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Review Paper

ANALYSIS OF MACROECONOMIC INDICATORS OF THE VISEGRAD GROUP

Ladislav Mura[1]
Noémi Fóthy[2]
Vivien Pásztóová[3]

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Abstract: *The past two years have been largely defined by an unforeseen threat from the emergence of the COVID-19 pandemic. It has had a huge impact on the economic development of individual countries. SMEs as important contributors to the economy of individual countries felt the negative effects of the pandemic the most. Our research intends to examine the macroeconomic effects of the changes caused by the pandemic in the Visegrad Four countries using comparative analysis. The paper is based on a summary of the literature on which the topic is based, followed by the evaluation and analysis of data from secondary sources. The secondary data was collected using databases published by Eurostat, the OECD, and Statista. The analysis shows that the impact of the pandemic can be monitored for each macroeconomic indicator.*

Keywords: *Visegrad four, Macroeconomic changes, SMEs, COVID-19, Crisis.*

JEL Classification E00 · E24 · E31

✉ ladislav.mura@euba.sk
[1] University of Economics, Faculty of Commerce, Dolnozemská cesta 1, 852 35 Bratislava, Slovakia
[2] J. Selye University, Faculty of Economics and Informatics, Bratislavská cesta 3322, 945 01 Komárno, Slovakia
[3] J. Selye University, Faculty of Economics and Informatics, Bratislavská cesta 3322, 945 01 Komárno, Slovakia

1. INTRODUCTION

At the beginning of 2020, the world faced a global health problem, when COVID-19 shut down the world, and it had a significant impact on the social and economic life of the countries. As humanity entered an uncertainty of restrictions introduced by the governments, the global social and economic situation became increasingly hopeless. The most visible phenomena of the coronavirus are mass redundancies, unemployment, and insolvency in the economy.

From a social point of view, people became alienated from each other, reduced their social relationships, and a feeling of insecurity prevailed over them. Regarding the Visegrad countries of Central Europe (Poland, the Czech Republic, Hungary, Slovakia), recovery from the health, social and economic recession caused by the coronavirus is the main mission, which can be achieved as a result of responsible and dedicated behavior and cooperation on the part of citizens.

In response to minimizing the number of cases and preserving people's health, governments have tried to stop the infectious disease by introducing restrictions and controlling the spread of the virus. Nevertheless, the negative consequences of the pandemic have profoundly affected all V4 countries, both from micro-and macroeconomic perspectives.

2. LITERATURE REVIEW

The World Health Organization (WHO) announced the outbreak of the COVID-19 respiratory disease in January 2020, and soon after declared it a global pandemic in March 2020, due to the rapid and significant spread of the disease. The infectious disease minimized the functioning of economic mechanisms and undermined monetary stability. The unemployment rate has soared in V4 countries, and most of the countries experienced a financial crisis as well (Czech et al., 2020). The economic trauma caused by the pandemic was a global phenomenon (Czech, 2022), and almost immediately had an impact on the development of the labor market, resulting in shutdowns and sales problems (Karácsony et al., 2022).

Global economic activity has been slowed down by border closures and nationwide shutdowns, and unrest caused by the pandemic has resulted in market irregularities and changed consumer trends (McKibbin & Fernando, 2021). The health crisis can also be seen as an economic recession, as it has significantly intensified social and livelihood inequalities (Kowalski, 2021). As far as the Visegrad countries are concerned, the actions taken by their governments against the pandemic were similar (Nemec et al., 2020). According to the European Commission's 2022 finding, the pandemic affected the economy globally, mainly due to China's economic recession, the introduction of measures restricting mobility, the rising unemployment rate, and the weakening financial markets (Zinecker et al., 2021).

COVID-19 has posed an unprecedented challenge to the economies. Different economic activities were hit by the worsening of the pandemic situation (Papava, 2020). Numerous studies have shown that the health of the population has an impact on economic well-being and economic growth (Bhargava et al., 2006). Based on several studies, the impact of the coronavirus is expected to negatively affect food supply, inequality, democracy, human rights and development, pollution, education, urban and rural development, gender equality, poverty, trade activities, and globalization (Czech et al., 2020).

