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The Impact of the COVID-19 Pandemic on the European Union Economy – Selected Issues*

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Abstract

The COVID-19 pandemic hit the world economy in 2020. The shock has been reflected in macroeconomic condition of national economies and in the intensity and structure of international relations. The main objective of the paper is to study and assess the impact of the COVID-19 pandemic on the European Union economy, and in particular to evaluate the economic situation in the European Union during the first year of the coronavirus pandemic. The parallel objective is to describe and assess the EU response to the pandemic. The research was conducted with the application of statistical data taken from EUROSTAT database and provided by Central Statistical Office. The following research methods were used: literature studies, critical thinking, documents examination, analysis and logical construction, comparative analysis of quantitative data. The conducted research and analysis made it possible to confirm hypothesis according to which the short-term economic consequences of the COVID-19 pandemic are visible both at the level of the European Union and in relation to its individual Member States, however, the scale of negative phenomena is very diversified. The negative economic consequences of the COVID-19 pandemic were reflected in the decline in GDP, reduction of industrial production and production in construction, decline in the value added in services, deterioration of the situation on the labor market, as well as the deterioration of public finance. The EU response to the pandemic evolved significantly over time.

Keywords: European Union, COVID-19 Pandemic, Economy, Policy Response.

Introduction

The COVID-19 pandemic is considered the greatest challenge for the world economy after the World War II (Schwab and Malleret, 2020). The pandemic began in March 2020. Since then it has affected 220 economies and territories around the world. Almost 218 million cases and more than 4.5 million deaths were confirmed till August 30, 2021 (Worldometer, 2021). The pandemic caused several lockdowns. The introduction of the lockdown was necessary to reduce the number of infections and deaths and to buy time for healthcare system. On the other hand, however, the lockdowns adversely affected economies, labor markets, societies and individuals. It is believed that the COVID-19 pandemic will strongly affect (Rapoza, 2020; Richter, 2020).

The following research questions were formulated: 1. What was the short-term impact of COVID-19 on the EU economy? 2. How was the impact of COVID-19 distributed among EU Member States? 3. What was the EU reaction to the COVID-19 pandemic?

The main aim of the article is to identify and evaluate the impact of the COVID-19 pandemic on the European Union (EU). The parallel objective is to describe the EU response to the COVID-19 pandemic. The situation in the EU at the time of the pandemic was studied in regard to GDP dynamics, unemployment rate, industrial production dynamics, production in construction dynamics, dynamics of value added in services, GDP per capita, deficit and debt of the general government

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sector. Selected elements of the EU reaction for the pandemic were described, in particular: "A Roadmap for Recovery Towards a More Resilient, Sustainable and Fair Europe", New Generation EU, EU Strategy for COVID-19 Vaccines and A Digital Green Certificate. Statistical information taken from EUROSTAT database and provided by Central Statistical Office was used. The research was conducted with the application of the following research methods: literature studies, critical thinking, documents examination, analysis and logical construction, comparative analysis of quantitative data. The following research hypothesis was adopted and verified: *The short-term economic consequences of the COVID-19 pandemic are visible both at the level of the European Union and in relation to its individual Member States, however, the scale of negative phenomena is very diversified*.

The COVID-19 pandemic as a challenge for the contemporary world economy

The first SARS-CoV-2 infections were reported in Wuhan, the capital city of the Chinese Province of Hubei in late 2019 – the beginning of the 2020. Several cases of the novel coronavirus were reported in Thailand and Japan on January 20, 2020. The situation was very dynamic, more and more cases were noted in more and more countries around the world. That's why the World Health Organization (WHO) issued Global Health Emergency on January 31, 2020. Soon after, on March 31, 2020 the situation got so dangerous that the WHO declared COVID-19 a pandemic (AJMC, 2021). Till August 30, 2021 almost 218 million cases and over 4.5 million deaths were reported in 220 countries and territories (Worldometer, 2021).

