

# **Macroeconomic Dynamics of Slovenia and Comparable Central European EU Member States in the Period before Coronavirus Pandemic**

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**KLJUČNE BESEDE:** makroekonomska gibanja, regionalna integracija, finančna kriza 2008, Slovenija, srednjeevropske države članice EU

**POVZETEK** – Članek obravnava makroekonomska gibanja Slovenije in štirih drugih primerljivih srednjeevropskih držav članic EU v obdobju dvajsetih let pred pandemijo koronavirusa. Za natančnejšo proučitev razlik med državami smo analizirali štiri obdobja: 2000–2004, 2004–2007, 2008–2014 in 2017–2019. Proučevali smo kazalnike bruto domačega proizvoda, bruto investicij, nezaposlenosti, plač in izvoza. Ugotovitve raziskave kažejo, da se je položaj Slovenije slabšal in stagniral vse do nekaj let pred globalno zdravstveno krizo, medtem ko se je položaj večine drugih držav izboljševal. Ključno sporočilo raziskave je, da Slovenija pred in v letih po včlanitvi v EU ni izkoristila vseh svojih ugodnih gospodarskih in političnih temeljev za rast in razvoj. Proces približevanja Slovenije povprečju razvitosti držav članic EU se je do nekaj let pred obdobjem pandemije znatno upočasnili, medtem ko se je pri nekaterih primerjanih srednjeevropskih državah članicah EU dogajalo ravno nasprotno. Raziskava nakazuje potrebo po proučitvi dejavnikov navedenega položaja Slovenije v opazovanem obdobju s ciljem preprečevanja stagnacije in spodbujanja razvoja.

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**KEYWORDS:** macroeconomic trends, regional integration, 2008 financial crisis, Slovenia, Central European EU member states

**ABSTRACT** – The article discusses the macroeconomic dynamics of Slovenia and four other comparable Central European EU member states in the period of twenty years before the coronavirus pandemic. To examine the differences between countries in more detail, we analyzed four periods: 2000–2004, 2004–2007, 2008–2014 and 2017–2019. We studied the indicators of gross domestic product, gross investment, unemployment, wages, and exports. The findings of the research show that Slovenia's position deteriorated and stagnated until a few years before the global health crisis, while the position of most other countries improved. The key message of the research is that Slovenia did not use all its favorable economic and political foundations for growth and development before and in the years after joining the EU. Slovenia's process of approaching the average of the EU member states slowed down considerably until a few years before the pandemic, while the opposite happened in some of the compared Central European EU member states. The research indicates the need to study the factors of the above mentioned position of Slovenia in the observed period with the aim of preventing stagnation and promoting development.

## **1 Introduction**

In open market economies, the values of macroeconomic indicators are under the influence of economic policy, as well as the national, regional, and global socioeconomic and political context (Abramovitz, 1986; Sokoloff & Engerman, 2000). A well-

formulated concept of the country's economic policy and its measures must maintain macroeconomic stability. Economic policy goals, such as gross domestic product (GDP) growth, unemployment, gross investment, wages and export dynamics, represent the success or failure of an economic policy. In many cases, the economic policy's direct and indirect effects are unknown in advance, or the negative indirect effects outweigh the positive direct effects. Important factors are also the time dimensions of the decision-making process and the adoption and enforcement of measures. By determining monetary and fiscal instruments, governments strive to maximize the social well-being represented by economic growth and price stability (Ahtik & Mencinger, 2012). Apart from economic policy, the national, regional, and global economic and socio-political context is essential, including global political and socioeconomic stability, business regulation, the rule of law, public trust in political institutions, corporate governance, media independence, etc.

In the last thirty years, Central European countries have experienced various types of transitions from a centrally planned to a market economy. Restructuring has led to different results in these economies. Czechia, Slovakia, Poland and Hungary have exhibited several similarities with Slovenia in their socioeconomic environments and ambitions to find a position in the open European market. However, in some of these countries that had lower GDP per capita than Slovenia when they joined the EU in 2004, economic development in the following years was much more evident than in Slovenia (Ovin et al., 2006; Korez Vide 2007, 2015). Also, Slovenia evidenced a longer period of recovery after the 2008 financial crisis. In the multiannual period following the 2008 financial crisis, most Central European EU member states managed to return their economies to the pre-crisis levels. Research comparisons and discussions about Slovenia's position among comparable countries in the period after gaining independence and starting the political and economic transition in the beginning of 1990s are reasonable.

The purpose of this paper is to comparatively analyze macroeconomic dynamics of Slovenia and selected Central European EU member states in the 20 years before the coronavirus pandemic. We will pay particular attention to the effects of countries' accession to the EU and the consequences of the waves of the 2008 financial crisis on macroeconomic trends in Slovenia and the other observed countries. We will determine according to which macroeconomic indicators Slovenia fell behind the observed countries.

The paper is structured as follows: in the theoretical part, we examine the macroeconomic indicators analyzed in this research, the key effects of regional economic integration with emphasis on the EU, and the key data on the 2008 financial crisis and its impact on the EU. After setting forth the hypotheses and describing the methodology and data, we will perform the empirical analysis, followed by a discussion and conclusion.

## 2 Theoretical Background and Hypotheses' Development

### 2.1 Selected macroeconomic indicators

Gross domestic product (GDP), as the amount of goods and services produced over a period in an economy, is the most established measure of a country's productive capacity (Eurostat, 2017). A process that increases the extremes of productive capacity manifests itself as economic growth. With strong GDP growth, employment is likely to grow, and with declining GDP, employment is declining too. Over time, real GDP growth fluctuates in cycles, from periods of boom to periods of slow growth or recessions (Callen, 2020). It stems from an increase in the volume of available production factors or an increase in their efficiency. Analysis of the structure and elements of GDP growth is crucial in shaping a country's economic policy. The maximum amount that the economy can produce at stable prices is described as potential GDP. Theoretically, this can be called the level of GDP at full employment. Real GDP falls for a shorter period in a recession and does not differ much from the potential GDP. However, an extended period of decline and a larger difference between actual and potential GDP is characterized as a financial crisis or depression (Samuelson & Nordhaus, 2002).

Gross investment is defined as gross fixed capital formation, which consists of the investment of domestic producers in fixed assets in a selected period (Eurostat, 2017a). Fixed assets are tangible or intangible assets produced and used for more than one year. Investment can also be defined as an increase in the stock of productive assets, such as capital goods, i.e., equipment, buildings, and stocks. The importance of gross investment is reflected in its impact on aggregate demand, which affects GDP and unemployment (Samuelson & Nordhaus, 2002). Investment leads to capital accumulation and an increase in potential GDP, and stimulates economic growth in the long run.

Unemployment rate is an essential indicator of the economies' performance and the difference between supply and demand for labor (Eurostat, 2018). Unemployment is the ratio between the number of unemployed and the number of active people. As GDP falls, the unemployment rate rises, while low unemployment levels can trigger inflation (Samuelson & Nordhaus, 2009). When the economy is growing, unemployment decreases, while cyclical unemployment increases during the economy's contraction.

Wages are an essential factor in the structure of labor supply and demand. They indirectly affect GDP and employment rates, as well as economic growth. They can be used to measure the economy's competitiveness, as usually higher wages also mean a higher standard of living. Wage growth is, among other things, affected by the increase in international trade and foreign direct investment. Like employment and unemployment, labor migration can also affect wages.

