

ANALYSIS OF FINANCIAL SITUATION OF SLOVAKIA AND COMPARISON WITH COUNTRIES V4

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Abstract

The aim of this paper is to analyse the development of selected financial indicators of the Slovak Republic in comparison with the other Visegrad Group countries (Czech Republic, Hungary, Poland) over the period 1995–2024. The analysed indicators include household saving rate, total financial assets, household indebtedness, house price index, and the share of people at risk of poverty or social exclusion. The analysis is based on publicly available data from Eurostat and the European Central Bank and applies basic time series methods such as growth rates, trend models, and exponential smoothing. The results show a gradual slowdown in Slovakia's economic growth, a low and volatile household saving rate, and the lowest average growth of financial assets among the V4 countries. Household indebtedness in Slovakia increased more strongly than in Hungary, while house prices grew more significantly in the Czech Republic and Hungary. The most critical development was observed in the share of people at risk of poverty, where Slovakia was the only country to record a long-term increase. The findings provide a comprehensive view of Slovakia's financial situation in a regional context.

Key words: Financial indicators, Slovakia, Visegrad Group, Time series, Regression, Exponential Smoothing

JEL Code: G51, D31, E21

Introduction

Since the 1990s, the Slovak Republic, as part of Central Europe, has undergone significant economic and social changes. Within its regional framework, it belongs to the Visegrad Group (V4) together with the Czech Republic, Poland, and Hungary. These countries share historical experience and geographical proximity, as well as common challenges related to economic development, public finance stability, and the living standards of their populations. Comparing financial and economic indicators offers an opportunity to better understand Slovakia's position in the region and to assess the extent to which the country keeps pace with its neighbours.

The financial situation of households is a key factor in economic stability and social cohesion. Indicators such as household saving rates, indebtedness, house price developments, total financial assets, and the share of the population at risk of poverty or social exclusion reflect not only the country's economic performance but also the quality of life of its residents. In recent years, these indicators have been affected by multiple crises – the global financial crisis of 2008, the COVID-19 pandemic, the energy crisis, and rising inflation.

Previous studies have often focused on individual aspects of financial stability – for example, housing price developments, household indebtedness, or the measurement of social exclusion. However, fewer studies provide a comprehensive analysis of multiple financial and socio-economic indicators in the context of the V4 countries, and even fewer cover the long-term period from the mid-1990s to the present.

The aim of this paper is therefore to analyse the financial situation of Slovak households in comparison with the Czech Republic, Hungary, and Poland over the period 1995–2024. The analysis is based on publicly available data from Eurostat and the European Central Bank and employs time series methods, growth rates, and trend models. This approach makes it possible to identify both long-term trends and short-term fluctuations, providing a comprehensive view of Slovakia's position within the region.