The development of vaccines that protect from SARS-CoV-2 by several teams has given some hope in regard to bringing the COVID-19 pandemic to an end. In order to reach herd immunity, it is necessary to vaccinate a large share of the World's population (according to some estimates 80 per cent, according to others – as much 90 per cent). Till the end of July 2021 4.01 billion doses of vaccines have been administered in the World. 14.2% of the World's population have been fully vaccinated and another 13.6% were only partly vaccinated against COVID-19 till the end of July 2021. There are, however, huge disparities among countries (see table 1). The biggest problem is extremely low level of vaccination in low-income countries. Till the end of July 2021 only 1.1% of population in low-income countries have received at least one dose of the vaccine. In some low-income countries, less than 1% of people have so far (e.g. Guinea-Bissau, Liberia, Malawi, Niger). Having in mind, that the SARS-CoV-2 knows no borders, it is of vital importance to share the vaccines with the developing countries and speed up the vaccination process around the World. The WHO has called for vaccine equity. The International Monetary Fund (IMF) and the World Bank are supposed to strongly support financially the process of defeating the pandemic (Georgieva, Ghebreyesus, Malpass, Okonjo-Iweala, 2021).

The situation became much more complicated due to the spread of new variants of the SARS-CoV-2. The so called British / English variant, the Alpha variant was responsible for the third wave of the pandemic which began in December 2020 in the United Kingdom. Two months later the British mutation of the SARS-CoV-2 was reported in 125 countries and territories. It became a dominant one in Europe several months later. The Indian / the Delta variant of the SARS-CoV-2 is considered the greatest threat in the world's efforts to contain COVID-19 in mid 2021. The Delta variant replicates faster, it is more transmissible (to be precise it is 50-60 per cent more transmissible than the Alpha variant which was 50-60 per cent more transmissible than the original strain of the COVID-19). Till June 25, 2021 the Delta variant has spread to 92 countries. The Delta variant is extremely dangerous due to the fact that mutations in the Delta variant make it replicate faster and evade the body's immunity mechanism. [DTE STAFF, 2021]. The Lambda variant / the Peruvian variant is another variant to mention here. It was reported in Peru in December 2020 for the first time and it spread in at least 30 countries till the beginning of July 2021. It is even more transmissible than the Delta variant of the SARS-CoV-2, which makes it a variant of concern for the WHO (Cookson and Long, 2021; PAP, 2021).

Table 1: Share of people vaccinated against COVID-19 in selected countries (as of June 29, 2021)

Country / Economy	Share of people fully vaccinated against COVID-19	Share of people partly vaccinated against COVID-19
World	*14.20%*	*13.60%*
European Union	*47.72%*	*10.57%*
United Kingdom	55.40%	13.37%
Chile	63.13%	8.91%
Uruguay	63.03%	10.47%
Israel	61.76%	4.97%
Bahrain	61.69%	3.29%
Hungary	56.09%	2.00%
Italy	50.41%	12.22%

Germany	50.56%	2.00%
United States	48.91%	7.83%
Spain*	56.51%	17.00%
Lithuania	45.08%	5.80%
France**	45.26%	13.80%
Poland	45.51%	2.56%
Estonia	36.95%	10.58%
Latvia	35.77%	4.43%
Turkey	30.31%	17.51%
Serbia	39.44%	2.03%
Brazil	18.59%	29.53%
Mexico	19.28%	14.99%
India	7.11%	18.43%
Russia	16.21%	8.16%
Guinea**	2.18%	1.73%
Guatemala*	1.76%	6.96%
Guinea-Bissau***	0.06%	1.16%
Honduras****	1.96%	13.31%
Iraq*****	0.97%	0.77%
Kenya*	1.18%	0.78%
Kyrgyzstan	1.75%	4.44%
Liberia******	0.18%	1.53%
Malawi*	0.30%	1.74%
Mozambique****	1.02%	0.17%
Niger*****	0.25%	1.25%

** - 27 July, 2021; ** - 25 July, 2021; *** - 19 July, 2021; **** - 26 July, 2021; ***** - 5 July, 2021, ****** - 12 July, 2021*
Source: Mathieu, Ritchie, Ortiz-Ospina et al. (2021).