Exports increase the number of jobs, contribute to higher wages, and raise the population's living standards. When exports are higher, the difference is surplus; when exports are smaller, the difference is a deficit. International trade stimulates economic growth. Its intensity depends on the size of the country, what it produces, its self-suf-

iciency, and the level of employment (Samuelson & Nordhaus, 2009). Exports can be encouraged or restricted by trade policies and measures.

## *2.2 Key effects of regional economic integration*

Through regional economic integration, countries want to reduce and ultimately remove barriers to the free movement of goods, services, and factors of production. Regional integration attempts to reap the benefits of free trade and investment between countries in a region. It is easier to establish such a regime within a limited number of neighboring countries than within the world community. Free trade between economic integration's member states allows them to specialize in producing goods and services that they can deliver most efficiently (Hill, 2009). The potential effects of economic integration are higher production efficiency, resulting from a higher level of specialization and economies of scale, stronger negotiating position in international markets and the political arena, and access to technological progress by the other member states. All these effects improve the scope and quality of a country's factors of production (El-Agraa, 1997). Opening a country through entering an integration stimulates economic growth. Researchers (e. g., Baldwin & Wyplosz, 2015) agree that economic integration is good for GDP growth, although the exact correlation cannot be fully explained. The problem is that it is difficult to separate the effects of integration from many other factors that can affect economic growth.

### *2.2.1 European Union and its economic benefits*

Economic integration in the EU is based on four freedoms – the free movement of goods, services, people, and capital. Almost three decades after the completion of the single market, it has brought several macroeconomic benefits. Although imperfect, it has increased production and domestic demand (Mion & Ponattu, 2019). The opening of domestic economies has increased competition, reduced markups, and lowered prices. The EU's internal market has significantly increased the possibilities for economic expansion of the new members. Firms had the possibilities to enter mergers and acquisitions in a bigger market; with larger enterprises, economies of scale also became more extensive. Lower unit costs of production resulted in higher production and higher GDP per employee. Due to the better investment climate, investments in physical capital increased.

With the accession of new countries to the EU in 2004, their economies were expected to become more mature, integrate more deeply with the old members, and, over time, reduce their deficits. The long-term goals of Slovenia were to increase prosperity, economic growth and living standards, and move closer to Western European countries. Slovenia sought to increase international trade, attract foreign capital, and increase employment and economic growth. The EU has invested heavily in the new member states, which joined in 2004, to reach the EU average in terms of growth and income through its cohesion policy.

## 2.3 Financial crisis

A financial crisis is a situation in the economy when financial institutions or financial assets lose part of their value. Conditions considered financial crises include stock market crashes, bursts of financial bubbles, currency crises, debt, and banking crises (Kindleberger, 2005; Eichengreen, 2002). Some authors define the banking crisis as a period of financial turmoil, which causes the loss of most or all capital in the banking system (Bordo et al., 2001). The financial crisis can cause the insolvency of the banking system and trigger the decline in the value of assets, real estate, and securities. Bank debts cause the withdrawals of savings from banks out of fear that they will become insolvent. This situation results in a domino effect: it leads to a tremendous rush and even more significant withdrawals (Diamond, 2007). Crises can arise spontaneously because of crowd psychology or because of panic.

### 2.3.1 Emergence and development of the 2008 financial crisis

Real estate prices rose sharply in the years before the 2008 financial crisis due to high demand in the United States (US) and elsewhere in the world. High demand stemmed from the ample supply of »cheap« money available to banks for lending and low interest rates – these were the lowest in history (Krugman, 2012). Financial lobbies in US investment banks had become increasingly intense, and in 2004 they achieved that investment banks were exempted from the rules requiring them to have adequate financial reserves to cover potential losses. These changes allowed investment banks to assume risks that significantly exceeded their assets. In 2006, real estate prices peaked, followed by a decline. In 2007, real estate problems were transferred to banks. Mortgage receivables are said to have a low risk, as it does not happen often that people cannot repay their mortgages on time. Nevertheless, that happened, as real estate was worth up to 50% less than borrowers paid for it. Thus, the financial crisis we witnessed in 2008 began in the US with the collapse of the real estate market. Deeper causes are found in the deregulation of the financial system and the associated proliferation of financial derivatives outside the control of regulators (Krugman, 2012). After the fall in real estate prices, the disadvantages of subprime loans began to show. There was more and more real estate for which people were no longer able to pay the installments of the loans, and the banks found that it would not be possible to sell them without loss. The first holes appeared in the budgets; debt write-offs and the beginning of a financial meltdown. The value of loans thus increased, companies and individuals were unable to provide coverage, and no one wanted to finance their losses.

There was mistrust between the banks and the eternal question about the number of bad debts. Banks no longer lent money due to suspicion; the interbank market slowed down, and the credit market with it. Banks lent money only to the central bank and the state due to greater loan security. The decline in construction and household consumption, and the credit crunch plunged the US economy into recession at the end of 2007. The collapse of the investment bank Lehman Brothers in September 2008 was a turning point in the economy. Investment banks financed their investments with

short-term loans, and the guarantees were given by mortgages securities. Lenders became distrustful, and interest rates rose sharply (Krugman, 2012). Interest rates rose, leaving individuals and businesses without the credit essential for their consumption and operation. This was followed by a decline in economic growth, redundancies, and bankruptcies.

### *2.3.2 The 2008 financial crisis in the European Union*

The financial crisis in 2008 caused the worst economic downturn in EU history. It significantly increased public debt in most EU countries. Nevertheless, the euro protected the most vulnerable economies from devaluation risks faced by speculator attacks. The causes of the crisis varied across European countries. Some more indebted EU member states with increased budget deficits were particularly affected at the end of 2009. These had enormous consequences for economic growth, investment, employment, and fiscal position. In 2010, EU member states set up a financial stabilization mechanism for the euro area. Additionally, the member states and the EU institutions introduced specific provisions that strengthened EU economic governance. Responsible budget management and mutual financial assistance was a strategy by which the EU responded to global financial and economic change (Fontaine, 2010).

A moderate recovery happened in 2014, but the risk of deflation or secular stagnation remained high. The EU economy did not return to the pre-crisis position until 2017 (Szczepansky & Claros, 2019). The EU responded to the crisis with restrictions that have paved the way for the euro area banking union (Krugman et al., 2018). In the first steps in the fight against the recession, the euro system lowered key interest rates and ensured unlimited bank liquidity. The crisis has also forced the euro area to make the criteria for joining the monetary union more stringent and consistent in the future (Mrak & Rant, 2018).

## *2.4 Hypotheses*

Based on the introductory observations and theoretical background, we formulated three hypotheses:

H1: Slovenia deteriorated its position after the accession to the EU compared to the 2000–2004 period, while at least two other Central European EU member states improved their positions.

H2: The 2008 financial crisis hit Slovenia the most heavily compared to the other observed Central European EU member states.

H3: Slovenia and the other observed Central European EU member states had recorded positive trends of selected macroeconomic indicators in the ten years after the financial crisis.

### 3 Methodology and Data

This paper is a comparative dynamic macroeconomic study, as we analyzed the long-term trends of key macroeconomic indicators in the observed economies based on secondary data. We studied the trends of GDP per capita, GDP volume, total investment, unemployment, wages, and exports of goods and services in different periods during the 20 years before the coronavirus crisis.

We analyzed GDP per capita, PPP adjusted and calculated in relation to the EU 27 average, GDP volume growth, total investment growth, wages growth, unemployment rate, and exports of goods and services growth. Eurostat statistics was a source for GDP per capita data, while the European Commission's Economic Forecast was the source of data for all the other indicators.