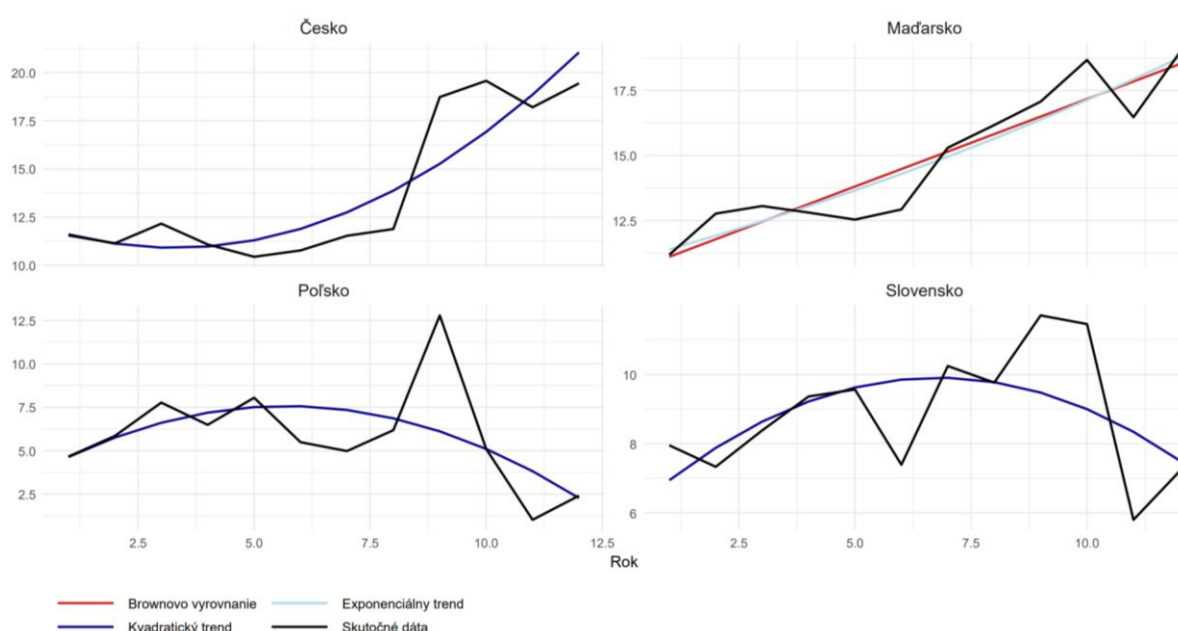
1 Objectives and Methodology

The main objective of this paper is to assess the financial situation of Slovak households over the long term and to compare it with developments in the other Visegrad Group countries, namely the Czech Republic, Hungary, and Poland. The analysis covers the period from 1995 to 2024 and focuses on identifying key differences and common trends that affect the economic stability and living standards of the population in the Central European region. The assessment is based on indicators such as household saving rate, total value of financial assets, level of household indebtedness, house price index, and the share of people at risk of poverty or social exclusion. The data were obtained from publicly available databases of Eurostat, the European Central Bank, and the Statistical Office of the Slovak Republic, and processed in both annual and quarterly frequency. Methodologically, the analysis applies descriptive statistics and basic time series analysis methods, specifically the calculation of growth rates in the form of chain and base indices, determination of the average growth rate, estimation of trend models, and comparison of developments between countries, as well as inferential methods for hypothesis testing, autocorrelation, and seasonality.

2 Findings and Results

The gross household saving rate in the V4 countries during the period 2015–2023 exhibited differing dynamics. Slovakia recorded the lowest average relative increase of only 2.18%, with a highly volatile trend and notable declines in certain years (e.g., 2017 and 2021). Poland achieved the highest relative increase (13.91%) yet also showed the greatest volatility and a negative average absolute change (−0.20). The Czech Republic and Hungary demonstrated a more stable and consistent growth pattern, with average relative increases of 5.91% (CZ) and 5.18% (HU), respectively.

