sciendo

Macro-economic evolutions during the COVID-19 health crisis – large versus small European countries

Adrian Tudor TUDORACHE
Bucharest University of Economic Studies, Bucharest, Romania,
tudortudorache1993@gmail.com

Luminița NICOLESCU *
Bucharest University of Economic Studies, Bucharest, Romania,
**Corresponding author, luminicolescu@yahoo.com*

Abstract. *The COVID-19 crisis affected the global economy at unprecedented and unexpected levels. Practitioners and researchers are concerned about the economic consequences of the crisis and analyses of the economic impacts of the health crisis are required. The present paper had as main objective to analyze the economic evolution of European countries during the main years of the COVID-19 pandemics, respectively 2020 and 2021. The methodology used is based on descriptive statistics for a few macroeconomic indicators and for the evolution of the COVID-19 cases and also on statistics based on correlation between these indicators. The European countries were categorized in four groups according to geographical region and size and a few countries were selected for analysis from each group. The research revealed that the impact of the COVID-19 outbreak was large in all analyzed economies in respect to GDP evolution. Inflation seemed to be highly affected by the COVID-19 outbreak, both in terms of evolution of the indicator with increases in all countries, but also in terms of correlation with the number of COVID-19 cases in the case of Western European countries. CEE countries were more affected by the COVID-19 crisis in terms of inflation, compared to Western European countries.*

Keywords: COVID-19 crisis, economic impact, European countries.

Introduction

The COVID-19 health crisis is a phenomenon that had unprecedented and unexpected effects on the whole world. Researchers and practitioners are preoccupied by the economic impact of the crisis (Bremmer, 2020; Manyika, 2020) and about what will happen after the COVID-19 crisis ends. Being a current topic with a high importance for the future it became more and more debated in the literature. Different papers analyze the impact of the crisis at a general level (Ibn-Mohammed et al., 2021), while others emphasize the impact of the COVID-19 outbreak on specific industries, such as the auto industry (Belhadi et al., 2021) or the airlines industry (Amankwah-Amoah et al., 2021). There are also papers that look at the future and try to depict how the world will look like after the COVID crisis would have passed (Buscher et al., 2021; Rebelo, 2020; Sneader & Singhal, 2021; Tudorache & Nicolescu, 2021).

The present paper had as main objective to analyze the economic evolution in European economies during the COVID-19 crisis, with a focus on main macro-level aspects. In order to reach this objective, the paper is organized as follows: the next section includes aspects presented in the literature about the COVID-19 crisis and its effects; this is followed by the methodology section; the fourth section analyzes the evolution of macrolevel indicators in selected European countries during the main years of the COVID-19 health outbreak 2020 and 2021; the paper ends with the conclusion.

DOI: 10.2478/picbe-2022-0099
© 2022 A. T. Tudorache; L. Nicolescu, published by Sciendo.
This work is licensed under the Creative Commons Attribution 4.0 License.

Aspects presented in the literature

There are authors (Bremmer, 2020; Manyika, 2020) who consider that the COVID-19 health crisis has an impact on both economies and societies and that this impact manifests at multiple levels. The levels at which the economic effects of the health crisis manifest are: world level, national level, industry level, company level and individual level (Ibn-Mohammed et al., 2021; Belhadi et al., 2021). Different authors discuss such effects at the different levels presented.

The economic impact on both the global economies and on national economies is also profound. Also, specialists agree that the COVID-19 crisis determined a global recession (Aramayo & Vokoun, 2020; Gruszczynski, 2020). This manifests at the level of the global economy, but also at the level of the economies of countries.

At a global level the disruption of the global supply chains took place at the beginning of the health crisis (Garofali, 2020), mainly because many production processes are globally integrated and systems of distribution are also global (Gruszczynski, 2020). Therefore, during the crisis, numerous companies had an increased risk of disruption when they were dependent on foreign companies in their supplies and consequently outsourcing proved to be riskier as compared to the pre-Coronavirus period (Zahra, 2021). At the same time, at the beginning of the health crisis, international trade also declined, mainly due to lockdowns decided by governments, due to the disruption in international transportation and also due to the protective measures adopted by countries (exports and imports restrictions) for necessity products (medical supplies, food and hygiene products) (Aramayo & Vokoun, 2020) that were in shortage in that period.

At country level, as an effect of the COVID-19 crisis, production declined, due to a decline in demand and in the purchasing power of people who have lost their jobs (Aramayo & Vokoun, 2020). Also many people became during this time more cautious when spending due to future uncertainty. The consequences were seen in the decline of economies.

The effects of the COVID-19 crisis were different from one industry to another, with a number of industries being negatively affected, while others were positively affected. Among the negatively affected industries were: personal care services (cosmetics and hair salons), restaurants and bars, tourism, travelling, air transport and airlines, places of entertainment, such as theaters, concerts, cinemas, real estate industry (Ibn-Mohammed et al., 2021; Zahra, 2021). Among the industries for which the demand was high during the Corona crisis are: e-commerce (on-line shopping increased even in countries that were more cautions with on line shopping, like Germany, Romania or Switzerland) (Sneader & Singhal, 2021, p. 6); the information technology sector due to the move towards tele-working, tele-health, e-learning. Also IT services, cybersecurity were in high demand (Zahra, 2021); the medical equipment suppliers and sanitary products producers were also in high demand and sales increased during the health crisis (Zahra, 2021).

At company level effects were also tremendous. Many companies in all countries, especially small and medium sized companies went bankrupt (Amankwah-Amoah et al., 2021). Other businesses needed to adjust their operating modes due to both new legislative norms and necessity: new health and safety measures (distancing and sanitizing); introduction of remote working for their staff; the increased use of digital technologies at work (Zahra, 2021).

As time passes by, and the COVID-19 health crisis still continues (as of February 2022), it is of interest to revisit how different aspects of the economic life have evolved over this period. In this context, it is of high interest to analyze macrolevel evolutions, as the activity of all other economic actors (companies and individuals) highly depends on what happens at the macrolevel in the economy.