The first hypothesis (H1: Slovenia deteriorated its position after its accession to the EU compared to the 2000–2004 period, while at least two other observed Central European EU member states improved their positions) was tested by comparing the average growth rates of GDP volume, total investment, wages, and exports of goods and services among the observed countries in two different periods (2000–2004 and 2004–2007). To estimate the positions of different countries we scored them according to each indicator on the 5-points scale in each observed period and established the improvement or decline of their positions. The second hypothesis (H2: The 2008 financial crisis hit Slovenia the most heavily compared to the other observed Central European EU member states) was tested by comparing the average growth rates of GDP and total investment, and growth of unemployment rates among observed countries in the period between 2008 and 2014. To estimate the positions of different countries, we scored them according to each indicator on a 5-point scale in the observed period and established their positions compared to the other observed countries. The country with the highest score achieved the best position. The third hypothesis (H3: Slovenia and the other observed Central European EU member states had recorded positive trends of selected macroeconomic indicators in the ten years after the financial crisis) was tested by analyzing growth rates of GDP, total investment, wages and exports, as well as the unemployment rates of the observed countries between 2017 and 2019.

### 4 Empirical Analysis

#### *4.1 Macroeconomic dynamics in the period before the 2008 financial crisis*

Slovenia had the highest GDP per capita among the observed countries at the time of accession to the EU. Slovenia's index was 88, followed by Czechia with 80, and all the other countries far behind.



*Table 1: GDP per capita of Slovenia and the other selected Central European EU member states between 2004 and 2019 (PPP, EU 27=100)*

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<i>SI</i>	88	89	88	89	91	85	85	84	83	83	83	83	84	86	87	88
<i>CZ</i>	80	82	81	84	85	86	84	84	83	85	87	88	88	90	91	92
<i>SVK</i>	59	62	65	68	73	72	76	76	77	78	78	78	73	72	73	74
<i>PL</i>	52	52	52	54	56	60	63	66	68	68	68	69	69	70	71	73
<i>HU</i>	63	64	63	61	64	65	66	67	66	68	69	70	68	69	71	73
<i>EU</i>	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

*Source:* Eurostat, 2020

In the years before the crisis (2004–2008), when economies reached their highest growth rates, we can see that Slovenia and Czechia came very close to the EU average; the Czech Republic to 85%, and Slovenia to as much as 91% of EU GDP (Table 1). Slovakia, which grew very fast, achieved 59% of EU GDP per capita in 2004; in 2008, however, it already reached 73% of EU GDP per capita. Poland and Hungary did not make as much progress in that period. After the financial crisis in 2008, many EU countries continued to deal with the recession. The Slovenian index fell by as many as 6 points between 2008 and 2009, to 85% of the EU average, and reached its bottom in 2012, when GDP per capita in Slovenia represented 83% of the EU average.

The country did not climb out of this bottom until 2016 when the index began to rise again. Czechia also reached the bottom of the crisis in 2012, when the index was 83. However, it rose again the following year, and in 2013 Czechia overtook Slovenia as the country whose GDP per capita was closest to the European average. Czechia persisted in first place until the end of the observed period, and its index grew from year to year. Slovakia, whose index fell from 73 to 72 between 2008 and 2009, recovered in 2010 and continued to grow, with the index peaking in 2013. Between 2013 and 2015, Slovakia maintained 78% of the EU GDP average, and then the index dropped to the pre-crisis levels. The Polish index increased throughout the observed period. Neither the global financial crisis nor the recession in the EU stopped Poland's convergence to the EU average GDP per capita. The country, which in 2004 reached just over half of the EU average GDP per capita, in 2019 reached almost three-quarters of the EU average. The Hungarian index was steadily rising and declining throughout the observed period. Significant declines occurred in 2005–2007 and 2015–2016, but Hungary was moving closer to the EU average throughout both periods. In 2019, it reached 73% of the EU average, while in 2004, it reached 63%.

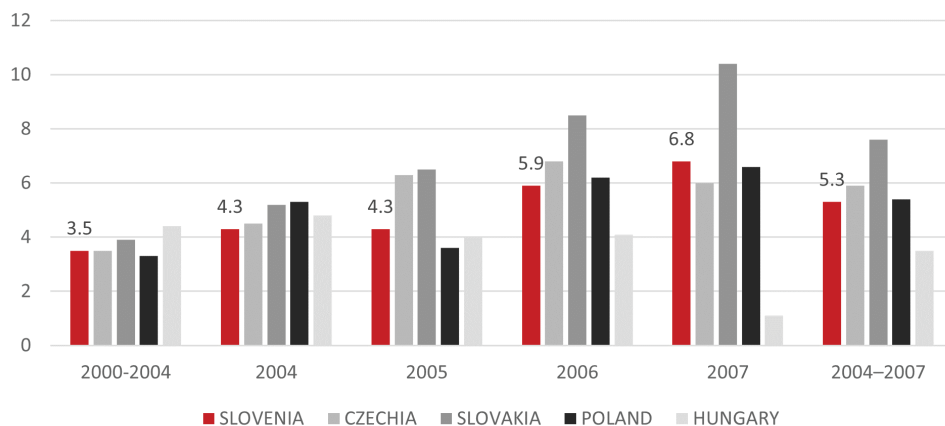
Table 1 gives us an insight into the development of selected countries between 2004 and 2019, compared to the EU average. It is noticeable that all the considered member states, except Slovenia, managed to approach the EU average in terms of GDP per capita. Slovenia is the only selected country that did not have a higher index in 2019 than in 2004. Slovenia's index remained the same (88), although, before the crisis, this index had already reached 91, but it never returned to the pre-crisis levels. As mentioned, the index increased in all other countries; in Hungary, by ten index points, to 73, and the most in Poland, by 21 index points, to 73. In order to understand these data, we should



not overlook that Romania and Bulgaria joined the EU in 2007 and Croatia in 2013, which reduced the average GDP per capita in the EU in the observed period.

In the 2004–2007 period, Slovenia achieved on average the fourth highest GDP growth among the five observed economies after Slovakia, Czechia, and Poland (Figure 1). The differences in growth levels among Slovenia and the other observed countries were much more significant between 2004 and 2007 than in 2000–2004.

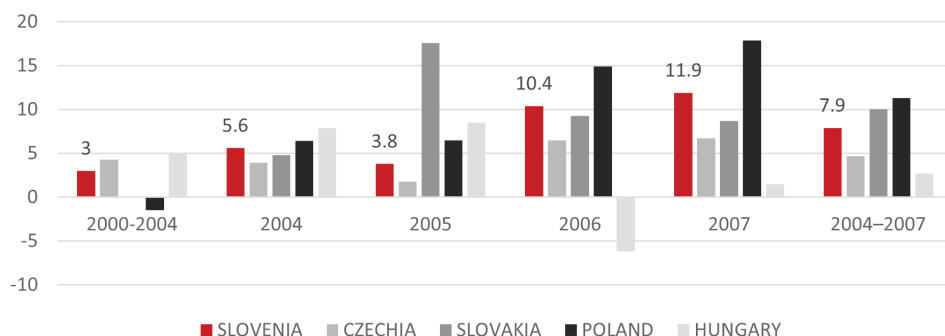
*Figure 1: GDP, volume (2000–2007, percentage change on preceding year)*



*Source:* European Commission (2008, 2019) and own calculations

A review of the average total investment growth before the accession to the EU (Figure 2, column 2000–2004) shows that Slovenia achieved the third-highest growth level after Hungary and Slovakia. Between 2004 and 2007, Slovenia also reached the third-highest average growth, after Poland and Slovakia.