The impact of the pandemic on the macro-environment is desperate, and there are several risk factors to be taken into account for the future. Hungary in 2019 showed success in fixing the na-

tional debt, a process that was rewritten by the pandemic situation. The exchange rate of the Hungarian currency (HUF) weakened, and the rate of exports and imports also decreased. As a result of the pandemic, the Hungarian GDP decreased by 7% in the summer of 2020. Industrial production showed a decrease, while unemployment increased. Similarly, to other governments, Hungary called for late payment measures in the areas of taxation and social contributions and launched development projects to help SMEs (Nyikos et al., 2021).

In the early days of the pandemic, Hungary ranked among the countries with a balanced financial situation and economic development (Túróczi et al., 2020), as the government took appropriate steps to protect public health on time. The first coronavirus-infected patient was identified in early March 2020 (Szocska et al., 2021). Nationwide restrictions were imposed throughout the country, e.g. social distancing, limited use of certain services, and wearing face masks covering the airways both indoors and outdoors (Karácsony, 2020). Hungary experienced an economic slowdown, the markets remained passive, education shifted to online platforms and a transformation of the healthcare system was needed.

In 2020, the number of vacancies in Hungary was 1.9%, while in the Czech Republic, it reached 4.1% (Poór et al., 2021). The pandemic generated irregular and rapid changes in Hungary, but the country was able to react relatively quickly and deliberately to the unexpected situation. The macroeconomic forecasts for the future are unpredictable, as the data related to the Hungarian economic welfare index are not very favorable compared to the rest of the EU countries (Toth et al., 2021).

COVID-19 also affected the national debt in the Visegrad countries and the intention of households to borrow. In the Czech Republic, household consumption borrowing exceeded the Euro 20 million decline. The increase in the number of diseases had an impact on the increase in household debt, which remained low in Hungary (Czech & Puszer, 2021).

It can be observed that in Visegrad IV countries, national income increase is not linked to export activities (Czeczeli et al., 2020). In their study, Żak and Garncarz (2020) found that the pandemic situation in the Czech Republic did not particularly affect employment, but industrial production decreased. Before the outbreak of the pandemic, the Czech unemployment rate (1.9%) was the lowest among the EU members, however, the negative impact of the pandemic on all sectors of the industry was evident (Karácsony & Paszto, 2021).

Petrovič et al. (2021) analyzed the happiness index in the Czech Republic during the pandemic and found that the pandemic situation had triggered social and economic difficulties in addition to health problems. The country hit by the pandemic experienced despair and uncertainty. It had shown a responsible reaction in the fight against the virus, being inexperienced in tackling a problem of this kind. The restrictive measures imposed in the spring of 2020 had a negative impact on the service sector since most of the service providers had to close. The country experienced a GDP decrease as well. According to the forecasts, the Czech budget balance will be the lowest among the EU countries (Klimovský et al., 2021).

According to the World Population Review (2022), the Czech growth rate is 0.18%, and the country is threatened by its aging population. As a result, economic competitiveness is impaired, the industry sectors are losing strength and there is a shortage of skilled workers.

The first person infected with the coronavirus can be dated to the beginning of March 2020 (Nemec & Špaček, 2020), after a state of emergency was declared in the country and measures re-

stricting the free movement of people were introduced (Schmidt et al., 2021). The Czech Government tried to alleviate the rapid spread of infectious disease and its burden on healthcare by introducing strict measures (Jarský et al., 2022).

The restrictive measures respected the individual's rights. These were the compulsory face masks and limited access to certain services (Plaček et al., 2020). The most important issue was the labor market, how to treat the employees since most of the workplaces were hit by the pandemic, but in different measures (Hedvičáková & Kozubíková, 2021). The Czech government increased public spending at an astonishing rate as soon as it realized that the factors contributing to the increase in debt are strengthening (Tyniewicki & Kozieł, 2021). The country coped well with the first wave of the pandemic, but the second wave had more devastating effects (Klimovský & Nemec, 2020).