Methodology

The present paper has the general purpose to characterize the evolution of the economies of European countries during the COVID-19 crisis. In order to do this, the paper has two main objectives: a) to analyze the evolution of a series of macrolevel aspects in European countries and b) to compare the evolution of countries grouped based on two criteria, namely the European geographical region and the size of the country.

The macro-level indicators considered to be the most suitable to characterize an economy are: the GDP (in terms of its change), unemployment and inflation. Data between January 2019 (before the COVID-19 crisis) and December 2021 was collected for each of these indicators, the GDP being measured quarterly and the unemployment and the inflation being measured monthly.

Also monthly data about the COVID-19 number of cases was collected for the period January 2020 – December 2021.

Countries in Europe have been grouped according to the geographical region in: Central and Eastern European (CEE) countries and Western European countries and according to size of the country in: large countries (with over 10 million inhabitants) and small countries (with less than 10 million inhabitants). Four groups of countries were therefore analyzed: large CEE countries with over 10 mill. inhabitants, small CEE with less than 10 mill. inhabitants, large Western European countries with more than 10 mill. inhabitants and small Western European countries with less than 10 mill. inhabitants. In each group the first three countries (as size) were considered, with the exception of the group of large Western European countries in which five countries were considered. Table 1 presents the selected countries and their populations.

The research method is based on descriptive statistics, as for each macroindicator the evolution in time was presented and analyzed in the period January 2019 – December 2021, with year 2019 being the year before the COVID-19 crisis and years 2020 and 2021 being the years of the COVID-19 crisis. The economic data was collected from the Eurostat interactive database, the Recovery Dashboard and the data about the COVID-19 cases was collected from European Centre for Disease Prevention and Control of EU.

Table 1. European countries included in sample and their population

	Large Western European countries > 10 mill. inh.					**Small Western European countries < 10 mill. inh.**		
Countries	**FR**	**DE**	**IT**	**ES**	**UK**	**AU**	**IE**	**CH**
Population (2020) (thousands)	65,273,5	83,783,9	60,461,8	46,754,7	67,886,0	9,006,3	4,937,7	8,654,6
	Large CEE countries > 10 mill. inh.					**Small CEE countries < 10 mill. inh.**		
Countries	**CZ**	**PL**	**RO**	**-**	**-**	**BG**	**HU**	**SK**
Population (2020) (thousands)	10,708,9	37,846,6	19,237,6			6,948,4	9,660,3	5,459,6

Note: CZ - Czech Republic; PL – Poland; RO – Romania; BG – Bulgaria; HU – Hungary; SK – Slovakia; FR – France; DE – Germany; IT – Italy; ES – Spain; UK – United Kingdom; AU – Austria; IE – Ireland; CH - Switzerland

Source: Worldometer.

A correlation analysis was conducted for one country in each of the four groups of countries, as illustrative case studies to analyze the existence of a linear relationship between the evolution

of the COVID-19 cases and the evolution of the main macroindicators analyzed. In order to do this the number of COVID-19 cases per 1000 inhabitants was calculated for each month in the period 2020-2021. For this indicator, the Pearson correlation was tested for both inflation and unemployment.

Results and discussions

GDP

Prior to the start of the COVID-19 crisis, during year 2019, most CEE countries had positive growth rates of the quarterly GDP (one exception is Bulgaria), while the Western European countries registered fluctuating situations with both increases and decreases of the quarterly GDP.

Once the COVID-19 crisis started in the first quarter of 2020, all countries except Poland and Romania registered decreases of their quarterly GDPs, with an average EU decrease of -3.1%. The second quarter of 2020, the period when most countries of the world faced lockdowns, encountered large levels of decrease in the quarterly GDP of the countries, with an EU average decrease of -11.3%. The largest decreases were encountered in the large countries (both from Western Europe and CEE) that had two digits negative growths of the quarterly GDP, as opposed to the smaller countries (less than 10 mill. inhabitants) were decreases had single digits figures. In the second quarter of 2020, the countries where the decrease was higher than the EU average decrease were: Spain was the highest decrease of the quarterly GDP (of -17.7%), followed by Hungary (-14.4%) and France (-13.5%). The smallest decrease of the 2020 GDPQ2 was in Ireland (-3.3%). In the third quarter of 2020, countries started to recover, all having positive growth rates of their GDPs, with the countries that were most affected in the previous quarter, increasing the most (France +18.6% and Spain +16.8%). In the last quarter of 2020, countries had different evolutions, some with small increases in their GDPs (Czechia, Romania, Bulgaria, Hungary, Germany, Spain), while others with small decreases in their GDPs (Poland, Slovenia, France, Italy, Ireland). See Table 2 and Figure 1.

Year 2021, was the year when most European countries started to recover, as most of them had small, but positive growth rates of their GDPs all over the year. Only in the first quarter of 2021, there were some countries, mostly Western European countries (Germany, Spain, Austria, Switzerland) where the GDP decreased, only to recover later in the year.

To conclude, all countries had a similar evolution of the quarterly GDP in 2020, with a sharp decrease in the second quarter of the year, followed by a recovery. The GDP decrease was immediate after the health crisis start due to lockdowns and economic activity blockages in most countries. The larger countries seemed to be more affected than the smaller ones and the Western European countries were more affected than the Eastern European ones in terms of quarterly GDP change.

Year 2021 was a year rather for economic recovery with stable or slightly increasing GDPs in most of the studied European countries.