*Figure 2: Total investment, volume (2000–2007, percentage change on preceding year)*



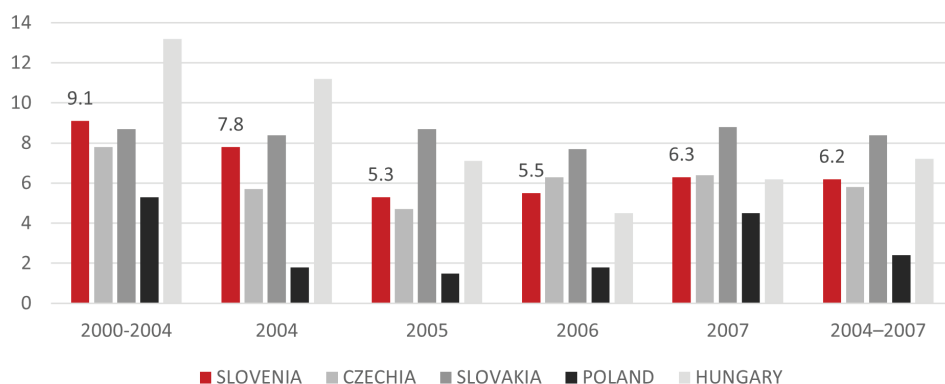
*Source:* European Commission (2008, 2019) and own calculations

In the years after the accession to the EU and before the financial crisis, the total investment growth levels in all observed countries, except in Hungary, achieved

higher levels. While Hungary achieved the highest growth level of total investment before the accession to the EU, in the period after the accession to the EU and before the financial crisis in 2008, the highest growth level of total investment was reached by Poland, followed by Slovakia.

Before the accession to the EU, Slovenia evidenced the second-highest growth rate of wages (9.1%) after Hungary (Figure 3). However, after the accession to the EU, its growth rate of wages was decreasing until the crisis in 2008, when it amounted to 6.2% on average, after Slovakia and Hungary.

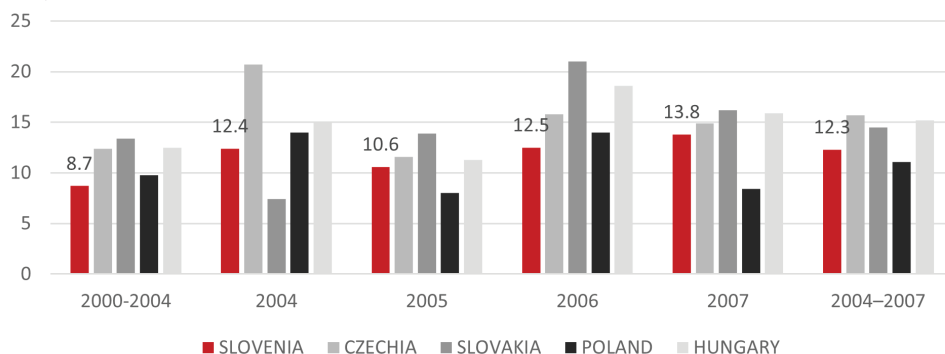
*Figure 3: Compensation of employees per head (wages) (2000–2007, percentage change on preceding year)*



Source: European Commission (2008, 2019) and own calculations

In 2000–2004, Slovenia evidenced on average the lowest growth of exports of goods and services (8.7%) among the selected CE countries after Slovakia, Hungary, Czechia, and Poland (Figure 4). In the four years after the accession to the EU and until the financial crisis in 2008, Slovenia's average exports growth was almost the lowest (12.3%); only Poland, as a much larger country, lagged behind Slovenia.

*Figure 4: Exports of goods and services (2000–2007, percentage change on preceding year)*



Source: European Commission (2008, 2019) and own calculations

In the four years after the accession to the EU, Slovenia deteriorated its position among the other selected CE countries concerning the average GDP growth. However, its position concerning the average total investment growth, average exports growth, and average wages growth remained the same as in the four years before its accession to the EU.

#### 4.2 Macroeconomic dynamics in the period between 2008 and 2014

In this subchapter, we analyze the macroeconomic dynamics of Slovenia, of the other four selected CE EU member states, and of the EU in the year when the financial crisis started and until 2014. We pay special attention to the most significant deteriorations and improvements of countries' positions according to the observed indicators.

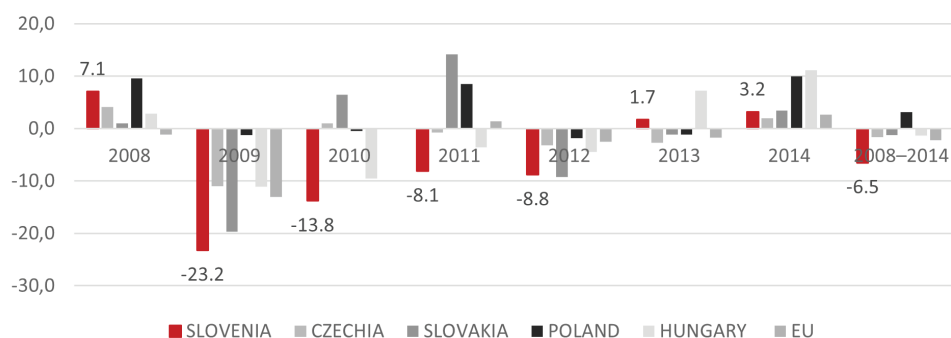
Figure 5: GDP, volume (2008–2014, percentage change on preceding year)



Source: European Commission (2013, 2016) and own calculations

The 2008 financial crisis led to the fall of real GDP in all the observed countries, except in Poland. Its GDP grew by an average of 3% per year over the whole period. Slovenia was positioned in third place among the observed countries with the recorded level of 3.4% GDP growth in 2008 (Figure 5). In 2009, however, it recorded the highest drop in the GDP growth rate (7.8%). Slovenia repeated a significant decrease in 2012 and 2013. On average, Slovenia's GDP dropped by 0.6% between 2008 and 2014, which was the most significant drop among the observed countries and higher than in the EU on average.

Figure 6: Total investment, volume (2008–2014, percentage change on preceding year)



Source: European Commission (2013, 2016) and own calculations

The 2008 financial crisis also led to a sharp decline in gross investment in the EU. Slovenia recorded, on average, the most significant drop in total gross investment in this period (6.5%). Poland's total investment, however, grew in this period on average by 3.5% (Figure 6). Total investment in the EU decreased as early as 2008, with the most significant drop in 2009, at 13%. During the recession years, 2012 and 2013, total investment growth was again negative. Over the entire period under review, EU's total investment fell by 2.2% per year.

Because of the 2008 financial crisis, the unemployment rate started to rise across the EU. If in 2008 it still amounted to 7.1% of the total active population of the EU, in the following year it started to grow, and in 2012 and 2013 it reached its peak (10.9%). It began to decrease as late as in 2014. In the observed period, Slovenia and Poland reached the highest unemployment rate the last – in 2013. All the other observed countries reached their peak earlier. Along with the Czech Republic, Slovenia had the lowest unemployment rate before the crisis, but it emerged from the crisis as a country with an unemployment rate higher than that of the Czech Republic, Poland and Hungary (Table 2).

