. Housing market regional data in Czechia (April 2024)

Region	Prices/m ² (thousand CZK)	Sale ads (number)	Month rent/m ² (CZK)	Rent ads (number)	Average monthly gross wages (CZK)	Population in 2023
1	2	3	4	5	6	7
Prague	128.8	2 648	424	3 128	53 347	1 357 326
Jihomoravský kraj	73.0	863	286	1 066	42 399	1 217 200
Středočeský kraj	68.3	1 091	246	641	43 992	1 439 391
Liberecký kraj	58.2	582	220	321	39 156	449 171
Zlínský kraj	56.8	327	230	325	39 160	580 531
Královéhradecký kraj	56.7	472	205	263	40 471	555 267
Jihočeský kraj	54.5	720	211	379	39 663	652 303
Plzeňský kraj	52.3	480	222	331	41 333	605 388

Table 10.1, cd.

1	2	3	4	5	6	7
Karlovarský kraj	51.5	806	186	252	37 470	293 595
Pardubický kraj	49.6	384	209	321	38 647	528 761
Kraj Vysočina	49.5	275	208	168	39 771	514 777
Olomoucký kraj	48.9	465	207	399	39 023	631 802
Moravskoslezský kraj	42.7	909	189	1 324	39 329	1 189 674
Ústecký kraj	30.3	1 367	187	913	40 122	812 337

Source: (CZSO, 2023; Tržní ceny, 2024), own calculations.

When comparing the Czech regional data, the highest prices for flats are found in the Prague region (128,800 CZK/m²). Both flat prices and rents are notably higher in Prague compared to other Czech regions. Moreover, Prague boasts the highest number of flats available for sale (2648) and rent (3128) on the housing market. Additionally, Prague records the highest average annual salary (53,347 CZK).

The lowest flat prices are observed in the Usti region (Ústecký kraj, 30,300 CZK/m²). The lowest number of flats for sale is found in the Highlands region (Kraj Vysočina (275). The lowest rent is reported in the Karlovy Vary region (Karlovarský kraj, 186 CZK/m²/month). Finally, the lowest average annual salary is reported in the Karlovy Vary region (37,470 CZK).

Table 10.2 presents the fundamental housing indicators for Czechia, including the resulting SAI values for its regions. The data reveals that the South Moravian (Jihomoravský kraj) region exhibits the lowest housing affordability, with an SAI value of 11.46. Conversely, the Usti region (Ústecký kraj) boasts the highest SAI value (41.56), indicating the highest housing affordability. Surprisingly, the Prague region does not have the lowest housing affordability; its SAI value is 13.93.

Poland's administrative division follows a three-tiered structure. The country is divided into voivodeships (provinces), which are then subdivided into powiats (counties or districts), and finally into gminas (communes or municipalities). Currently, Poland comprises 16 voivodeships, 380 powiats (including 66 cities with powiat status), and 2,478 gminas. A summary of Polish regional data is available in Tab. 10.3.

When analysing Polish regional data, the highest flat prices are found in the Małopolskie voivodeship (16,000 PLN). Rentals are notably higher in the Mazowieckie region than in other Polish regions (84.7 PLN/m²/month). Furthermore, the Mazowieckie region boasts the highest number of flats available for sale (10,317) and for rent (8,124) on the housing market. Additionally, this region records the highest average annual salary (8,943 PLN).