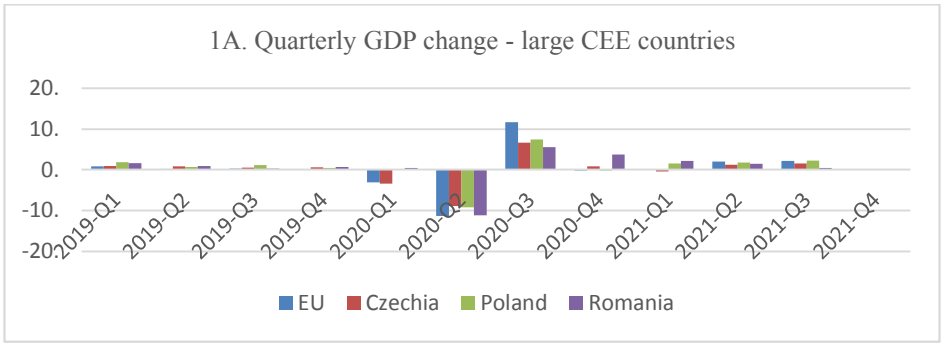
Table 2. Quarterly GDP change 2019Q1 – 2021Q4, European countries (%)

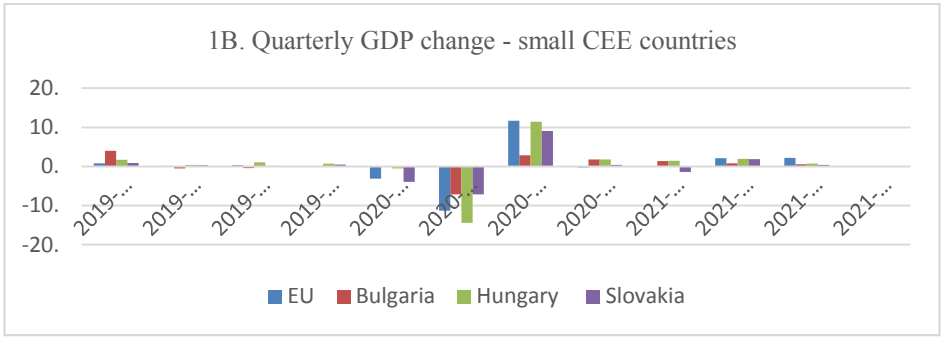
Quarterly GDP change		Large CEE countries > 10 mill. inh.			Small CEE countries < 10 mill. inh.			Large Western European countries > 10 mill. inh.					Small Western European countries < 10 mill. inh.		
Countries / Time period	EU	CZ	PL	RO	BG	HU	SK	FR	DE	IT	ES	UK	AU	IE	CH
2019-Q1	0.8	0.9	1.9	1.7	4.0	1.7	0.9	0.6	1.1	0.0	0.6	0.6	0.9	2.2	0.3
2019-Q2	0.2	0.8	0.7	0.9	-0.5	0.4	0.3	0.5	-0.5	0.2	0.4	0.1	-0.5	2.2	0.4
2019-Q3	0.3	0.5	1.1	0.3	-0.4	1.1	0.2	0.1	0.4	0.1	0.4	0.5	0.3	-0.4	0.5
2019-Q4	0.0	0.6	0.4	0.7	0.0	0.7	0.5	-0.4	-0.1	-0.4	0.4	0.0	-0.3	1.2	0.4
2020-Q1	-3.1	-3.4	0.1	0.4	-0.1	-0.5	-3.9	-5.7	-1.8	-5.7	-5.4	-3.0	-2.5	3.7	-1.5
2020-Q2	-11.3	-8.9	-9.2	-11.2	-7.2	-14.4	-7.2	-13.5	-10.0	-12.9	-17.7	-18.8	-11.4	-3.3	-6.2
2020-Q3	11.7	6.7	7.5	5.6	2.9	11.4	9.1	18.6	9.0	15.6	16.8	16.0	10.9	9.5	6.3
2020-Q4	-0.2	0.8	-0.2	3.8	1.8	1.8	0.4	-1.1	0.7	-1.6	0.2	:	-2.0	-4.7	-0.1
2021-Q1	0.0	-0.4	1.6	2.2	1.4	1.5	-1.4	0.1	-1.7	0.3	-0.7	:	-0.4	10.0	-0.1
2021-Q2	2.1	1.3	1.8	1.5	0.8	2.0	1.9	1.3	2.2	2.7	1.2	:	4.2	5.2	1.8
2021-Q3	2.2	1.6	2.3	0.4	0.6	0.7	0.4	3.1	1.7	2.6	2.6	:	3.8	0.9	1.7
2021-Q4	:		:	:	:	:	:	0.7	-0.7	:	2.0	:	:	:	:

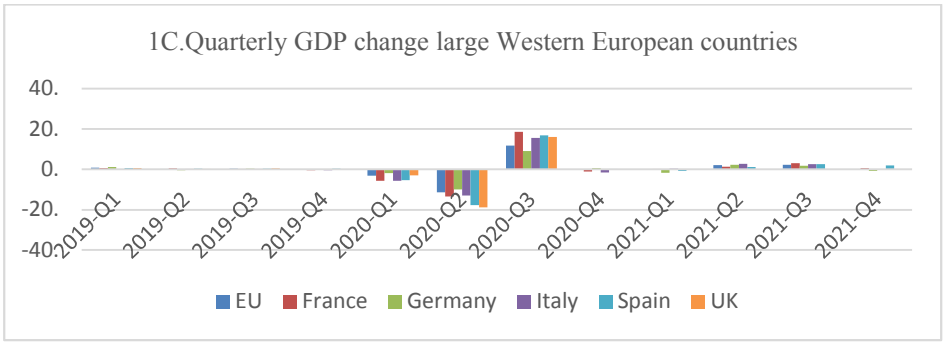
Note: CZ - Czech Republic; PL – Poland; RO – Romania; BG – Bulgaria; HU – Hungary; SK – Slovakia; FR – France; DE – Germany; IT – Italy; ES – Spain; UK – United Kingdom; AU – Austria; IE – Ireland; CH - Switzerland

Source: Eurostat.

DOI: 10.2478/picbe-2022-0099
© 2022 A. T. Tudorache; L. Nicolescu, published by Sciendo.
This work is licensed under the Creative Commons Attribution 4.0 License.