Table 2: Unemployment rate, number of unemployed as a percentage of total labor force (2008–2014)

	2008	2009	2010	2011	2012	2013	2014	Δ2008–2014
SLOVENIA	4.4	5.9	7.3	8.2	8.9	10.1	9.7	54.6%
CZECHIA	4.4	6.7	7.3	6.7	7.0	7.0	6.1	27.9%
SLOVAKIA	9.6	12.1	14.5	13.6	14	14.2	13.2	27.3%
POLAND	7.1	8.1	9.7	9.7	10.1	10.3	9.0	21.1%
HUNGARY	7.8	10	11.2	10.9	11.0	10.2	7.7	-1.3%
EU	7.1	9.0	9.7	9.7	10.5	10.9	10.2	30.4%

Source: European Commission (2013, 2016) and own calculations

In the observed period from 2008 to 2014, unemployment in Slovenia increased by more than 54%, which was the most among the observed countries. Slovenia also

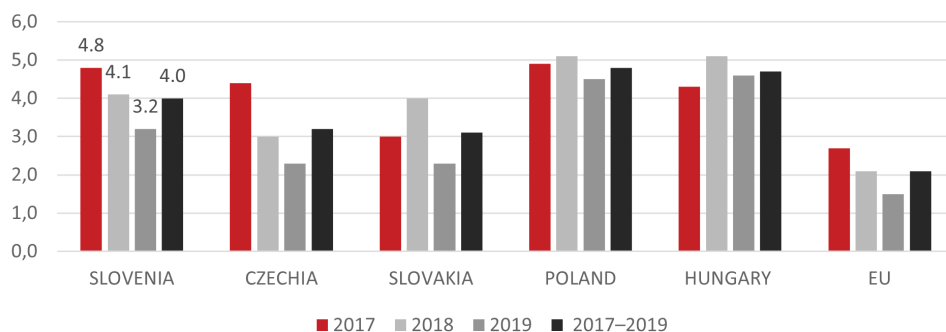
evidenced a significantly higher growth of the unemployment rate in this period than the EU (30.4%).

#### 4.3 Macroeconomic dynamics in the period between 2017 and 2019

This subsection discusses the economic trends of selected countries in the period between 2017 and 2019. We compared countries based on the growth of GDP, total investment, unemployment, wages, and exports.

The period from 2017 onwards shows continuous GDP growth of the countries concerned and of the EU. Figure 7 shows that in all the countries considered, GDP grew faster than in the EU; in some countries even twice as fast. On average, GDP in the EU grew by 2% per year over the three-year period, while it grew between 3 and 5% per year in the five observed countries. Slovenia's GDP grew almost twice as fast as the EU average, and faster than the GDP of Czechia and Slovakia.

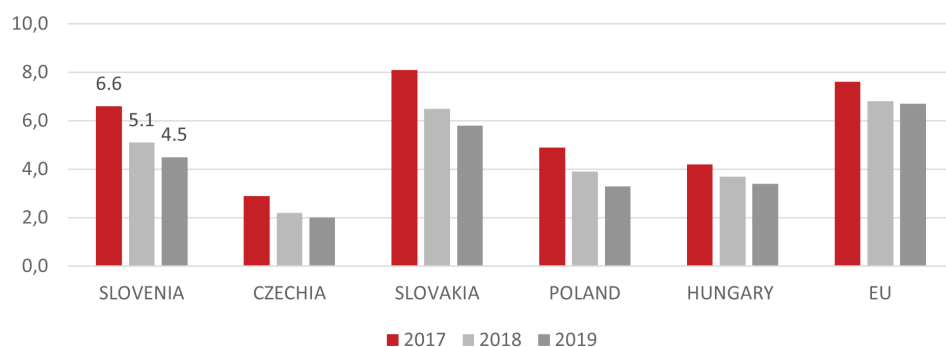
Figure 7: GDP, volume (2017–2019, percentage change on preceding year)



Source: European Commission (2019, 2020) and own calculations

The recovery from the financial crisis and recession is reflected in the data on the EU unemployment rate, which was steadily declining in 2017–2019. After a 7.6% unemployment rate in the EU in 2017, the rate was almost 1% lower in 2019. All the observed countries decreased their unemployment rate more than the EU in the last year of the observed period (Figure 8).

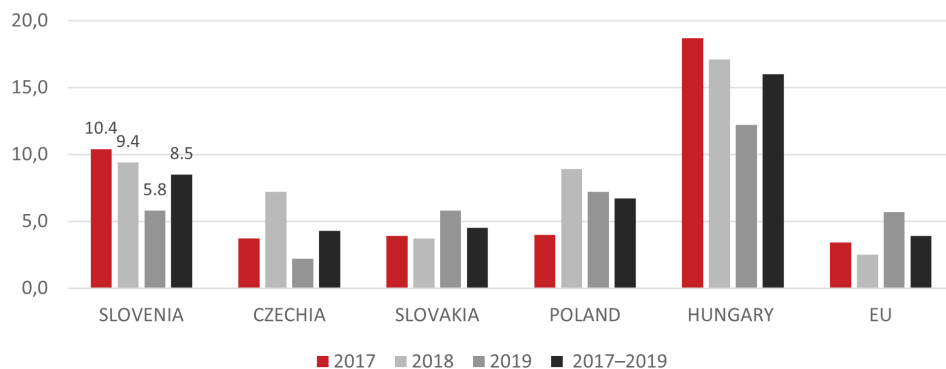
**Figure 8:** Unemployment rate, number of unemployed as a percentage of total labor force (2017–2019)



*Source:* European Commission (2019, 2020) and own calculations

Total investment increased every year in all the discussed countries over the observed three-year period. In 2017, investment in all five countries grew above the EU average. Hungary and Slovenia achieved the highest growth rates in these years. Total investment in Slovenia grew on average by 8.5% per year (Figure 9).

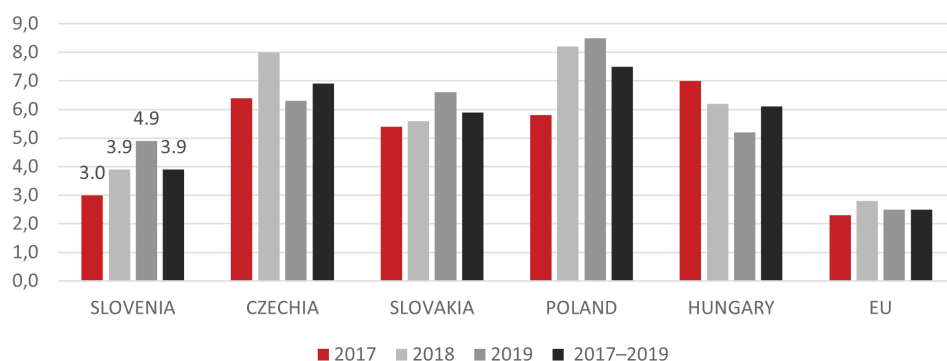
**Figure 9:** Total investment, volume (2017–2019, percentage change on preceding year)



*Source:* European Commission (2019, 2020) and own calculations



*Figure 10: Compensation of employees per head (wages) (2017–2019, percentage change on preceding year)*