Fig. 1: The best model for savings rates in V4 countries in the period 2012–2023

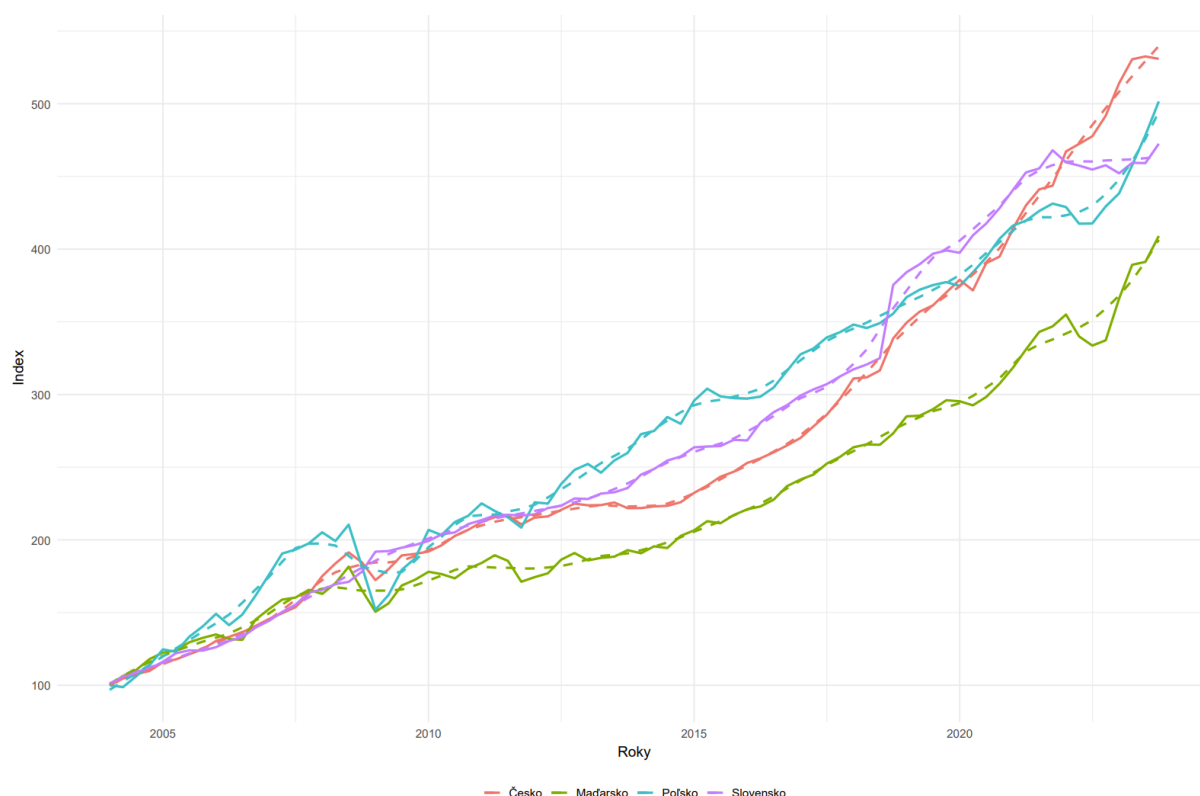


Source: Author's calculations based on data from Eurostat and ECB.

A comparison of models showed that for most countries (Slovakia, the Czech Republic, Poland), the quadratic trend provided the best fit, whereas in Hungary, Brown's double exponential smoothing yielded more accurate results. In Slovakia, however, even the best model (quadratic trend, $R^2_{adj} = 14.51\%$) indicated low predictability and high variability in savings. The Durbin–Watson test confirmed the absence of autocorrelation in the residuals for the quadratic trend, which is positive in terms of estimate reliability (Hindls et al., 2018). As shown in Fig. 1, these model fits illustrate the differences in trend accuracy and variability across the V4 countries. These findings suggest that while the Czech Republic and Hungary maintained a stable growth tendency in household savings, Slovakia and Poland were more

sensitive to economic and social fluctuations, which may be related to differences in disposable income, financial literacy, or household behaviour (Eurostat, 2024e; European Commission, 2023).

Fig. 2: Normalized trends in total financial assets of V4 countries (2004–2023)