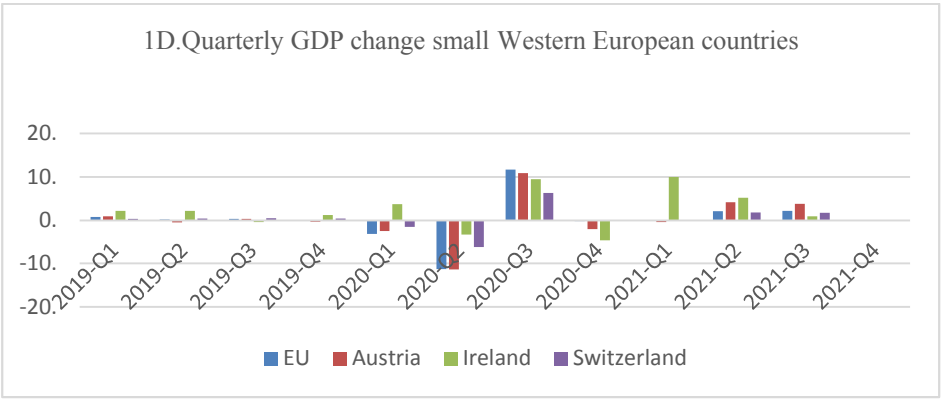


Figure 1. Quarterly GDP change in the period 2019Q1-2021Q4 (1A, 1B, 1C, 1D)

Source: Authors.

DOI: 10.2478/picbe-2022-0099
© 2022 A. T. Tudorache; L. Nicolescu, published by Sciendo.
This work is licensed under the Creative Commons Attribution 4.0 License.

Unemployment

During year 2019, the average unemployment rate at EU level was situated between 6.6% and 7% with smaller than average unemployment rates in all Central and Eastern European countries analyzed and in some Western European countries. Countries with larger than European average unemployment rates were Spain, Italy and France. When the COVID-19 health crisis started, unemployment started to raise in all European countries with the average European unemployment rate peaking in the months of July-September 2020 (7.7%-7.8%). However, situations differed from one country to another with no particular trend at group level. In some large CEE countries unemployment continued to raise for a whole year (April 2020-April 2021) and only after that decreased (Czechia and Poland). In Romania for example, the unemployment rate started to decrease at the beginning of 2021. Among countries in CEE, Slovakia has known the highest unemployment rates during the COVID-19 crisis (up to 7%-7.2%). See Figure 2.

Large Western European countries had also various evolutions of unemployment. Germany peaked with a 4%-4.1% unemployment rate in the months of August-November 2021, approaching pre-COVID-19 levels of 3.1-3.3% at the end of 2021. Spain had very high unemployment rates of 16.2%-16.3% during July –December 2020, recovering to pre-COVID levels of 14.4% at the end of 2021.

Among the small Western European countries Austria was highly affected by the COVID-19 crisis in terms of unemployment with fluctuating unemployment rates, and with a recovery at the end of 2021 (5.3% unemployment rate in November 2021 as compared to 4.9% unemployment rate in January 20219).

Some of the countries with high unemployment rates are countries that have traditional strong tourism sectors (Spain, Italy, Austria), and countries that implemented high restrictions and lockdowns during the COVID-19 health crisis with strong decreases of the tourism sectors and possibly associated employees lay offs.

Inflation

Before the beginning of the health crisis, the average EU inflation ranged between 1.2% and 1.6%. The European countries with the highest inflation rates were Romania (3.2-4.4%) and Hungary (2.8- 4.7%) and the countries with the lower inflation rates were Ireland (0.6-1.7%) and Switzerland (0.1-1.1%). See Figure 3.

On average in EU, at the beginning of the health crisis inflation rates decreased in the year 2020 (0.2-0.9%), while starting with the beginning of year 2021, average inflation rates increased in EU reaching 5.3% in December 2021. Different countries had different evolutions as far as the inflation rates evolution is concerned. After the COVID-19 health crisis was launched, beginning April 2020 inflation had opposite evolution, depending on the countries. In some countries, inflation rates diminished, until negative rates. This was due to the fact that the economies were put on a standstill and the demand of goods and services decreased dramatically with consequences on the prices of goods and services that either remained the same or also decreased. Countries with diminishing prices at the beginning of the COVID-19 crisis were Italy (-0.3 until -1%), Spain (-0.3 until -0.9%), Ireland (-1 until -1.4%), Germany (-0.1 until -0.7%) and Switzerland (-0.1 until –1.4%). In 2021, inflation rates started to increase in these countries reaching and overepassing pre-crisi levels. In December 2021 inflation rates were: 5.7% in Germany, 4.2% in Italy, 6.6% in Spain, 5.7% in Ireland.

In other countries, inflation rates had increasing trends at the beginning of the health crisis (Poland and Czech Republic) (probably due to the shortage of certain goods) and inflation rates continued to grow in 2021.