Economic situation in the European Union during the first year of the COVID-19 pandemic

In order to identify and evaluate changes in economic situation in the EU economies during the first pandemic year, GDP dynamics in 2020 was studied and compared to GDP dynamics in 2019 (table 2). In 2020 GDP of the EU was reduced by 6.1%, while in 2019 a 1.5% increase was noted. Almost all EU Member States experienced a reduction in GDP in 2020 (Ireland was the only exception; in the case of Ireland a 3.4% rise of GDP was observed). Three EU Member States with the greatest reduction of GDP in 2020 were: Spain (GDP reduction of as much as 10.8%), Italy (GDP reduction of 8.9%) and Greece (GDP reduction of 8.2%). A comparatively low reduction of GDP was noted in the case of Lithuania (GDP drop amounted to 0.9%), Luxembourg (GDP drop equaled 1.3%), Poland and Denmark (GDP was reduced by 2.7%).

Table 2: GDP dynamics (previous year = 100)

Economy	2020	2019	Economy	2020	2019
European Union 27	93.9	101.5	Hungary	95.0	104.9
Austria	93.7	101.6	Ireland	103.4	105.5
Belgium	93.7	101.4	Italy	91.1	100.3
Bulgaria	95.8	103.4	Lithuania	99.1	103.9
Cyprus	94.9	103.2	Luxemburg	98.7	102.3
Czechia	94.4	102.6	Latvia	96.4	102.2
Germany	95.2	100.6	Malta	92.2	104.7
Denmark	97.3	102.4	Netherlands	96.3	101.8
Estonia	97.1	104.3	Poland	97.3	104.1
Greece	91.8	101.9	Portugal	92.4	102.2
Spain	89.2	102.0	Romania	96.1	104.1
Finland	97.2	101.1	Sweden	97.2	101.2

France	91.9	101.5	Slovenia	94.5	102.4
Croatia	92.0	102.9	Slovakia	95.2	102.4

Source: Central Statistical Office (2021, 2020), Eurostat (2021).

The COVID-19 pandemic was also reflected in industrial production dynamics and production in construction dynamics in 2020 (table 3). In 2020 industrial production in the EU was reduced by 8% and production in construction in the EU was reduced by 4.9%. Again, there were considerable disparities among the EU member States. Industrial production in Ireland increased by 4.2% in 2020, while in other EU Member States it was reduced. The greatest decline of industrial production was noted in the following countries: Italy (industrial production was reduced by 11.4%), France (industrial production was reduced by 11.1%) and Germany (industrial production was reduced by 10.2%). In the case the following EU Member States, the decline in industrial production was much smaller: it amounted to 0.3% in Malta, 1.7% in Latvia and 2.1% in Poland. When it comes to the dynamics of production in construction, disparities among the EU Member States were even bigger. There were seven EU member States with an increase of production in construction in 2020: Romania, Malta, Latvia, Croatia, Germany, Denmark and Finland. Other EU Member States experienced reduction of production in construction. The greatest increase was recorded in Romania (+16%) and Malta (+10.6%). The biggest decline of production in construction was noted in France (-15%), Spain (-12.5%) and Slovakia (-11.4%).

Table 3: Industrial production and production in construction in 2020 (2019=100, constant prices)

Economy	Industrial production	Production in construction	Economy	Industrial production	Production in construction
European Union 27	92.0	95.1	Hungary	92.9	90.8
Austria	93.7	96.0	Ireland	104.2	90.7
Belgium	96.2	91.8	Italy	88.6	91.9
Bulgaria	93.9	94.5	Lithuania	97.7	98.1
Cyprus	92.7	92.5	Luxemburg	89.3	92.1
Czechia	92.8	93.9	Latvia	98.3	102.7
Germany	89.8	102.9	Malta	99.7	110.6
Denmark	94.1	102.5	Netherlands	95.8	99.7
Estonia	94.0	93.9	Poland	97.9	95.7
Greece	97.8	90.4	Portugal	92.7	96.4
Spain	90.2	87.5	Romania	90.7	116.0
Finland	97.0	100.1	Sweden	95.5	99.2
France	88.9	85.0	Slovenia	93.8	99.3
Croatia	96.6	103.8	Slovakia	90.8	88.6

Source: Central Statistical Office (2021), Eurostat (2021).