Table 10.2. Affordability index SAI in the Czech regions (April 2024)

Region	Flats for sale/ 1000 inh.	Flats for rent/ 1000 inh.	Income/ price	Income/ rent	$(FR \times FS)/2$	$(FS \times IP)/2$	$(IP \times IR)/2$	$(IR \times FR)/2$	SAI
Prague	1.95	2.30	4.97	1.88	2.25	4.85	4.67	2.16	13.93
Jihomoravský kraj	0.71	0.88	6.97	2.21	0.31	2.47	7.71	0.97	11.46
Středočeský kraj	0.76	0.45	7.73	2.67	0.17	2.93	10.31	0.59	14.01
Liberecký kraj	1.30	0.71	8.07	2.66	0.46	5.23	10.72	0.95	17.37
Zlínský kraj	0.56	0.56	8.27	2.54	0.16	2.33	10.51	0.71	13.71
Královéhradecký kraj	0.85	0.47	8.57	2.95	0.20	3.64	12.62	0.70	17.16
Jihočeský kraj	1.10	0.58	8.73	2.81	0.32	4.82	12.25	0.82	18.21
Plzeňský kraj	0.79	0.55	9.48	2.78	0.22	3.76	13.18	0.76	17.91
Karlovarský kraj	2.75	0.86	8.73	3.01	1.18	11.98	13.13	1.29	27.58
Pardubický kraj	0.73	0.61	9.35	2.76	0.22	3.40	12.90	0.84	17.36
Kraj Vysočina	0.53	0.33	9.64	2.85	0.09	2.58	13.76	0.47	16.89
Olomoucký kraj	0.74	0.63	9.58	2.81	0.23	3.52	13.47	0.89	18.12
Moravskoslezský kraj	0.76	1.11	11.05	3.11	0.43	4.22	17.16	1.73	23.54
Ústecký kraj	1.68	1.12	15.89	3.20	0.95	13.37	25.44	1.80	41.56

Source: (CZSO, 2023; Tržní ceny, 2024), own calculations.

Table 10.3. Housing market regional data in Poland (April 2024)

Voivodeship	Prices/m² (thousand PLN)	Sale ads (number)	Month rent/m² (PLN)	Rent ads (number)	Average monthly gross salary in corporate sector (PLN)	Population in 2023
Mazowieckie	14.8	10 317	84.7	8 124	8 943	5 510 612
Śląskie	6.8	7 247	41.3	1 382	7 714	4 346 702
Wielkopolskie	12.2	3 676	47.6	2 158	7 078	3 493 577
Małopolskie	16.0	5 242	62.2	3 351	7 943	3 429 014
Dolnośląskie	11.7	8 799	58.9	3 414	8 140	2 888 033
Łódzkie	9.3	3 080	43.9	1 389	7 294	2 378 483
Pomorskie	11.7	7 018	52.9	1 727	7 854	2 358 307
Lubelskie	9.2	1 912	44.2	500	6 835	2 024 637
Podkarpackie	9.0	1 242	10.9	546	6 568	2 079 098
Kujawsko-pomorskie	8.4	4 072	40.2	1 064	6 785	2 006 876
Zachodniopomorskie	8.3	5 280	54.5	1 120	7 295	1 640 622
Warmińsko-mazurskie	9.5	1 568	39.3	221	6 699	1 366 430
Świętokrzyskie	8.0	778	37.6	167	6 649	1 178 164
Podlaskie	8.4	1 340	35.5	368	6 504	1 143 355
Lubuskie	7.0	1 498	40.2	339	7 143	979 976
Opolskie	6.6	1 024	37.8	196	7 168	942 441

Source: (GUS, 2023; Otodom, 2024), own calculations.

The lowest flat prices are observed in the Opolskie region (6,600 PLN/m²). The lowest number of flats for sale is in the Świętokrzyskie region (778). The lowest number of flats for rent is also reported in the same province (167). Meanwhile, the lowest rental price was reported in the Podkarpackie region (10.9 PLN/m²/month). The lowest average annual salary was found in the Świętokrzyskie region (6,649 PLN).

Table 10.4 presents the fundamental housing indicators in Poland, including the resulting SAI values for the regions across the country. The data reflects the lowest housing affordability in the Małopolskie region, with an SAI value of 11.9. Conversely, the Podkarpackie region exhibits the highest SAI value, indicating the highest housing affordability there (SAI = 43.2). This result stems probably from the fact that housing costs the Małopolskie region, especially in Cracov and the Tatra zone, are the highest. This region is very attractive for tourists, for students and workers, which stimulates prices. Prices of housing in the Podkarpackie region are not the lowest, but wages are almost the lowest.