3. PURPOSE, METHODOLOGY, AND RESEARCH RESULTS

This study aims to assess and compare the macroeconomic situation of the V4 countries in Central Europe due to COVID-19, which is presented by analyzing secondary data. The secondary data used in the study were collected using databases Statista, Eurostat, UNCTAD, and the OECD. In secondary research, comparative analysis techniques are used for processing the data collected in relevant databases.

Figure 1 describes the unemployment rate development in the V4 countries for the period 2015-2021. The data are presented for all active workers over the age of 15 and are presented on an annual basis, regardless of gender. The COVID-19 infectious disease first appeared at the end of 2019 in Wuhan city, China. As a result of the pandemic situation, the unemployment rate has also increased in the Visegrad IV countries.

The data for the four countries show that from 2015 to 2019 unemployment rates fell steadily in Slovakia, Poland, and the Czech Republic. In Hungary, the indicator remained relatively stagnant from 2017 to 2019. In the Czech Republic, the unemployment rate was 2.1% in 2019, which increased by 0.7% in the last 2 years because of the pandemic to 2.8% by 2021. In Hungary, the unemployment rate is also increasing, as it increased by 0.5% during the period under review, from 3.5% to 4.0%. The Slovak unemployment rate increased by approximately 1% from 2019 to 2020, while in Poland the increase was much smaller. In the period from 2019 to 2020, the increase was 0.2%, and from 2020 to 2021 there was also an increase of 0.2%.

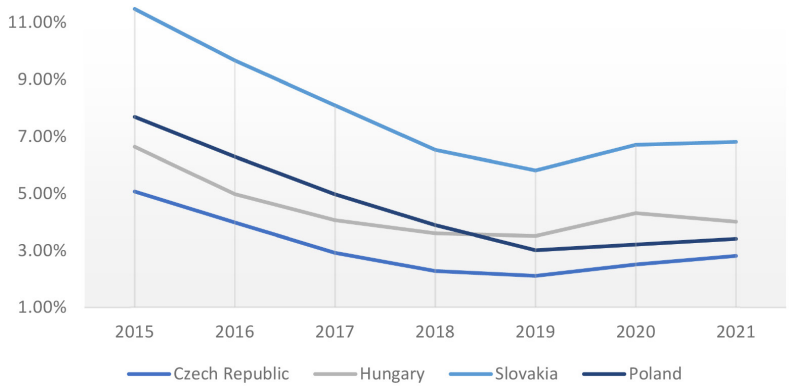

Figure 1. Unemployment rate
Source: Short-Term Labour Market Statistics (OECD)

The second figure examines the development of employment rate in terms of the V4 countries during the period 2015-2021. The table shows the development of employment during the pandemic among the respondents aged 15 - 64, regardless of gender. From 2015 to 2019, the employment indicators of the Czech Republic, Hungary, and Slovakia follow a similar curve. Over this period, employment in the three countries has increased steadily. Poland shows increased growth until 2017, followed by relative stagnation. The Czech employment rate fell by 1% in 2020, from 75.1% (2019) to 74.1% (2020), but there was an increase of 1% by 2021, so the indicator returned to the position where it was in 2019.

In Hungary, employment was not significantly affected by the pandemic. Compared to the employment rate in 2019 (72.2%) there is an increase of 1.7% in 2021 (73.9%). In Slovakia, the employment rate was 70.2% in 2019, which decreased to 69.4% by 2020, due to the impact of the pandemic. By 2021, the employment rate had risen to 70.4%. In the case of Poland, employment had been steadily increasing despite the outbreak of COVID-19. In 2019, the employment rate was 67.7%, which increased to 68.4% by 2020. In 2021, the rate continued to rise and reached 70.9%. Even though Poland recorded the largest increase in the employment rate, the Czech Republic and Hungary had the highest employment rates.