The introduced lockdowns did affect service sector to a large extend. Thus, the short-term implications of the coronavirus pandemic were particularly strong for the service sector. Annual % growth of value added in services in the EU27 countries in 2020 and 2019 is presented in table 4. 25 EU countries noted reduction of value added in services in 2020 (statistical information for Malta and Romania was unavailable), while in 2019 26 EU economies experienced increase of value added in services (data for Malta was not available). The largest reduction in value added in the services sector in 2020 was recorded in Spain (-11.16%). The decline in the value added of services in 2020 was also very large in: Greece (-9.74%), Croatia (-8.58%) and Italy (-8.13%). On the other hand, however, Luxemburg, Slovakia, Lithuania, Estonia experienced only Estonia has experienced only a slight reduction in value added in the service sector (annual % change of value added in services amounted to: -0.15% in Luxembourg, -0.23% in Slovakia, -1.82% in Lithuania and -2.17% in Estonia). Differentiated outcomes of service sectors in EU27 economies in 2020 gave some explanation for substantial disparities in economic performance in UE countries during the first year of the COVID-19 pandemic.

Table 4: Value added in services in 2019 and 2020 – annual % growth

Economy	2020	2019	Economy	2020	2019
European Union 27	l.d.	l.d.	Hungary	-4.79	+4.95
Austria	-6.62	+1.42	Ireland	-4.48	+6.51
Belgium	-6.45	+1.63	Italy	-8.13	+0.42
Bulgaria	-4.01	+4.57	Lithuania	-1.82	+3.98
Cyprus	-4.45	+2.57	Luxemburg	-0.15	+2.38
Czechia	-5.01	+2.43	Latvia	-4.77	+2.18
Germany	-4.18	+1.75	Malta	l.d.	l.d.
Denmark	-3.20	+2.65	Netherlands	-4.43	+1.76
Estonia	-2.17	+7.43	Poland	-4.42	+5.72
Greece	-9.74	+1.27	Portugal	-6.58	+2.98
Spain	-11.16	+2.25	Romania	l.d.	+5.99
Finland	-3.02	+1.49	Sweden	-3.13	+1.52
France	-7.25	+1.73	Slovenia	-5.42	+2.27
Croatia	-8.58	+2.67	Slovakia	-0.23	+3.39

Source: World Bank (2021b).

The pandemic resulted in worsening the situation in the market of labour of the EU. Table 5 presents unemployment rate in EU Member States in 2020 and 2019. Unemployment rate in the EU amounted to 7.1% in 2020, while in 2019 it was 6.7%. In all EU Member States but Greece and Italy unemployment rate rose in 2020 in comparison to 2019. The highest unemployment rate in both 2020 and 2019 was observed in Greece (it amounted to 17.3% in 2019 and 16.3% in 2020). The second highest unemployment rate was recorded in Spain (14.1% in 2019 and 15.5% in 2020). In the case of Italy unemployment rate equalled 10% in 2019 and 9.2% in 2020. The lowest unemployment rate in 2020 was noted in the following EU Member States: Czechia (2.8%), Germany (3.8%) and Poland (3.8%).

Table 5: Unemployment rate (%)

Economy	2020	2019	Economy	2020	2019
European Union 27	7.1	6.7	Hungary	4.3	3.4
Austria	5.4	4.5	Ireland	5.7	5.0
Belgium	5.6	5.4	Italy	9.2	10.0
Bulgaria	5.1	4.2	Lithuania	8.5	6.3
Cyprus	7.6	7.1	Luxemburg	6.8	5.6
Czechia	2.6	2.0	Latvia	8.1	6.3
Germany	3.8	3.2	Malta	4.3	3.4
Denmark	5.6	5.0	Netherlands	3.8	3.4
Estonia	6.8	4.4	Poland	3.2	3.3
Greece	16.3	17.3	Portugal	6.9	6.5
Spain	15.5	14.1	Romania	5.0	3.9
Finland	7.8	6.7	Sweden	8.3	6.8
France	8.0	8.5	Slovenia	5.0	4.5
Croatia	7.5	6.6	Slovakia	6.7	5.8

Source: Central Statistical Office (2021, 2020), Eurostat (2021).