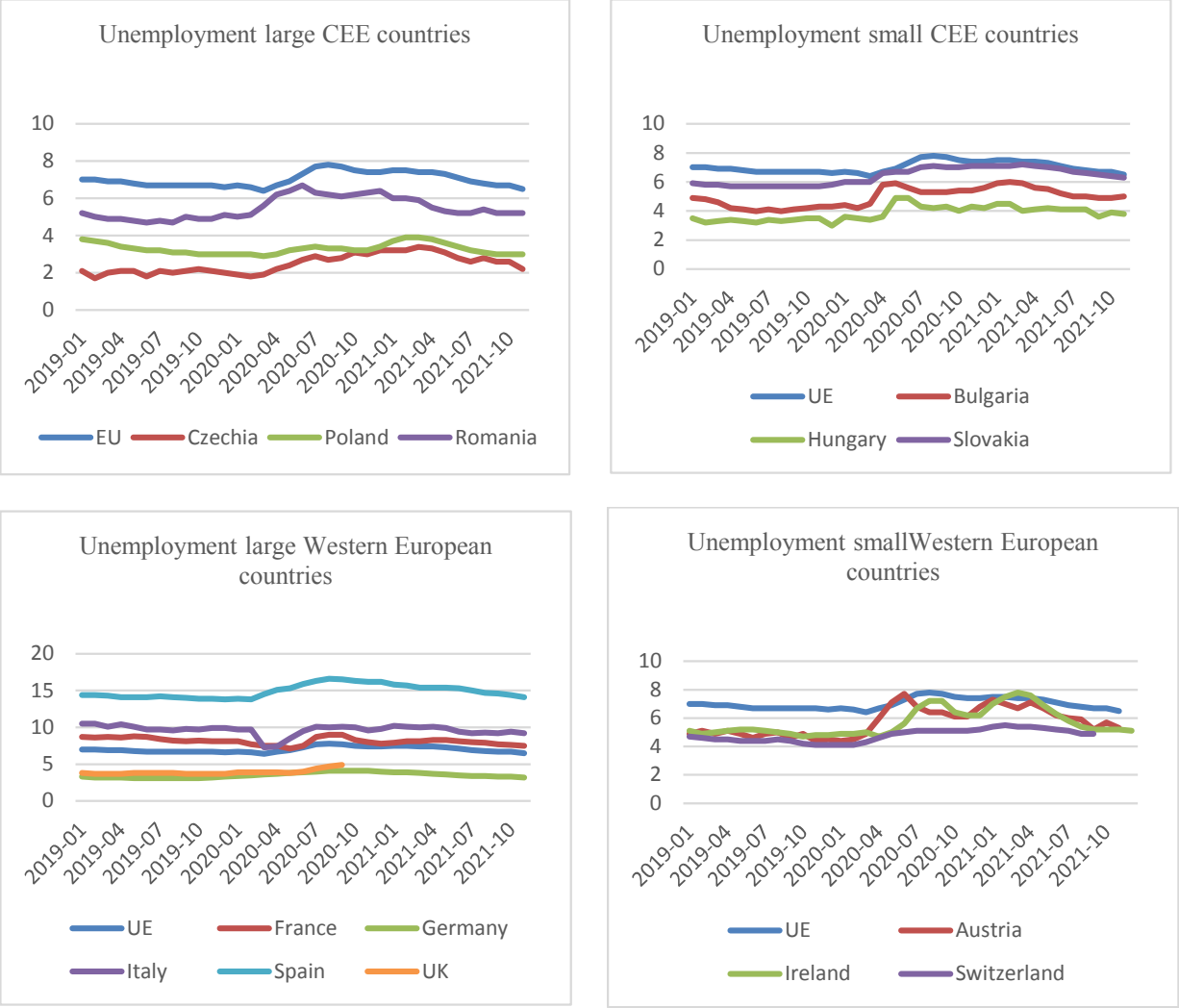


Figure 2. Monthly unemployment in the period 2019M1-2021M12 (2A, 2B, 2C, 2D)

Source: Authors.

All European countries had high inflation rates at the end of 2021 (December), with the highest inflation rates encountered in Poland (8%), in Hungary (7.4%), in Romania (6.7%), in Bulgaria and Spain (6.6%). The lowest inflation rates in December 2021 for the European countries studied were in Switzerland (1.3%) and Austria (3.8%).

COVID-19 cases

The evolution of the number of COVID-19 cases during 2020-2021 is analyzed, too. See Table 3 and Figure 4.

The number of COVID-19 cases appeared from the first month of 2020 in all large Western European countries, countries whose population travels more and were more prone of getting in contact with infected people. The number of cases increased in these countries in spite of the 2020, in spite of thee lock down measures taken.

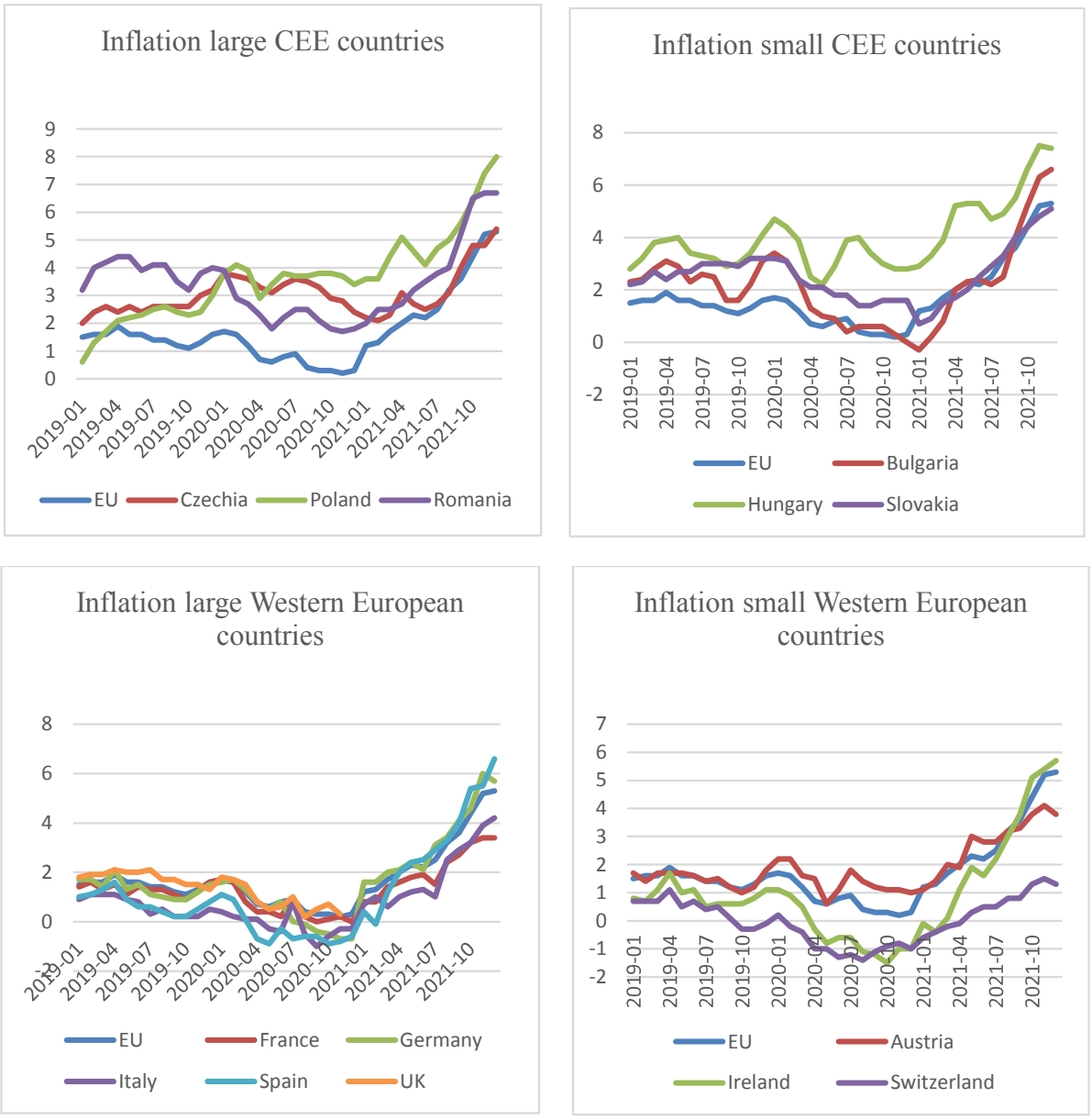


Figure 3. Monthly inflation in the period 2019M1-2021M12 (3A, 3B, 3C, 3D)

Source: Authors.