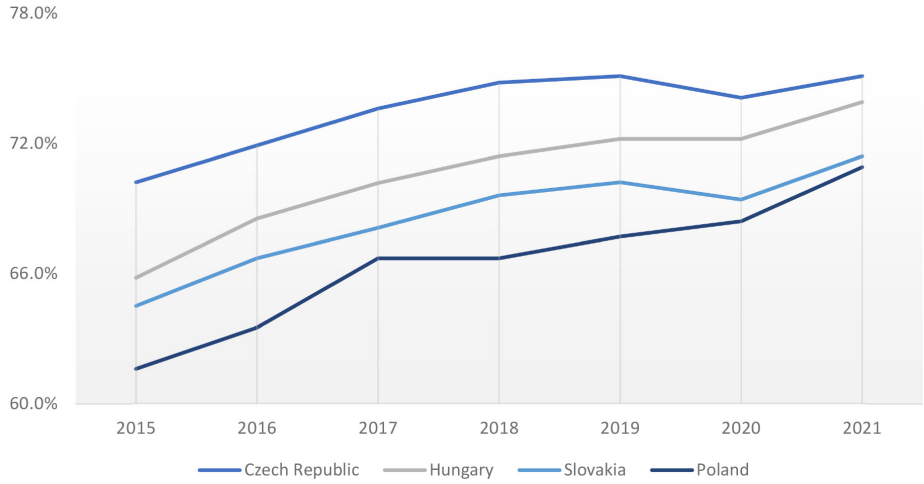

Figure 2. Employment rate
Source: Short-Term Labour Market Statistics (OECD)

Table 1 shows the evolution of GDP per capita (gross domestic product) from 2015 to 2019 in the V4 countries. In each of the Four Visegrad countries, there is an increase in the development of the indicator, which was not adversely affected by the pandemic.

Table 1. GDP per capita (US$)

	2015	2016	2017	2018	2019	2020	2021
Czech Republic	17842,87	18597,21	20666,67	23468,36	23713,89	23001,31	26849,19
Hungary	12690,17	13086,07	14608,72	16423,28	16731,47	16044,09	18732,38
Slovakia	16351,27	16521,56	17544,41	19411,8	19318,87	19254,47	21053,44
Poland	12563,61	12438,52	13868,91	15468,26	15726,88	15801,56	17945,75

Source: Statista

Table 2 shows changes in the inflation rate of the Visegrad countries. In the Czech Republic, inflation fell by 2021 (2.73%) compared to 2019 (2.85%) but was the highest in 2020 (3.16%). In Poland, the inflation rate was the highest (5.1%) in 2021. Slovakia had the lowest inflation rate in 2020 (1.53%), which increased to 2.81% by 2021.

Table 2. Inflation rate

	2015	2016	2017	2018	2019	2020	2021
Hungary	-0,07%	0,42%	2,41%	2,85%	3,37%	3,32%	5,13%
Poland	-0,93%	-0,58%	1,98%	1,60%	2,31%	3,40%	5,10%
Slovakia	-0,33%	-0,47%	1,39%	2,52%	2,77%	2,01%	2,81%
Czech Republic	0,31%	0,68%	2,45%	2,15%	2,85%	3,16%	3,84%

Source: Statista

Table 3 outlines the distribution of GDP in certain sectors of the Czech Republic for the period 2015-2021. In 2019, the service sector accounted for 56.97% of GDP, the growth of which was not changed by the pandemic, as it accounted for 57.72% of GDP in 2021. The contribution of industry to GDP decreased from 31.52% to 30.76%. The indicator for agriculture indicates a slight increase. It can be seen that the services sector is making an increasing contribution to GDP.