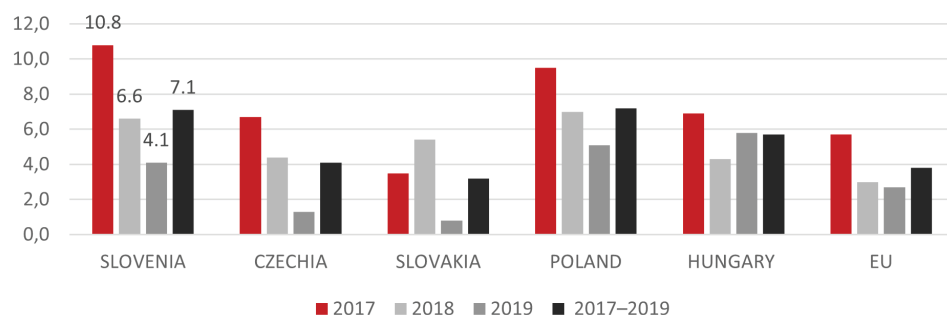


*Source:* European Commission (2019, 2020) and own calculations

Wages also grew steadily in all the observed countries over the 2017–2019 period. Their growth was higher than the EU average. The lowest wage growth among the five countries in this period was experienced by Slovenia (3.9%). The average annual wage growth in the EU was 2.5% over this period (Figure 10).

EU exports of goods and services increased every year from 2017 to 2019. On average, they increased by 3.8% per year over these three years. Of the eight countries examined, only Slovakia had a lower export growth than the EU in the observed three-year period, mainly due to an increase of less than one percent in 2019 compared to 2018. Poland and Slovenia achieved the highest average export growth during the observed period (Figure 11).

*Figure 11: Exports of goods and services (2017–2019, percentage change on preceding year)*



*Source:* European Commission (2019, 2020) and own calculations

### 4.3 Hypotheses Testing

#### 4.3.1 Testing hypothesis 1

Comparing GDP growth, we found that the other observed countries, except Hungary, achieved higher average annual GDP growth than Slovenia in the 2004–2007 period. Growth in total investment in the same period was the next indicator according to which we studied the alleged decline in Slovenia's advantage. Two of the four countries we compared with Slovenia achieved higher average annual growth rates of total investment than Slovenia. Czechia and Hungary had lower total investment growth during this period. In terms of trends in wages, Slovenia had higher growth than Czechia and Hungary in the first four years after joining the EU. In terms of total exports growth, Slovenia performed better than other countries. It had the fourth-highest average annual total exports growth among the five countries considered, followed by Czechia, Slovakia, and Hungary.

Before the accession to the EU (2000–2004), Slovenia achieved the third-lowest average growth of GDP and total investment, the fourth-lowest growth of wages, and the first lowest growth of total exports. In the observed period before the 2008 financial crisis (2004–2007), Slovenia recorded the second-lowest average GDP growth, the third-lowest average total investment growth, the third-lowest average wage growth, and the second-lowest average of total exports growth. Table 3 shows the scores of each country according to its total number of points received for all the observed indicators in both periods.

*Table 3:* The macroeconomic position of Slovenia among the other observed CE EU member states between 2000 and 2004 and between 2004 and 2007

	GDP growth		Total investment growth		Wages growth		Exports growth		Scores	
	2000–2004	2004–2007	2000–2004	2004–2007	2000–2004	2004–2007	2000–2004	2004–2007	2000–2004	2004–2007
<i>Slovenia</i>	3	2	3	3	4	3	1	2	11	10
<i>Czechia</i>	3	4	4	2	2	2	3	5	12	13
<i>Slovakia</i>	4	5	2	4	3	5	5	3	14	17
<i>Poland</i>	2	3	1	5	1	1	2	1	6	10
<i>Hungary</i>	5	1	5	1	5	4	4	4	19	10

Note: Five-point scale; 1 – the lowest average annual growth, 5 – the highest average annual growth

Source: Own calculations

From the last two columns in Table 3, it is evident that Slovenia deteriorated its position in the observed indicators after its accession to the EU (2004–2007) compared to the 2000–2004 period. It is also apparent that the other three observed CE countries improved their positions after their accession to the EU. Therefore, we can confirm hypothesis 1 (H1: Slovenia deteriorated its position after its accession to the EU compared to the 2000–2004 period, while at least two other Central European EU member states improved their positions).

### 4.3.2 Testing hypothesis 2

In the observed period between 2008 and 2014, Slovenia's GDP fell three times. All countries experienced the worst declines in 2009. Only Slovenia recorded a negative average GDP growth rate in the observed period (-0.6%). Czechia and Hungary had an average GDP growth rate below 1% in the observed period, but it was still positive. Slovakia and Poland recorded a higher average GDP growth rate of 1.9% and 3%, respectively.

Apart from Czechia, Slovenia entered the financial crisis with the lowest unemployment rate among the observed countries. In 2013, only Czechia recorded a lower unemployment rate than Slovenia; a year later, however, that was also true of Hungary and Poland. Most of the observed countries reached the peak unemployment rate already in 2010, while Slovenia's unemployment rate had been rising steadily until 2013, and started to decrease as late as in 2014. To compare the countries, we calculated the percentage increase in unemployment in the selected countries between 2008 and 2014. Calculations showed that in the observed period from 2008 to 2014, Slovenia recorded a 54.6% increase in unemployment. In the three other observed countries (Czechia, Slovakia, and Poland), unemployment increased between 21.1% and 27.9%. In Hungary, however, it even decreased by 1.3%. We can conclude that after the advent of the financial crisis, it took Slovenia the longest to decrease the unemployment rate compared to the other observed countries. In contrast, its unemployment rate increased the most among all the considered countries.

Concerning the average total investment growth, Slovenia recorded the first significant decline between 2008 and 2014. Otherwise, all the observed countries (apart from Poland) had negative growth in total investment during this period.

To test the second hypothesis, we also evaluated the countries' positions according to the changes in the average annual growth rates of GDP, total investment and unemployment rates between 2008 and 2014. The country with the lowest average GDP growth and total investment growth in the observed period received one point, whilst the one with the highest average growth received five points. The country with the lowest unemployment growth received five points, and the one with the highest unemployment growth received one point. For the country that collected the lowest score, we can argue that the financial crisis affected it the most or that it recovered the least, while the country with the highest score was the least affected by the crisis. Table 4 shows the position of Slovenia among the other observed CE countries.

It is evident from Table 4 that Slovenia gathered the lowest score among the observed countries. Based on these results, hypothesis 2 (H2: The 2008 financial crisis hit Slovenia the most heavily compared to the other observed Central European EU member states) can be confirmed, as Slovenia performed the worst in the years after the 2008 financial crisis according to the trends of the three selected macroeconomic indicators.

*Table 4:* The macroeconomic position of Slovenia and the other observed CE EU member states between 2008 and 2014

	<i>GDP growth</i>	<i>Total investment growth</i>	<i>Unemployment growth</i>	<i>Score</i>
<i>Slovenia</i>	1	1	1	3
<i>Czechia</i>	2	3	2	7
<i>Slovakia</i>	3	4	4	11
<i>Poland</i>	4	5	5	14
<i>Hungary</i>	5	2	3	10

Note: Five-point scale; 1 – the lowest average GDP and gross investment growth, 5 – the highest average GDP and gross investment growth; 1 – the highest average unemployment growth, 5 – the lowest average unemployment growth.