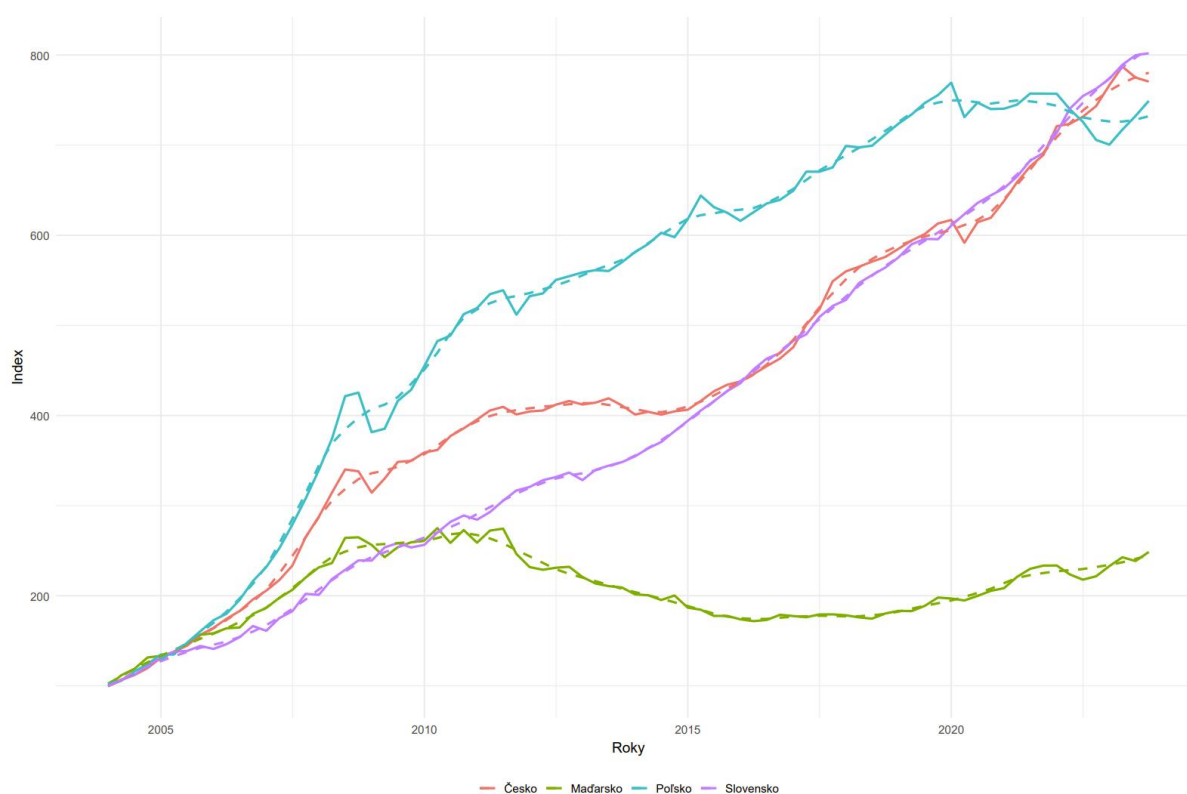
Source: Author's calculations based on data from Eurostat and ECB.

The total financial assets of households in the V4 countries between 2004 and 2023 grew at different rates and displayed varying dynamics. As illustrated in Figure 2, Slovakia recorded a stable and even increase in financial assets throughout the observed period, without major fluctuations, with only a slight slowdown visible during the global financial crisis in 2009 and the COVID-19 pandemic in 2020. Hungary experienced the slowest growth and lagged behind the Czech Republic for most of the period, and significantly behind Poland. The Czech Republic showed steady growth, which accelerated in recent years (Česká národní banka, 2023). The most pronounced growth was observed in Poland, particularly after 2015, with the pace of asset accumulation increasing further after 2020, indicating a strong investment and income potential of households in this country. An F-test confirmed the presence of seasonality in all V4 countries, meaning that the development of financial assets is influenced by regularly recurring quarterly fluctuations. Multiple regression for Slovakia estimated the lowest initial asset level

(€16,889.89 million) and the slowest average quarterly growth (€1,090.84 million) among all countries. Seasonal effects were particularly evident in declines during the third quarter (−€354.24 million) and increases in the fourth quarter (+€242.47 million), which may be linked to household consumption and investment cycles toward the end of the year. The Czech Republic and Poland achieved significantly higher average increases, reflecting their greater wealth creation capacity.

Differences between countries may be attributed to several factors, including varying levels of disposable income, financial literacy, investment behaviour, and access to financial products and markets (European Commission, 2023; Eurostat, 2024f). From the perspective of long-term financial stability, these findings suggest that Slovakia lags behind in household financial asset accumulation, which may limit its ability to respond to economic shocks and take advantage of investment opportunities compared to the more dynamically growing V4 economies.

Fig. 3: Normalized trends in household indebtedness in V4 countries (2004–2023)



Source: Author's calculations based on data from Eurostat and ECB.