Table 3. Distribution of GDP across economic sectors in the Czech Republic

	2015	2016	2017	2018	2019	2020	2021
Agriculture	2,21%	2,09%	2,06%	1,94%	1,86%	1,92%	1,95%
Industry	33,78%	33,41%	32,71%	31,76%	31,52%	30,76%	31,21%
Services	54,06%	54,45%	55,10%	56,42%	56,97%	58,32%	57,72%

Source: Statista

Table 4 shows the distribution of GDP in some sectors of Hungary for 2015-2021. The service sector is the biggest contributor to GDP growth during the examined years. A slight difference between the examined years is detected in the industry sector and agriculture. Hungary has the highest share of the agriculture sector as a share of GDP among the Visegrad Four countries, but since 2015 this share decreases in favor of the services sector.

Table 4. Distribution of GDP across economic sectors in Hungary

	2015	2016	2017	2018	2019	2020	2021
Agriculture	3,79%	3,89%	3,75%	3,49%	3,34%	3,38%	3,32%
Industry	26,38%	25,49%	25,17%	25,08%	24,79%	24,63%	26,43%
Services	54,09%	55,46%	55,89%	55,89%	56,51%	56,64%	55,20%

Source: Statista

Table 5 shows Slovakia's GDP developments in each economic sector between 2015 and 2021. Similarly, to other V4 countries, the service sector contributes the most to GDP growth. Industry and agriculture experienced a slight decrease during the period considered. As in Hungary and the Czech Republic, the service sector is gaining ground in Slovakia over the period under review. However, its growth is smaller than in the Czech Republic.

Table 5. Distribution of GDP across economic sectors in Slovakia

	2015	2016	2017	2018	2019	2020	2021
Agriculture	2,20%	2,20%	2,09%	2,15%	1,67%	1,76%	1,77%
Industry	30,57%	29,34%	28,71%	29,23%	29,64%	27,36%	27,48%
Services	57,25%	58,51%	58,77%	58,15%	58,06%	60,39%	59,88%

Source: Statista

Table 6 examines GDP developments for certain sectors of Poland's economy in the period 2015 and 2021. In the case of Poland, also the service sector accounts for the majority of the GDP. During the period under review, there was a decrease in the agricultural sector and growth in the other sectors of the economy, but in 2021 there could be a significant decrease in the service sector. In Poland, growth in the services sector is less impressive. By 2021, the sector's share of GDP is restored to the 2015 levels.

Table 6. Distribution of GDP across economic sectors in Poland

	2015	2016	2017	2018	2019	2020	2021
Agriculture	2,37%	2,54%	2,87%	2,34%	2,32%	2,50%	2,37%
Industry	30,13%	29,52%	28,35%	28,54%	27,98%	27,68%	29,30%
Services	56,22%	56,28%	56,60%	56,68%	57,62%	57,84%	55,61%

Source: Statista

The third figure shows the development of FDI in each country from 2018 to 2021. The international measure of foreign working capital flows is FDI, the figure shows the net number of incoming finances in each country. Negative values can mean that foreign subsidiaries have withdrawn capital from the country. The invested amount is presented in millions of USD.

Figure 3. FDI in V4 countries, million $
Source: Self-edit based on UNCTAD, 2022

In 2018, Poland had the highest FDI at $15,996 million, Czech Republic experienced a decrease during the period under review, which may indicate that the country is becoming less and less popular for foreign investors. Hungary had the highest foreign capital influx into the country in 2020. Slovakia is the driving force among the V4 in FDI measures. In 2020, the negative value of

FDI indicates a withdrawal of capital from the country, but in 2021 the capital influx has already increased. Poland expected a record amount of foreign capital investment in 2021, with USD 24,816 million invested in the country.

Figure 4 shows the evolution of the number of SMEs in the V4 countries from 2018 to 2021. The figure is based on the official OECD and the European Commission data. The number of SMEs in the Czech Republic was approximately the same during the period considered. The number of SMEs in Slovakia, Hungary, and Poland has continuously increased. It is important to point out that the data includes all SMEs.