*Source:* Own calculations

#### 4.3.3 Testing hypothesis 3

We also observed the macroeconomic trends of the selected countries during the stabilization of the economic situation in the EU – in the period between 2017 and 2019. We hypothesized that Slovenia and the other observed Central European EU member states had recorded positive trends of selected macroeconomic indicators in the ten years after the financial crisis. Our research shows that in the period between 2017 and 2019, Slovenia and the other observed CE countries 1) experienced positive average GDP growth (Figure 7); 2) decreased the average unemployment rate (Figure 8); 3) recorded positive average growth of total investment (Figure 9); 4) recorded positive average growth of wages (Figure 10); 5) recorded positive average growth of exports (Figure 11). Based on this analysis, we confirmed hypothesis 3.

## 5 Discussion and Conclusion

In the 1990s and at the beginning of this century, Slovenia had a clear goal: joining the EU, transforming the economy, and converging with the developed EU member states. According to the convergence theory (or the catch-up effect), the less developed country will move closer to the developed one and achieve convergence in the long run because diminishing returns are not as strong as in a developed country. Additionally, the less developed country can replicate a developed country's production methods, technologies, and institutions. Membership in economic integration can be a solid basis for convergence. However, structural reforms, human and physical capital investments, foreign investments, and an excellent macroeconomic climate are also a requisite.

In this paper, we analyzed the macroeconomic trends of Slovenia and comparable Central European EU member states in the twenty-year period before the coronavirus pandemic. We explored how membership in the EU spurred the catch-up effect through the macroeconomic dynamics of the observed countries. In 2004, when Slovenia, Czechia, Slovakia, Poland, and Hungary joined the EU, Slovenia was still the most developed country of them all in terms of GDP per capita. Therefore, Slovenia had the

most favorable initial conditions for managing the transition and quickly catching up with the existing EU members. However, this advantage began to stagnate and decline, particularly after the financial crisis in 2008, while the trends of the GDP per capita of the other observed countries recorded lower drops during the 2008 financial crisis and higher increases in the whole observed period. Slovenia did not develop resilience in its economy. Therefore, the financial crisis in 2008 pushed it to the brink, and it barely avoided international aid to the then majority state-owned banking sector. In 2009 Slovenia was hit by a sharp drop in GDP. Although Slovenia reached 91% of the EU GDP per capita average in 2008, this index dropped to 83 and stagnated for four years due to the 2012 and 2013 recession. Since 2016, Slovenia has been approaching the EU average again, but it seems that Czechia has built a solid advantage. In the following years, Slovenia recovered and again achieved positive GDP growth. Comparing Slovenia with the selected economies in the observed period, we can speak about beta-convergence. The less developed countries grew faster than Slovenia when they entered the market economy at the beginning of their transition.

Based on the analysis and comparison of selected macroeconomic indicators, we managed to confirm all three hypotheses. It was evidenced that Slovenia deteriorated its position after its accession to the EU compared to the 2000–2004 period, while at least two other observed CE countries improved their positions. We confirm that compared to the other observed CE EU member states, Slovenia has been hit by the 2008 financial crisis the most heavily. It was also confirmed that Slovenia and all the other observed CE EU member states had recorded positive trends of selected macroeconomic indicators in the ten years after the financial crisis. In the research, we limited ourselves to selected macroeconomic indicators.

With the coronavirus pandemic lasting since 2020, the countries' economic situation has changed. The pandemic has had numerous negative impacts on the macroeconomic trends of the EU and its member states, which have been observed in this paper. However, Europe and the world could also learn from the pandemic crisis. Newly established and existing companies that have managed to adapt their business models to the current situation indicate technological development. New technologies will continue to revolutionize economies and the labor markets. They will affect productivity and economic growth, but they will also bring new challenges. In the future, it will be crucial for Slovenia to build resilience for mitigating the effects of similar crises and for quick recovery.

On the other hand, there is a fear that Slovenia will lose numerous years of possible development opportunities and convergence with more developed EU member states after the recent global health crisis and the consequences of the latest geopolitical instability in the world. High indebtedness, new demands from the public budget, higher energy costs and the negative impacts of the Russia-Ukraine war could slow the process of recovery. Therefore, it is crucial to draw as much financial resources as possible from the financial package of EU assistance in the 2021–2027 programming period and to build a stable political and socioeconomic environment. Notwithstan-

ding the current national, regional, and global uncertainty, Slovenia should never stop striving to become one of the most prosperous European economies.

*mag. Benjamin Topolko, dr. Romana Korez Vide*

## **Makroekonomska dinamika Slovenije in primerljivih srednjeevropskih držav članic EU v obdobju pred pandemijo koronavirusa**

*V zadnjih tridesetih letih so srednjeevropske države članice EU izkazale različne vrste prehodov iz centralno-planskega v tržno gospodarstvo. Prestrukturiranje je privedlo do različnih rezultatov v teh gospodarstvih. Češka, Slovaška, Poljska in Madžarska so pokazale več podobnosti s Slovenijo v družbeno-ekonomskem okolju in ambicijah po iskanju položaja na odprtem evropskem trgu. Zato so raziskovalne primerjave in razprave o položaju Slovenije med temi državami v obdobju po začetku njihove politične in gospodarske tranzicije v začetku 90. let preteklega stoletja še posebej smiselne.*

*Namen prispevka je primerjalno analizirati makroekonomsko dinamiko Slovenije in primerljivih srednjeevropskih držav članic EU v obdobju 20 let pred pandemijo koronavirusa. Posebno pozornost namenjamo učinkom vstopa teh držav v Evropsko unijo (EU) in posledicam valov finančne krize leta 2008 na makroekonomska gibanja v Sloveniji in drugih obravnavanih državah. Ugotavljamo, po katerih makroekonomskih kazalnikih je Slovenija za opazovanimi državami zaostajala.*

*V odprtih tržnih gospodarstvih so vrednosti makroekonomskih kazalnikov pod vplivom ekonomske politike, pa tudi nacionalnega, regionalnega in globalnega družbeno-ekonomskega in političnega konteksta (glej Abramovitz (1986) in Sokoloff in Engerman (2000)). Dobro oblikovan koncept gospodarske politike države in njenih ukrepov mora ohranjati makroekonomsko stabilnost. Cilji ekonomske politike, kot so rast bruto domačega proizvoda (BDP) in stopnja brezposelnosti, predstavljajo uspeh ali neuspeh ekonomske politike. Običajno so nasprotujoči si, kot sta inflacija in brezposelnost, prikazana s Phillipsovo krivuljo (Samuelson in Nordhaus, 2002). V mnogih primerih neposredni in posredni učinki ekonomske politike niso vnaprej znani ali pa so negativni posredni učinki večji od pozitivnih neposrednih učinkov. Pomembni dejavniki so tudi časovne razsežnosti postopkov odločanja ter sprejemanja in uveljavljanja ukrepov. Z določanjem denarnih in fiskalnih instrumentov si vlade prizadevajo za čim večjo družbeno blaginjo, ki jo predstavljata gospodarska rast in stabilnost cen (Ahtik in Mencinger, 2012). Poleg ekonomske politike je pomemben nacionalni, regionalni in globalni gospodarski in družbenopolitični kontekst, vključno z globalno politično in družbeno-ekonomsko stabilnostjo, poslovno regulativo, pravno državo, zaupanjem javnosti v politične institucije, korporativnim upravljanjem, neodvisnostjo medijev itd.*