Table 10.4. Affordability index SAI in the Polish regions (April 2024)

Region	Flats for sale/ 1000 inh.	Flats for rent/ 1000 inh.	Income/ price	Income/ Rent	$(FR \times FS) / 2$	$(FS \times IP) / 2$	$(IP \times IR) / 2$	$(IR \times FR) / 2$	SAI
Mazowieckie	1.87	1.47	7.27	1.58	1.38	6.81	5.73	1.16	15.07
Śląskie	1.67	0.32	13.62	2.79	0.27	11.36	19.00	0.44	31.07
Wielkopolskie	1.05	0.62	6.95	2.22	0.32	3.66	7.72	0.69	12.38
Małopolskie	1.53	0.98	5.95	1.91	0.75	4.55	5.67	0.93	11.90
Dolnośląskie	3.05	1.18	8.33	2.06	1.80	12.69	8.60	1.22	24.30
Łódzkie	1.29	0.58	9.42	2.48	0.38	6.10	11.68	0.72	18.89
Pomorskie	2.98	0.73	8.02	2.21	1.09	11.94	8.89	0.81	22.73
Lubelskie	0.94	0.25	8.87	2.31	0.12	4.19	10.24	0.29	14.83
Podkarpackie	0.60	0.26	8.75	8.99	0.08	2.61	39.33	1.18	43.20
Kujawsko-pomorskie	2.03	0.53	9.73	2.52	0.54	9.88	12.26	0.67	23.34
Zachodnio-pomorskie	3.22	0.68	10.53	2.00	1.10	16.95	10.51	0.68	29.24
Warmińsko-mazurskie	1.15	0.16	8.48	2.54	0.09	4.86	10.79	0.21	15.95
Świętokrzyskie	0.66	0.14	9.95	2.64	0.05	3.28	13.12	0.19	16.64
Podlaskie	1.17	0.32	9.29	2.73	0.19	5.45	12.70	0.44	18.78
Lubuskie	1.53	0.35	12.22	2.65	0.26	9.34	16.21	0.46	26.27
Opolskie	1.09	0.21	13.09	2.83	0.11	7.11	18.54	0.29	26.06

Source: (Otodom, 2024; GUS, 2023), own calculations.

Hungary's administrative division is organized into three levels. The territory of Hungary is divided into 7 NUTS 2 regions⁴ and 19 counties (known as *megyék* in Hungarian) plus Budapest at NUTS 3 level. These counties are further subdivided into districts (*járások*), and within these districts are municipalities or towns (*települések*). Currently, Hungary consists of 174 districts, and approximately 2,900 municipalities. However, self-government exists only at county and district level. Districts are used as the local level central government organisations like government offices, and regions serve purely as European planning units. A summary of Hungarian regional data is available in Tab. 10.5. In the following tables, because of reasons of comparability the authors used the traditional division in NUTS 2 regions (7 units):

Table 10.5. Housing market regional data in Hungary (April 2024)

Region	Prices/m ² (mln HUF)	Sale ads (number)	Month rent/m ² (thousand HUF)	Rental ads (number)	Average year gross salary (HUF)	Population (2022)
Közép-Magyarország	1.139	32 069	4.514	8601	3 618 257	2 963 205
Közép-Dunántúl	0.890	4 546	3.448	607	3 314 380	1 040 689
Nyugat-Dunántúl	0.689	5 464	3.112	462	3 065 138	984 221
Dél-Dunántúl	1.036	6 792	3.094	578	2 699 298	844 780
Észak-Magyarország	0.741	3 653	2.742	519	2 630 100	1 079 537
Észak-Alföld	0.802	4 317	3.417	795	2 666 423	1 391 476
Dél-Alföld	0.642	3 353	3.047	511	2 744 467	1 189 224

Source: (Realestate, 2024; KSH, 2022), own calculations.