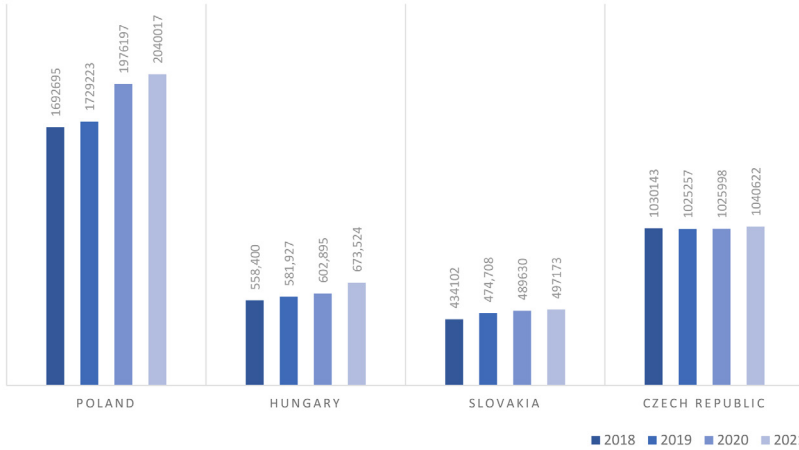

Figure 4. Evolution of the number of SMEs in the V4 countries
Source: Self-editing based on the OECD and the European Commission data

Figure 5 shows the number of people employed by SMEs in the period 2018-2021. Hungary, Slovakia, and the Czech Republic employed approximately the same number of people in the SME sector during the period under review, but a slight increase in employment can be detected. Poland, on the other hand, experienced a decline in 2019, while the number of employees employed by SMEs was the highest in 2021.

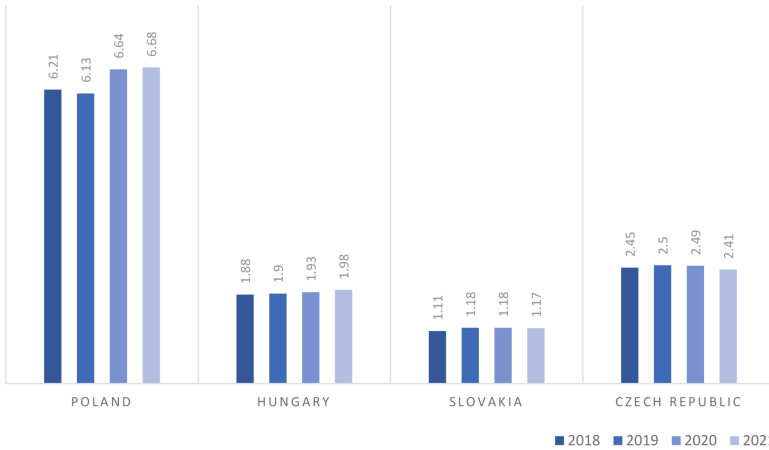

Figure 5. Number of employed in SMEs in V4 countries
Source: Own editing based on OECD and European Commission data.

To get a clear picture of the employment development in SMEs, we presented the number of people employed by SMEs from 2018 to 2021 (Figure 6). All 4 countries were found to have fewer people employed in the SME sector in 2019 compared to 2018, but in 2020 the ratio of employed was close to the ratio in 2018. Slovakia has the highest number of SMEs among the V4 countries. According to 2021 data, there was a further decline in Hungary, Poland, and the Czech Republic.

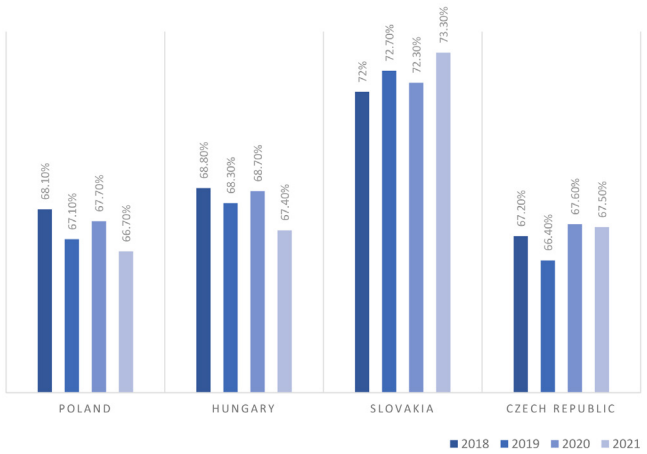

Figure 6. Evolution of the employed in SMEs
Source: Own editing based on OECD and the European Commission data