Figure 3. presents the normalized development of household indebtedness in the V4 countries between 2004 and 2023. The values are indexed so that the first observed quarter has a value of 100, allowing a comparison of the relative growth rates of indebtedness between

countries regardless of their initial debt levels. In addition to the data itself, the chart also includes a LOESS smoothed line, which visually highlights the long-term trend and eliminates short-term fluctuations. The graph shows that Slovakia and the Czech Republic recorded the highest relative growth in household indebtedness among the V4 countries. Slovakia experienced continuous growth, and by the end of the observed period, it surpassed both the Czech Republic and Poland. Poland, which initially grew faster than the other countries, has seen a stabilization of growth in recent years. In contrast, Hungary stands out with its development — after initial growth up to 2008, it experienced a decline and long-term stagnation, possibly as a result of economic measures (Verner, 2022). Overall, the chart points to a significant increase in household indebtedness in the Slovak Republic, which is important for assessing the financial stability of households and their ability to cope with potential future economic challenges (National Bank of Slovakia, 2021).

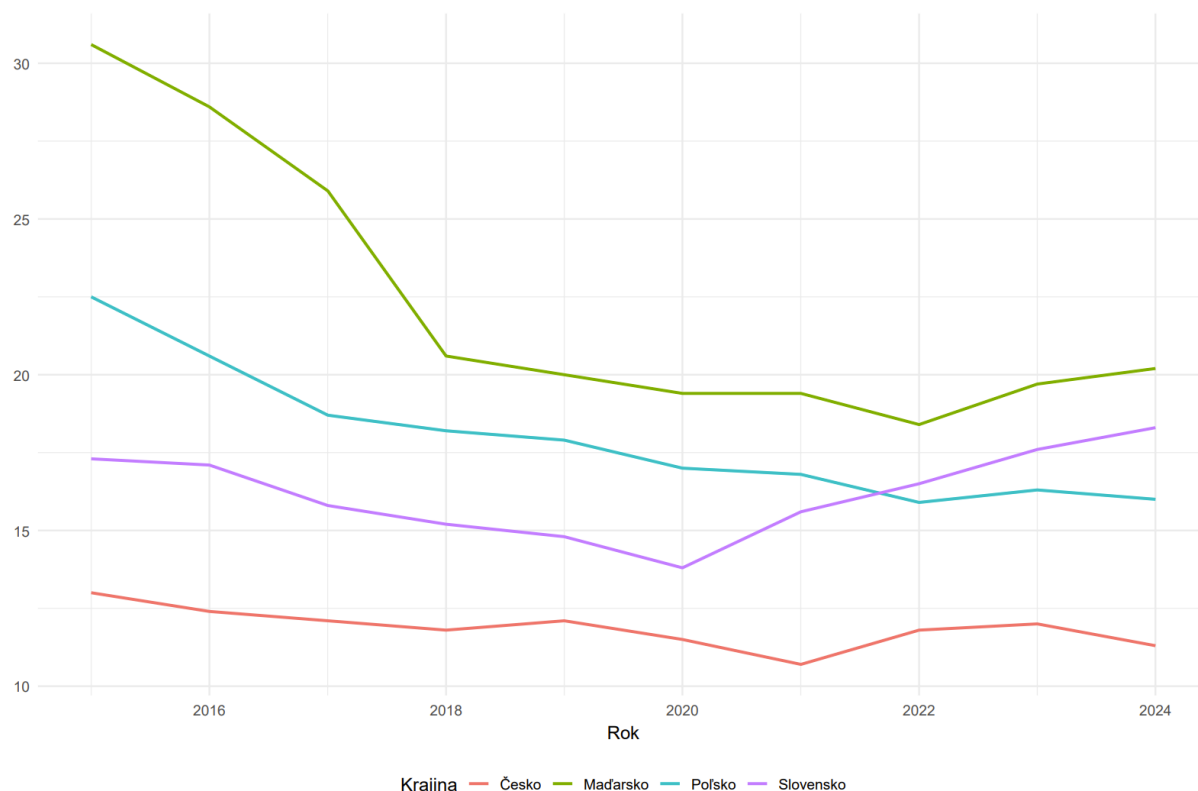
Tab. 1: Dynamics of people at risk of poverty, period 2015–2024

Country	Avg. Absolute Change	Avg. Growth Coefficient	Avg. Relative Change (%)	Base Index
Slovakia	0.11	1.0078	0.78	1.06
Czech Republic	-0.19	0.9867	-1.33	0.87
Poland	-1.16	0.9589	-4.11	0.66
Hungary	-0.72	0.9644	-3.56	0.71

Source: Author's calculations based on data from Eurostat and ECB.