The number of cases increased in all the analyzed countries, all having the highest number of COVID-19 active cases during 2020 in the months of October, November and December 2020. Year 2021 debuted with different evolution from one country to another. In most CEE countries, the number of cases decreased for two months, only to increase again with a new wave of the Coronavirus.

Table 3. Cases of COVID-19 (Monthly) 2020M1 - 2021M12, European countries

	Large CEE countries			Small CEE countries			Large Western European (WE) countries					Small WE countries		
CountryMonths	CZ	PL	RO	BG	HU	SK	FR	DE	IT	ES	UK	AU	IE	CH
2020M1	0	0	0	0	0	0	6	14	2	2	4	0	0	0
2020M2	3	0	3	0	0	0	143	154	2153	115	72	12	0	24
2020M3	2823	1862	1903	346	444	348	40029	63681	102834	107561	29295	9184	2624	14250
2020M4	4970	11831	11491	1272	2586	1044	90384	100282	108249	118312	158458	6398	18881	15548
2020M5	1507	10091	6364	895	857	107	16106	17793	20264	19337	68613	1059	3484	957
2020M6	2347	10123	6809	2112	258	149	13584	12045	7034	9944	26988	982	449	755
2020M7	5166	12987	25781	7211	399	690	27460	16909	8162	52325	23400	3686	723	3927
2020M8	9797	19033	28647	3707	4222	2045	138024	34996	29456	217922	43571	7578	2960	7779
2020M9	27365	17478	34276	3592	13665	3371	232996	39494	39645	280916	81395	13417	4964	9369
2020M10	208820	174448	96862	18743	42704	38604	727054	172041	286700	441587	522737	45915	24195	54152
2020M11	234222	607733	208993	83135	116387	53747	933569	492910	905113	471520	624590	164993	13333	186160
2020M12	135332	317398	170931	70332	127151	99429	323323	582501	507319	227947	601823	87805	9081	122679
2021M1	313661	254894	109919	21234	52035	185732	600956	561172	501449	938382	1479297	60152	110418	86282
2021M2	252995	195885	74629	28088	64205	143839	497295	224118	378284	294311	343202	44406	23405	32312
2021M3	314303	736580	174664	105553	256947	119201	928155	448658	724427	185270	179971	98757	18196	53223
2021M4	228910	647161	147452	92448	221155	85824	801159	390287	581704	151798	139291	82433	14929	45699
2021M5	135332	317398	170931	70332	127151	99429	323323	582501	507319	227947	601823	87805	9081	122679
2021M6	153061	688382	145082	94620	190880	63760	1064422	631430	566268	262083	113508	92600	16034	67308
2021M7	41188	110428	29426	21121	33153	19879	488302	379129	239139	192822	86530	34610	15040	42789
2021M8	5430	7266	2934	3294	3504	3357	107762	46846	40501	105782	286378	5790	9587	7983
2021M9	6534	3442	2875	3539	1604	1414	366350	47177	103064	732013	1174952	9703	30814	16875
2021M10	76075	126503	455671	108670	53369	88463	171054	414608	114564	58498	1415848	99172	60917	40486
2021M11	366691	490815	118102	87593	222089	221100	436496	1204482	248341	140554	1117300	315266	114460	132817
2021M12	350560	612874	32997	59556	165560	177296	2663600	1402688	1505755	1678225	2329744	136835	268857	339543

Note: CZ - Czech Republic; PL – Poland; RO – Romania; BG – Bulgaria; HU – Hungary; SK – Slovakia; FR – France; DE – Germany; IT – Italy; ES – Spain; UK – United Kingdom; AU – Austria; IE – Ireland; CH - Switzerland
Source: Eurostat.

DOI: 10.2478/picbe-2022-0099
© 2022 A. T. Tudorache; L. Nicolescu, published by Sciendo.
This work is licensed under the Creative Commons Attribution 4.0 License.