The next element of the conducted analysis of economic situation in the EU during the first year of the pandemic was GDP per capita (table 6). The COVID-19 pandemic resulted in a slight reduction of GDP per capita of the EU and its Member States. GDP per capita ranged from EUR 8750 in Bulgaria (29.5% of the EU27 average) to EUR 101640 in Luxembourg (342,7% of the EU27 average) in 2020. In 2019 GDP per capita in Bulgaria amounted to EUR 8680 (27.9% of the EU27 average) and in Luxembourg it was EUR 102200 (328% of the EU average). It is quite important to note a relative worsening of the position of Greece in terms of GDP per capita. In 2019 GDP per capita in Greece amounted to EUR

17500, i.e. 56.3% of the EU average, while in 2020 it was EUR 15490, i.e. 52.2% of the EU average). A similar situation was recorded for Spain: in 2019 GDP per capita in Spain equaled EUR 26440, i.e. 85% of the EU average), while in 2020 it was EUR 23690, i.e. 79.9% of the EU average.

Table 6: GDP per capita (EUR, current prices)

Economy	2020	2019	Economy	2020	2019
European Union 27	29660	31100	Hungary	13940	14720
Austria	42300	44920	Ireland	73590	70470
Belgium	39110	41200	Italy	27780	29610
Bulgaria	8750	8680	Lithuania	17510	17340
Cyprus	23400	24920	Luxemburg	101640	102200
Czechia	19970	20640	Latvia	15430	15930
Germany	40120	41350	Malta	24630	26490
Denmark	53470	53430	Netherlands	45790	46820
Estonia	20440	21160	Poland	13640	13780
Greece	15490	17500	Portugal	19640	20660
Spain	23690	26440	Romania	11290	11500
Finland	42940	43570	Sweden	45850	46130
France	33690	35960	Slovenia	22010	22980
Croatia	12170	13330	Slovakia	16770	17270

Source: Central Statistical Office (2021, 2020), Eurostat (2021).

The COVID-19 pandemic created huge threats and challenges for EU Member States. On the one hand, economic activity was significantly reduced (partly due to the introduced lockdown). Moreover, there was increased need for financial assistance to both entrepreneurs, workers and unemployed. That’s why the pandemic adversely affected the situation of the general government sector.

Table 7: Surplus (+) / Deficit (-) of the general government sector (% of GDP)

Economy	2020	2019	Economy	2020	2019
European Union 27	-7.04	-0.50	Hungary	-8.28	-2.00
Austria	-9.10	+0.70	Ireland	-5.10	+0.40
Belgium	-9.52	-1.80	Italy	-9.66	-1.50
Bulgaria	-3.45	+2.05	Lithuania	-7.59	+0.25
Cyprus	-5.75	+1.70	Luxemburg	-4.14	+2.20
Czechia	-6.35	+0.30	Latvia	-4.45	-0.15
Germany	-4.28	+1.40	Malta	-10.35	+0.50
Denmark	-1.05	+3.65	Netherlands	-4.41	+1.60
Estonia	-4.97	-0.30	Poland	-7.10	-0.70
Greece	-9.93	+1.50	Portugal	-5.79	+0.20
Spain	-11.31	-2.75	Romania	-9.38	-4.30
Finland	-5.38	-1.05	Sweden	-3.17	+0.45
France	-9.38	-3.00	Slovenia	-8.56	+0.45
Croatia	-7.45	+0.38	Slovakia	-6.35	-1.25

Source: Central Statistical Office (2021, 2020), Eurostat (2021).

In 2019 15 EU member States noted surplus of the general government sector, while in 2020 all 27 EU Member States (with no single exception) recorded deficit of the general government sector. In 2019 the EU27 noted deficit of the general government sector of 0.5% of GDP, while in 2020 the deficit increased to as much as 7.04% of GDP. The largest deficits of the general government sector in 2020 were observed in the following EU Member States: Spain (-11.31% of GDP), Malta (-10.35% of GDP), Greece (-9.93% of GDP), Italy (-9.66% of GDP). Moreover, the deficits exceeding 9% of GDP were also recorded in France, Romania and Austria. Denmark was the EU Member State with the lowest deficit of the general government sector as % of GDP (-1.05% of GDP) (table 7).

It is quite important to note that some EU Member States did experience a really difficult situation in terms of debt of the general government sector before the pandemic (partly as a result of the global financial crisis 2008+, e.g. Greece, Italy, Portugal). The COVID-19 pandemic created yet another challenge for the general government sector in all EU Member State, but the challenge was particularly, exceptionally strong for those EU Member States which noted high public debt before the pandemic challenges began. Table 8 presents debt of the general government sector as % of GDP in 2019 and 2020.