*Analiza strukture in elementov rasti BDP je ključnega pomena pri oblikovanju gospodarske politike države. Največji znesek, ki ga lahko gospodarstvo proizvede po stabilnih cenah, je opisan kot potencialni BDP. Teoretično lahko to imenujemo raven BDP pri polni zaposlenosti. Realni BDP v recesiji pada za krajše obdobje in se znatno ne razlikuje od potencialnega BDP. Daljše obdobje njegovega upadanja in večjo razliko med dejanskim in potencialnim BDP pa označujemo kot gospodarsko krizo ali depresijo (Samuelson in Nordhaus, 2002). Pomen bruto investicij se kaže v njihovih učinkih na agregatno povpraševanje, ki vpliva na BDP in brezposelnost. Naložbe vodijo v večji obseg kapitala in povečanje potencialnega BDP ter dolgoročno spodbujajo gospodarsko rast in znižujejo brezposelnost. Plače so bistveni dejavnik v strukturi ponudbe in povpraševanja po delovni sili. Posredno vplivajo na BDP in stopnjo zaposlenosti ter gospodarsko rast. Z njimi lahko merimo konkurenčnost gospodarstva, saj običajno višje plače pomenijo tudi višji življenjski standard. Sodelovanje v mednarodni trgovini je ključnega pomena za gospodarstvo. Intenzivnost tega sodelovanja je odvisna od velikosti države, tega, kar proizvaja, njene samooskrbe in stopnje zaposlenosti. Mednarodna trgovina spodbuja gospodarsko rast. Izvoz povečuje število delovnih mest, prispeva k višjim plačam in dviguje življenjski standard prebivalstva.*

*Z regionalnim gospodarskim povezovanjem želijo države zmanjšati in odstraniti ovire za prosti pretok blaga, storitev in proizvodnih dejavnikov. Regionalno povezovanje poskuša izkoristiti prednosti proste trgovine in naložb med državami v regiji. Takšen režim je lažje vzpostaviti znotraj omejenega števila sosednjih držav kot na ravni svetovne skupnosti. Prosta trgovina med državami članicami ekonomske integracije omogoča, da se države specializirajo za proizvodnjo blaga in storitev, ki jih lahko zagotovijo najbolj učinkovito (Hill, 2009). Možni učinki gospodarskega povezovanja so višja proizvodna učinkovitost, ki je posledica višje stopnje specializacije in ekonomije obsega, močnejšega pogajalskega položaja na mednarodnih trgih in političnem prizorišču ter dostopa do tehnološkega napredka drugih držav članic. Gospodarsko povezovanje v EU temelji na štirih svoboščinah – prosti pretok blaga, storitev, ljudi in kapitala. Skoraj tri desetletja po dokončnem oblikovanju enotnega trga je slednje prineslo številne makroekonomske koristi. Čeprav je nepopoln, je povečal proizvodnjo in domače povpraševanje (Mion in Ponattu, 2019). Odpiranje domačih gospodarstev je povečalo konkurenco in znižalo cene. Notranji trg EU je bistveno povečal možnosti za gospodarsko širitev novih držav članic. Podjetja so imela možnost vstopa v združitve in prevzeme na obsežnejšem trgu, z večjimi podjetji pa je lahko postala obsežnejša tudi ekonomija obsega. Nižji stroški na enoto proizvodnje so povzročili višjo proizvodnjo in višji BDP na zaposlenega. Zaradi boljše investicijske klime so se povečale naložbe v fizični kapital.*

*S pristopom novih držav k EU leta 2004 naj bi njihova gospodarstva postala zrelejša, se globlje integrirala s starimi članicami in sčasoma zmanjšala zaostanke. Dolgoročni cilji Slovenije so bili dvig blaginje, gospodarske rasti in življenjskega standarda ter približevanje zahodnoevropskim državam. Slovenija si je prizadevala povečati mednarodno menjavo, pritegniti tuji kapital ter povečati zaposlenost in gospodarsko rast. EU je s ciljem doseganja povprečja EU glede rasti in dohodka v države članice,*

ki so se pridružile leta 2004, znatno vlagala preko instrumentov kohezijske politike in drugih finančnih mehanizmov.

Finančna kriza leta 2008 je povzročila najhujši gospodarski upad v zgodovini EU. Vzroki za krizo so bili v evropskih državah različni. Ob koncu leta 2009 so bile še posebej prizadete nekatere bolj zadolžene članice EU s povečanimi proračunskimi primanjkljaji. Kriza je imela ogromne posledice za gospodarsko rast, investicije, zaposlovanje in fiskalni položaj držav članic. Odgovorno upravljanje proračuna in medsebojna finančna pomoč je bila strategija, s katero se je EU odzvala na globalne finančne in gospodarske spremembe v tem obdobju.

V prispevku na podlagi sekundarnih podatkov analiziramo dolgoročna gibanja vrednosti ključnih makroekonomskih kazalnikov v opazovanih gospodarstvih. Proučujemo BDP na prebivalca, bruto naložbe, stopnje brezposelnosti, plače in dinamiko izvoza v obdobju 20 let pred pandemijo, začenši z letom 2000. Na podlagi uvodnih izhodišč in teoretičnega ozadja smo oblikovali tri hipoteze.

Leta 2004, ko so Slovenija in primerjane srednjeevropske države članice EU – Češka, Slovaška, Poljska in Madžarska – vstopile v EU, je bila Slovenija še vedno najboljše uvrščena država med njimi po BDP na prebivalca. Zato je imela najugodnejše začetne pogoje za tranzicijski proces in hitro dohitevanje starih članic EU. Po drugi strani je ta prednost Slovenije začela stagnirati in upadati, zlasti po finančni krizi leta 2008, medtem ko je BDP na prebivalca v ostalih opazovanih državah v obdobju krize beležil nižje padce in je v povprečju hitreje rasel v celotnem opazovanem obdobju. Leta 2009 je Slovenijo prizadel močan padec BDP. Čeprav je v letu 2008 dosegla 91 % povprečja EU po BDP na prebivalca, je ta indeks zaradi recesije v letih 2012 in 2013 padel na 83 % in štiri leta stagniral. Med ključne dejavnike ugotovljenih makroekonomskih gibanj v Sloveniji v opazovanem obdobju je med drugim mogoče uvrstiti počasno privatizacijo, nizke prilive tujega kapitala, predvsem pa visoke proizvodne stroške (Inotai in Stanovnik, 2004). Če primerjamo Slovenijo in izbrana gospodarstva v opazovanem obdobju, lahko govorimo o beta-konvergenci, saj so manj razvita gospodarstva na začetku njihove tranzicije rasla hitreje kot Slovenija.

V prispevku smo v primerjalni analizi obravnavanih držav po izbranih makroekonomskih kazalnikih uspeli potrditi tri postavljene hipoteze. Potrdili smo, da se je položaj Slovenije po vstopu v EU v primerjavi z obdobjem 2000–2004 poslabšal, medtem ko sta se položaja vsaj dveh od ostalih opazovanih držav izboljšala. Prav tako smo potrdili, da je Slovenijo, v primerjavi z ostalimi opazovanimi državami, finančna kriza leta 2008 najbolj prizadela. Naša raziskava je potrdila tudi hipotezo, da so Slovenija in ostale opazovane države v desetih letih po finančni krizi pričele beležiti pozitivne trende izbranih makroekonomskih kazalnikov.

Za Slovenijo bo v prihodnje ključnega pomena krepitev prožnosti s ciljem blažitve negativnih učinkov kriz in hitrega okrevanja. Na ta način se bo lahko hitreje približevala povprečni ravni razvitosti držav članic EU in jo v prihodnosti dosegla.

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