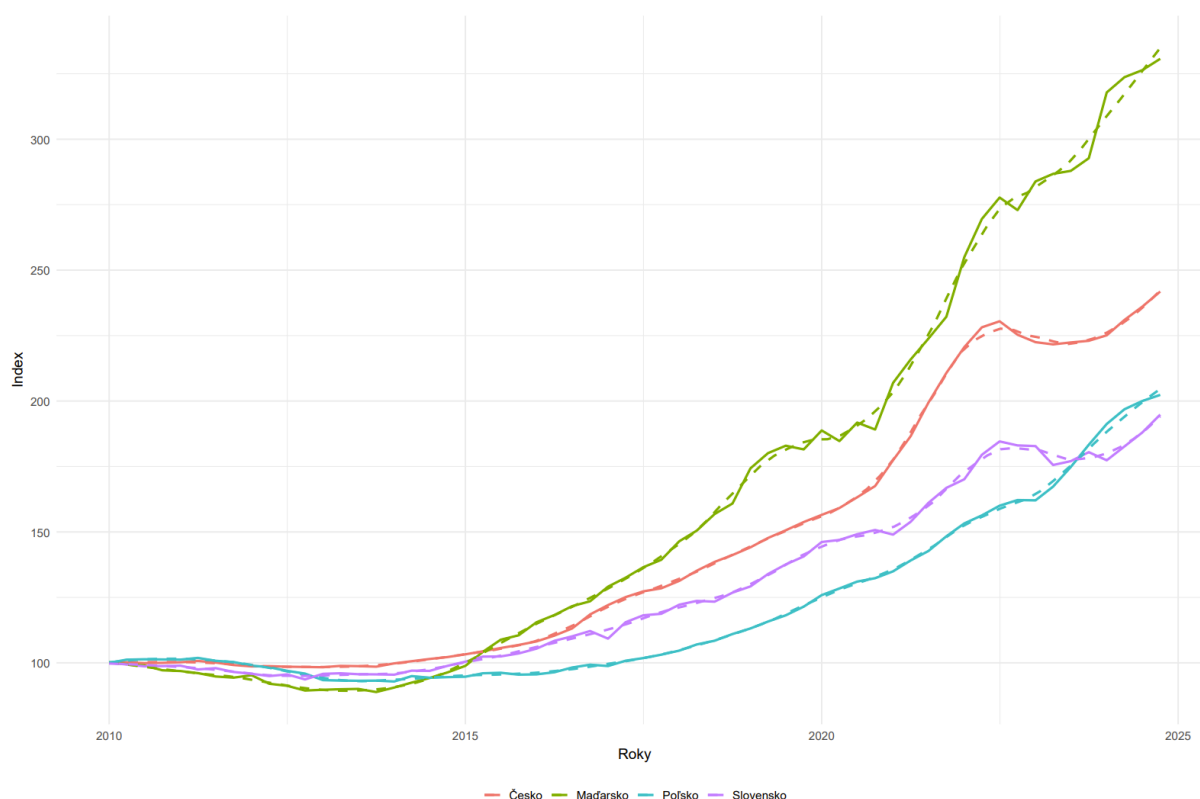
As shown in Table 1, Slovakia shows a fluctuating trend in the dynamics of the number of people at risk of poverty or social exclusion, with an average annual increase of 0.11% (see Table 3.25). It is the only country with a positive average growth rate, contrasting with the other V4 countries, which generally recorded a decline in the number of at-risk individuals. The Czech Republic demonstrates a more stable trend, with an average annual decrease of 0.19% and a base index of 0.87, representing a 13% reduction compared to 2015. Hungary achieved the most significant improvement, with an average relative decrease of 4.11% and a base index falling to 0.66 — a 34% reduction, the largest among the V4 (see Table 3.25). Poland recorded a systematic decline, with an average relative change of –3.56%. Overall, Slovakia remains the only country in the group to have experienced an increase in the number of at-risk individuals during the period, indicating higher sensitivity to external shocks and the limited effectiveness of social policies (Statistical Office of the Slovak Republic, 2024). In contrast, Hungary and Poland achieved substantial reductions.