Table 8: Debt of the general government sector (% of GDP)

Economy	2020	2019	Economy	2020	2019
European Union 27	91	78	Hungary	80	66
Austria	83	70	Ireland	60	58
Belgium	114	98	Italy	156	134
Bulgaria	25	20	Lithuania	46	36
Cyprus	118	95	Luxemburg	24	21
Czechia	38	30	Latvia	43	37
Germany	70	60	Malta	54	43
Denmark	42	34	Netherlands	55	48
Estonia	18	8	Poland	57	46
Greece	206	178	Portugal	134	117
Spain	119	96	Romania	46	35
Finland	68	59	Sweden	40	35
France	116	97	Slovenia	80	66
Croatia	88	74	Slovakia	60	48

Source: Central Statistical Office (2021, 2020), Eurostat (2021).

Debt of the general government sector of the EU27 and all individual EU Member States increased significantly in 2020 (Pawlas, 2021). When it comes to the EU27 there was an increase by 13 percentage points (from 78% of GDP to 91% of GDP). The worst situation was recorded in Greece in both 2019 and 2020; public debt in Greece amounted to 178% of GDP in 2019 and it rose to 206% of GDP in 2020. Italy was another EU member State with a very high level of public debt; debt of general government sector in Italy equaled 156% of GDP in 2020, while in 2019 it was 134% of GDP. In the case of Portugal public debt increased to 134% of GDP in 2020 (in 2019 it amounted to 117% of GDP). Four more EU Member States recorded debt of the general government sector exceeding 110% of GDP in 2020, namely: Spain (119 % of GDP), Cyprus (118% of GDP), France (116% of GDP) and Belgium (114% of GDP). It should be underlined here that those EU Member States which implemented very cautious, responsible policy before the pandemic, still had a sound situation in 2020 despite the pandemic, e.g. Estonia (public debt equaled 18% of GDP in 2020), Bulgaria (public debt equaled 25% of GDP in 2020), Luxembourg (public debt equaled 24% of GDP in 2020), or at least satisfactory, e.g. Czechia (public debt equaled 38% of GDP in 2020), Sweden (public debt equaled 40% of GDP in 2020), Denmark (public debt equaled 42% of GDP in 2020), Latvia (public debt equaled 43% of GDP in 2020), Lithuania and Romania (public debt equaled 46% of GDP in 2020).

The EU response to the COVID-19 Pandemic – Selected Issues

The EU response to the COVID-19 pandemic was multilayered and multidimensional (Jones, Sergejeff, Sherriff, Teevan and Veron, 2020). In April 2020 “A Roadmap for Recovery Towards a More Resilient, Sustainable and Fair Europe” was presented. It was a sort of a call for joint response to the unprecedented challenge imposed by the COVID-19 pandemic. The Roadmap was based on the following principles:

- The shock of the pandemic was symmetric and the recovery must be symmetric as well (it is crucial, therefore to avoid the recovery becoming asymmetric). The EU recovery plan must be based on solidarity, cohesion and convergence;
- Because of the still ongoing pandemic the EU response must be flexible. The EU recovery plan must evolve over time in order to adjust to a changed situation;
- The recovery must be inclusive and co-owned by all involved. It is the role of the EU to strengthen the efforts of EU Member States;

– The EU fundamental values and rights must be upheld at all times (European Council, 2020).

The Roadmap included four key areas for action:

– A fully functioning and revitalized Single Market,
– An Unprecedented Investment Effort,
– Acting globally,
– A functioning system of governance (European Council,2020).

Restoring and deepening the Single Market was considered a key element of prosperity and resilience. The EU economy must be modernized through the Green Transition and the Digital transformation. The strategic autonomy must be ensured mainly through a dynamic industrial policy, support for SMEs and start-ups, which altogether should result in the ability to produce critical goods in Europe and in reduction of dependency on third countries in this area. The MFF 2021-2027 must be a key instrument to support a lasting recovery and a fully functioning and modernized Single Market. The activity of the European Investment Bank must help achieve these goals. Because of the global character of the pandemic on the one hand, and due to the fact that the EU is a global actor, the EU must act globally, cooperate with its partners in the United Nations, World Trade Organization, the G20 and the G7. The EU must create a better system of governance, the system which will make the EU more resilient, more effective, more efficient (European Council, 2020).