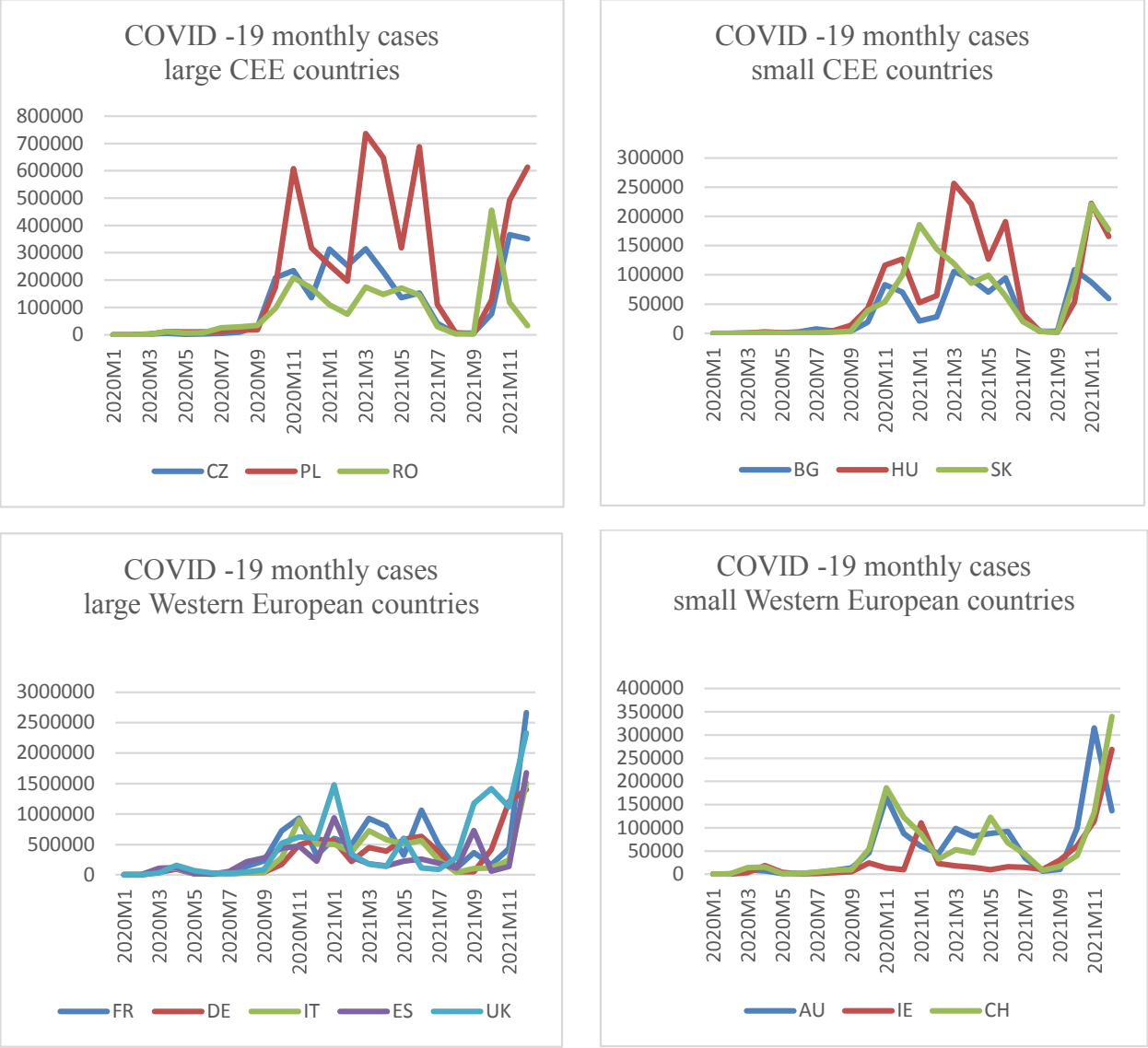


Figure 4. Monthly COVID-19 number of cases in the period 2020M1-2021M12 (4A, 4B, 4C, 4D)
Source: Authors.

Among Western European countries, decreases were encountered in Germany, Austria and Switzerland at the beginning of 2021, while in Spain, Italy, France and UK, the number of cases increased initially and then fluctuated depending on the effects of the vaccination (which was launched in the world at the beginning of 2021), but also on the other waves of the COVID-19.

During 2021, in all CEE countries there was a peak of the number of cases in March 202, followed by a decrease in the number of cases reaching a small number during the summer (August), only to increase again starting October 2021 when the Delta variant of the virus dominated wave 4 of the pandemic. In Western European countries, a peak in the number of cases was in the month of June 2021, with a similar decrease during the summer and a smaller number of cases in August –October 2021, only to massively increase in December 2021, when the

DOI: 10.2478/picbe-2022-0099
© 2022 A. T. Tudorache; L. Nicolescu, published by Sciendo.
This work is licensed under the Creative Commons Attribution 4.0 License.

Omicron variant of the virus arrived with the 5th wave of the pandemic and registered record values of the number of cases.

Correlations

For each of the four groups of countries, one country is chosen with the title of case study to analyze the extent to which the evolution of the macroeconomic indicators correlate with the evolution of the COVID-19 number of cases. See Table 4.

From the large CEE countries, Romania was analyzed from this perspective. The correlation between the number of COVID-19 cases per 1000 inhabitants with both inflation and unemployment was analyzed. It was noticed that in both cases the direct colleration is rather weak (under 30%), illustrating a linear relationship between variables that is not very strong.

Table 4. Correlation between the COVID-19 cases and macro level indicators

Countries	Pearson coefficient COVID-19 cases /1000 inh. with unemployment	Pearson coefficient COVID-19 cases /1000 inh. with inflation
Romania	-0.2014	0.252084
Bulgaria	0.147436	0.305496
Germany	-0.30417	0.58557
Austria	-0.11402	0.467907

Source: Authors' own research.

Bulgaria, as a small CEE country showed a very weak relationship between the number of COVID-19 cases per 1000 inhabitants and unemployment and weak relationship between those and its inflation during the period 2020-2021.

In both Western European countries, Germany and Austria, the correlation between the number of COVID-19 cases per 1000 inhabitants and inflation was moderate, illustrating that when the number of COVID-19 cases increase also inflation increase and the strength of this relationship is medium. At the same time the correlation between COVID-19 cases and unemployment in these countries was weak (Germany) and very weak (Austria). Very interestingly, the relationship even though weak proved to be indirect, suggesting that an increase in the number of COVID-19 cases moves unemployment in the opposite direction (decrease). This might be explained, by the fact that these countries adopted social protection measures during the pandemic, offering different types of financial support to companies and to individuals to help them get through the pandemics.

It was noticed that the economic evolution of countries during the COVID-19 outbreak was also dependent on pre-crisis economic conditions in the different analyzed countries, as they were analyzed and presented in other studies (Nicolescu et al., 2020; Nicolescu & Tudorache, 2020; Tudorache et al., 2015).

Conclusion

The COVID-19 health crisis had a huge impact on the social and economic life all over the world, determining a strong global economic recession. According to researchers economic impacts were encountered at all levels: global level, country level, industry level, business level and individual level.