Comparing the Hungarian regional data, the highest flat prices are found in the Central Hungary (Közép-Magyarország) region (1.139 mln HUF/m²), rental prices are also notably higher in that region (4,514 HUF/m²/month), with the highest number of flats available for sale (32,069) and to rent (8,601). Additionally, the region has the highest average year gross salary (3,618 thousand HUF), being the most developed area of the country, with a significantly more intensive economy. Not only wages and prices are higher, but also the number of ads regarding sale or rental of housing are is than the rest of the country in total.

The lowest flat prices are observed in the South-Great Plains (Dél-Alföld) region (0.642 mln HUF/m²), as well as the lowest number of flats for sale (3,353). The lowest number of flats for rent is reported in West-Transdanubia (Nyugat-Dunántúl, 462), and the lowest rental prices in the Northern Hungary (Észak-Magyarország) region (2,742 HUF/m²/month); the lowest average year gross salary was also reported there (2,630 thousand HUF).

⁴ From 1 2018, the number of NUTS 2 region in Hungary is 8 while Central Hungary (Közép-Magyarország) was divided into Budapest and Pest.

Table 10.6. Affordability index SAI in the Hungarian regions (April 2024)

Region	Flats for sale/ 1000 inh.	Flats for rent/ 1000 inh.	Income/ price	Income/ rent	$(FR \times FS)/2$	$(FS \times IP)/2$	$(IP \times IR)/2$	$(IR \times FR)/2$	SAI
Közép- -Magyarország	10.82	2.90	3.18	1.00	15.71	17.20	1.58	1.45	35.93
Közép- -Dunántúl	4.37	0.58	3.72	1.20	1.27	8.13	2.23	0.35	11.98
Nyugat- -Dunántúl	5.55	0.47	4.45	1.23	1.30	12.35	2.72	0.29	16.66
Dél-Dunántúl	8.04	0.68	2.61	1.09	2.75	10.47	1.41	0.37	15.01
Észak- -Magyarország	3.38	0.48	3.55	1.19	0.81	6.00	2.12	0.29	9.22
Észak-Alföld	3.10	0.57	3.33	0.97	0.89	5.16	1.61	0.28	7.94
Dél-Alföld	2.82	0.43	4.27	1.12	0.61	6.03	2.39	0.24	9.27

Source: (Realestate, 2024; Központi Statisztikai Hivatal [KSH], 2022), own calculations.

Table 10.6 summarised the basic housing indicators in Hungary. The lowest housing affordability in Hungary was shown in the North-Great Plains region, with a SAI value of 7.94. The highest SAI value was recorded in the Central Hungary region, indicating the highest housing affordability (SAI = 35.93), which is two times higher than any other in the country. The data also shows a country divided in three parts: (1) Central Hungary with the better affordability value, (2) the western regions, specially West and South Transdanubia at an intermediate level, and (3) the eastern part of the country with the lowest SAI indicators value.

10.6. Conclusions

As mentioned at the very beginning of this chapter, Visegrád countries have undergone huge economic transformation in the last 30 years. This also concerned the housing market – from state regulated to a highly self-regulated one. This means that housing became a market good, whose accessibility is determined mainly by the individual financial capacity of a household, which strongly differentiates market participants and determines housing affordability. Thus the aim of this chapter was to compare Czech, Polish and Hungarian regions according to the current housing market situation. The purpose of the research was to determine whether similar trends were observed across the regions of the three Visegrád countries. To do this, selected housing indicators and Housing Affordability Index (SAI) were calculated.