Figure 7 shows the added value of SMEs to the economy in the V4 countries for the period 2018-2021. In all four Visegrad countries, there has been a steady increase over the period under review. In Poland, the number of SMEs operating in the country had doubled during the reviewed period with a significant contribution to the country's GDP.

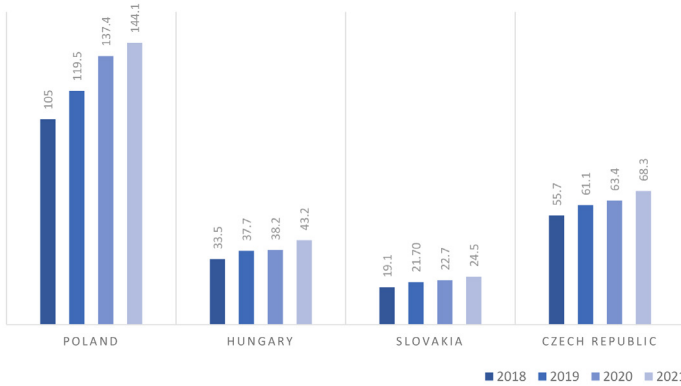

Figure 7. The added value of SMEs to the economy in V4 countries (billions, USD)
Source: Own editing based on OECD data

4. CONCLUSION

The COVID-19 pandemic emerging at the end of 2019 was not only decisive and devastating for China, but the pandemic also spread throughout the world having a significant impact on the economies. In addition to the problems affecting societies and health systems, the pandemic had an impact on the development of macroeconomic indicators as well.

This paper aimed to examine the macroeconomic changes caused by the COVID-19 pandemic in the economies of the Visegrad Four countries. The global pandemic situation had a significant impact also on the Visegrad countries. The Czech and Hungarian unemployment rates increased slightly between 2019 and 2021. The steady decline in the unemployment rate slowed in 2019 in all four countries. This may be due to the impact of COVID-19.

Employment indicators in all four countries have been rising steadily since 2015 but plateaued in 2019. In the Czech Republic, the employment rate indicated a decrease in 2020, but it bounced back in 2021 to the level measured in 2019. Hungarian employment was not adversely affected by the COVID-19 pandemic, as there was a gradual increase in the development of employment until 2021. The development of the Hungarian and Czech GDP was not negatively affected by the pandemic, as it resulted in continuous growth. The Hungarian inflation rate indicated an increase between 2019 and 2020. In Poland, the inflation rate increased in 2021.

In all 4 Visegrad countries, the service sector contributes the most to the country's GDP. During the period under review, the services sector has become an increasing share of countries' GDP. In Hungary, the agricultural sector is the most important contributor to GDP, while in the Czech Republic, the growth of the services sector is the most characteristic. There was a decline in the industry sector in V4 countries from 2019 to 2021.

The volume of foreign direct investment in the Visegrad Four countries was different. Slovakia had the lowest amount of FDI influx during the period under review, while the Czech Republic had a steady decline in FDI. The development of the FDI influx in Hungary was balanced, while Poland experienced a record amount of FDI in 2021.

The number of SMEs in Hungary, Slovakia, and the Czech Republic was growing moderately but steadily, but Poland experienced the most significant growth in the number of SMEs in the reviewed period. The number of people employed by SMEs in the Visegrad Four countries was balanced, while the ratio of SMEs decreased in Hungary, Poland, and the Czech Republic during the pandemic. Slovakia was the only country among the V4, where the number of employed people increased in the SME sector in 2019. In the period 2018-2021, the amount of value added by SMEs to the economy increased in the Visegrad Four countries.

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