This paper looked at economic evolutions in a selected number of European countries during the COVID-19 crisis. Some similar evolutions were encountered in large countries regardless of the region, and also some similar evolutions were encountered between countries that

belong to the same geographical region, irrespective of size. Among the main findings and conclusions are:

1) Countries were caught by the COVID-19 outbreak in different economic situations. Before the crisis, the Western European countries had stable GDPs, while CEE countries had growing GDPs (given their economic lagging behind the Western European region and efforts to diminish the gap). However, in terms of inflation this was higher in CEE countries as compared to Western European countries before the crisis. Unemployment varied between countries, and Western European countries had larger unemployment rates than CEE countries.

2) The evolution of the pandemic comprised a number of vawes that were encountered in all countries, but in different periods of time and with a certain time lag in-between waves.

3) The economic evolutions of the countries during the COVID-19 crisis were similar as tendencies, but were different in terms of punctual evolutions of certain macrolevel indicators. In all countries the GDP decreased at the beginning of the pandemic, but to a larger extent in large countries as compared to small countries. A recovery followed in all countries and in 2021 almost all countries had positive growth rates of GDP.

4) Unemployment started from different levels at the beginning of the health crisis. In most countries there were a few months in 2020 when there were encountered slight increases in unemployment, while there were some exceptions with unemployment decreasing during the health crisis (France, Italy) mainly due to the social protection measures taken by government. However, in all countries at the end of 2021 unemployment had similar levels as previously the health crisis period.

5) Inflation rates increased in all countries during the health crisis, with countries in CEE having higher inflation rate than countries in Western Europe.

6) The correlation between the number of COVID-19 cases and the different macro level indicators proved to be very weak for all countries, as far as unemployment is concerned. In respect to inflation, the correlation for the CEE countries seemed to be weak, while for Western European countries the correlation between the number of COVID-19 cases and inflation seemed to be moderate.

The paper contributed with an analysis of the evolution of economies in European countries during the main years of the Coronavirus pandemic, respectively 2020 and 2021 and with a comparison between groups of European countries. Differences were encountered in terms of both COVID-19 evolution of the pandemic, as well as the economic evolution of countries, between CEE countries and Western European countries on the one hand and between small and large countries, on the other hand.

References

Aramayo, L. G. D. & Vokoun M. (2020). Covid-19 and international trade. In Gardini, G. L. (Ed). *The world before and after Covid-19*, European Institute of International Studies (EIIS), Stockholm, 57-61.

Amankwah-Amoah, J., Khan, Z. & Osabutey, E. L. C. (2021). COVID-19 and business renewal: Lessons and insights from the global airline industry. *International Business Review*, *30*(3), [101802]. https://doi.org/10.1016/j.ibusrev.2021.101802

Belhadi, A., Kamble, S., Jabbour, C.J.C., Gunasekaran, A., Ndubisi, N.O. & Venkatesh, M. (2021). Manufacturing and service supply chain resilience to the COVID-19 outbreak: Lessons learned from the automobile and airline industries. *Technological Forecasting and Social Change*, 163, [120447]. doi: 10.1016/j.techfore.2020.120447.

Bremmer, I. (2020). How will the world be different after COVID-19?, *Finance & Development*, June 2020. Retrieved from https://www.imf.org/external/pubs/ft/fandd/2020/06/how-will-the-world-be-different-after-COVID-19.htm

European Centre for Disease Prevention and Control of EU. https://www.ecdc.europa.eu/en/cases2019-ncov-eueea

Eurostat. interactive database, https://ec.europa.eu/eurostat/cache/recovery-dashboard/

Ibn-Mohammed, T., Mustapha, K.B., Godsell, J., Adamu, Z., Babatunde, K.A., Akintade, D.D., Acquaye, A., Fujii, H., Ndiaye, M.M., Yamoah, F.A. & Koh, S.C.I. (2021). A critical analysis of the impacts of COVID-19 on the global economy and the ecosystems and opportunities for circular economy strategies. *Resources, Conservation & Recycling*, 164, [105169], doi: 10.1016/j.resconrec.2020.105169.

Garofali, A. (2020). International economic outlook in times of Covid-19 - A SWOT analysis-. In Gardini, G. L. (Ed). *The world before and after Covid-19*, European Institute of International Studies (EIIS), Stockholm, 57-61.

Gruszczynski, L. (2020). The COVID-19 Pandemic and International Trade: Temporary Turbulence or Paradigm Shift?. *European Journal of Risk Regulation*, 11, 337-342. Manyika, J. (2020). How will the world be different after COVID-19?, *Finance & Development*, June 2020. Retrieved from https://www.imf.org/external/pubs/ft/fandd/2020/06/how-will-the-world-be-different-after-COVID-19.htm

Nicolescu L., Tudorache F.G., Androniceanu A. (2020). Performance-risk analysis on mutual funds versus stock exchanges in young financial markets. *Journal of International Studies*, 13(1), 279-294.

Nicolescu L., & Tudorache F.G. (2020). Investment behaviour in mutual funds: is it a knowledge-based decision?, *Kybernetes*, 50(10), 2726-2752, doi: https://doi.org/10.1108/K-03-2020-0124.

Rebelo, S. (2020). How will the world be different after COVID-19?, *Finance & Development*, June 2020. Retrieved from https://www.imf.org/external/pubs/ft/fandd/2020/06/how-will-the-world-be-different-after-COVID-19.htm

Sneader, K. & Singhal, S. (2021). *The next normal arrives: Trends that will define 2021- and beyond*. McKinsey&Company. Retrieved from https://www.mckinsey.com/featured-insights/leadership/the-next-normal-arrives-trends-that-will-define-2021-and-beyond Tudorache, F.G., Nicolescu, L., & Lupu, R. (2015). Evolution of mutual funds in Romania: performances and risks. *Romanian Journal of Economic Forecasting*, 18(4), 180-197.

Tudorache A.T. & Nicolescu L. (2021). Opinions on the economic impact of the COVID -19 crisis and the world after – an international perspective. Proceedings of the 15th International Conference on Business Excellence 2021, 873-887, DOI: 10.2478/picbe-2021-0080.

Zahra, S.A. (2021). International entrepreneurship in the post Covid world. *Journal of World Business*, 56(1), [101143].

Worldometer, https://www.worldometers.info/population/countries-in-europe-by-population/