Fig. 4: Trends of people at risk of poverty or social exclusion in V4 countries (2015–2024)



Source: Author's calculations based on data from Eurostat and ECB.

As shown in Figure 4, Poland and Hungary show a steady decline, the Czech Republic maintains relatively stable low values, while Slovakia performs the worst, with the curve rising again in 2020. The sharp decline in Hungary up to 2020 is followed by a mild increase, but it still remains below 2015 levels. The Czech Republic consistently reports the lowest figures with minimal fluctuations. The figure confirms that Slovakia is the only country where values have risen again in recent years, exceeding those recorded at the starting point.

Fig. 5: Trends in the house prices index in V4 countries (2010–2024)

Source: Author's calculations based on data from Eurostat and ECB.

As shown in Figure 5, the development of the house price index in the Visegrad Group countries from 2010 to 2024 is based on quarterly data with the reference year 2015 = 100. Since 2014, property prices have increased in all V4 countries, though the pace of growth varies significantly. Hungary recorded the sharpest rise, with the 2024 index exceeding 300, indicating more than a threefold price increase compared to the reference year. The Czech Republic also experienced strong growth, while Slovakia and Poland saw more gradual increases, with Slovakia's values showing greater fluctuation.

Tab. 2: F-test values for seasonality and critical value – house price index

Country	F-test for seasonality	Critical value $F_{0.95}$ (3,42)	Comparison
Slovakia	8.12	2.83	Reject H_0
Czech Republic	8.86	2.83	Reject H_0
Poland	10.67	2.83	Reject H_0
Hungary	10.16	2.83	Reject H_0

Source: Author's calculations based on data from Eurostat and ECB.

As shown in Table 2, the presence of seasonal effects in the house price index was tested in each V4 country using the F-test for seasonality. Results (Table 3.21) were compared to the critical value $F_{0.95}(3,42) = 2.83$. In all four countries — Slovakia ($F = 8.12$), the Czech Republic ($F = 8.86$), Poland ($F = 10.67$), and Hungary ($F = 10.16$) — the calculated F-value exceeded the critical threshold, allowing rejection of the null hypothesis of no seasonality. This confirms that a statistically significant seasonal component influences house price development in all V4 countries.

Conclusion

The analysis of Slovakia's financial situation in the context of the Visegrad Group countries over the period 1995–2024 shows that the country initially enjoyed a relatively favourable starting position, often ranking second after the Czech Republic. Over time, however, this advantage diminished due to stagnation or deterioration in key indicators such as household saving rates, total financial assets, household indebtedness, and the share of population at risk of poverty or social exclusion.

Slovakia recorded the lowest average growth in household savings among the V4, combined with high volatility, and the slowest accumulation of financial assets, limiting its resilience to economic shocks. At the same time, household indebtedness grew faster than in most V4 countries, while house price growth remained more moderate but showed marked seasonal patterns. The most alarming result was the long-term increase in the proportion of people at risk of poverty — a trend unique to Slovakia in the regional context.

In none of the analysed indicators does Slovakia significantly outperform its V4 peers. The only relatively favourable finding is that it does not consistently rank last in the region, but this cannot be considered satisfactory. The results suggest that the current financial situation does not show clear stabilising tendencies and may further deteriorate, especially in the absence of effective reforms and under uncertain political direction. In the broader Central European context, Slovakia is gradually losing the advantage it once held in several areas.

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