According to the survey, it appears that the lowest housing affordability according to the SAI index in 2024 was found in Hungarian regions (North Great Plains, Northern Hungary and South Great Plains), followed by the Czech region of South Moravian Region and the Polish region of Małopolskie, whereas the greatest affordability of housing was found in other Polish regions, and further in the Czech region of the Ústí Region and in the Central Hungary region. These results prove that states and municipalities play an important role in determining housing affordability and that their policies can modify the housing market situation.

Acknowledgements. This chapter was created with the financial support of project No. CZ.11.3.119/0.0/0.0/16_013/0003093 'Increasing the knowledge and skills of university students in the field of implementation of public policies in Czechia and Poland and improving their applicability in the labour market' (Programme Interreg V-A Czech Republic-Poland).

References

- Anacker, K. B. (2019). Introduction: Housing Affordability and Affordable Housing. *International Journal of Housing Policy*, 19(1), 1-16. <https://doi.org/10.1080/19491247.2018.1560544>
- Bieri, D. S. (2014). Housing Affordability. In A. C. Michalos (Ed.), *Encyclopedia of Quality of Life and Well-Being Research*. Springer.
- Czischke, D. & van Bortel, G. (2018). An Exploration of Concepts and Policies on 'Affordable Housing' in England, Italy, Poland and The Netherlands. *Journal of Housing and the Built Environment*, 38, 283-303. <https://doi.org/10.1007/s10901-018-9598-1>
- Český Statistický Úřad [CZSO]. (2023). <https://www.czso.cz/>
- Deloitte. (2021). *Property Index 2021. How Europeans Live and What It Costs Them*. <https://www2.deloitte.com/ce/en/pages/real-estate/articles/property-index-2021.html>
- Eurostat. (2020). *Living Conditions in Europe – Housing*. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Living_conditions_in_Europe_-_housing
- Eurostat. (2022). *Out Now: Housing in Europe – 2022 Interactive Edition*. <https://ec.europa.eu/eurostat/web/products-eurostat-news/w/wdn-20221215-1>
- Gerrig, R. & Zimbardo, P. (2001). *Psychology and Life*. Allyn & Bacon.
- Główny Urząd Statystyczny [GUS]. (2023). <https://stat.gov.pl/>
- Kleshcheva, O. (2021). *Determinants of Housing Affordability in the Region*. E3S Web Conf., vol. 274, article 05005, <https://doi.org/10.1051/e3sconf/202127405005>
- Központi Statisztikai Hivatal [KSH]. (2022). <https://www.ksh.hu/?lang=hu>
- Központi Statisztikai Hivatal [KSH]. (2024). <https://www.ksh.hu>
- Ministerstwo Rozwoju i Technologii. (2024). Podstawowe informacje o mieszkalnictwie w Polsce. <https://www.gov.pl/web/rozwoj-technologie/podstawowe-informacje-o-mieszkalnictwie-w-polsce>
- National Association of Realtors. (2024). *Housing Affordability Index*. <https://www.nar.realtor/research-and-statistics/housing-statistics/housing-affordability-index>
- OECD. (2021). *Housing affordability in Cities in the Czech Republic*. OECD Urban Studies. <https://doi.org/10.1787/bcddcf4a-en>
- Otodom. (2024). www.otodom.pl

Realestate. (2024). www.realestate.hu

Republic. [online]. [cit.2024-05-02]. Available from <https://read.oecd.org/10.1787/bcddcf4a-en>.

Tržní ceny. (2024). www.trzniceny.cz

Urban Reform Insitute [URI]. (2022). *Demographia International Housing Affordability*. <https://urbanreform-institute.org/2022/03/demographia-international-housing-affordability-2022-edition-released/>

W Polsce brakuje dostępnych cenowo mieszkań. Eksperti mówią już o kryzysie. (2024). Portal Samorządowy. <https://www.portalsamorzadowy.pl/gospodarka-komunalna/w-polsce-brakuje-dostepnych-cenowo-mieszkam-eksperci-mowia-juz-o-kryzysie,540440.html>