The next crucial step was the adoption of Multiannual Financial Framework 2021-2027 (MFF 2021-2027) amounting to EUR 1074 billion as well as New Generation EU (NGEU) amounting to EUR 750 billion. The NGEU is a temporary instrument aiming at speeding and strengthening the post-pandemic recovery of the economies of EU Member States. The major part of the NGEU is Recovery and Resilience Facility (EUR 672.5 billion), consisting of two separate elements: grants (EUR 312.5 billion) and loans (EUR 360 billion). Moreover, the NGEU is to be spent on: REACT-EU (EUR 47.5 billion), Rural development (EUR 7.5 billion), Just Transition Fund (EUR 10.0 billion), Invest EU (EUR 5.6 billion), RescEU (EUR 1.9 billion) and Horizon Europe (EUR 5.0 billion) (European Commission, 2020c).

The EU Strategy for COVID-19 Vaccines was adopted in June 2020. It aimed to accelerate the development, manufacturing and deployment of vaccines against COVID-19 (European Commission, 2020a, European Commission 2020b). European Medicines Agency is responsible for evaluation of COVID-19 vaccines and authorizing the accepted COVID-19 vaccines for use in the EU. Till May 31, 2021 four vaccines were authorized, namely: Comirnaty, COVID-19 Vaccine Moderna, Vaxzevria (previously called COVID-19 Vaccine AstraZeneca) and Covid-19 Vaccine Janssen (European Medicines Agency, 2021). The European Commission jointly with a Joint Negotiation Team carried out the negotiations with vaccine suppliers. The members of the Joint Negotiation Team (representing seven Member States) were appointed by a Steering Committee. The Steering Committee discussed and reviewed all aspects of the Advanced Purchase Agreement (APA) contracts before signature. All EU Member States were represented in the Committee. Member States had to indicate the quantity of vaccines they wanted to buy. Manufacturers of the COVID-19 vaccines delivered/deliver the vaccines to national distribution hubs. Further distribution to vaccination centers was/is ensured by Member States, who were/are also responsible for the vaccination of their population. (European Commission 2021d).

In May 2021, the decision was taken to introduce A Digital Green Certificate. The main objective of the Digital Green Certificate is to facilitate safe free movement inside the EU during the COVID-19 pandemic. The Digital Green Certificate will be a proof that a person has been vaccinated against COVID-19, received a negative test result or recovered from COVID-19. It will be available, free of charge, in digital or paper format. It will include a QR code to ensure security and authenticity of the certificate. The Commission is to build a gateway to ensure all certificates can be verified across the EU, and support Member States in the technical implementation of certificates (European Commission 2021a; European Commission, 2021b; European Commission, 2021c).

It is important to note that the COVID-19 pandemic forced the introduction of fiscal support actions / programs by individual EU member States. Examples of fiscal support introduced by selected EU Member States from March 2020 to march 2021 are presented in table 9.

Table 9: Examples of fiscal support in selected EU Member States from March 2020 to May 2021

EU Member State	Fiscal support activities
Germany	1. EUR 156 billion, i.e. 4.7% of GDP (March 2020) 2. EUR 130 billion, i.e. 3.9% of GDP (June 2020) 3. EUR 60 billion, i.e. 1.7% of GDP (March 2021) Financial support directed to: healthcare equipment, R&D activity in the field of vaccine development, subsidies aiming at jobs preserving, childcare benefits, grants to SME owners, grants to self-employed, VAT reduction, subsidies in digitalization and sustainable growth. 4. Creating economic stabilization fund (WSF) offering guarantees up to 100% together with (KfW) 5. Local governments support (Länder and municipalities) – both direct (amounting to EUR 141 billion) and in the form of guarantees (amounting to EUR 70 billion)
France	1. EUR 180 billion EUR (8% of GDP) as fiscal envelope devoted to addressing the crisis 2. EUR 327.5 billion (15% of GDP) – as public guarantees Assistance was directed to: - streamline and boost health insurance for the sick or their caregivers; - increase spending in the field of health supplies; - support liquidity through postponements of social security and tax payments for companies as well as accelerated refund of tax credits (CIT, VAT); - support wages (especially under the short-time work scheme) - support financially affected microenterprises, independent workers, liberal professions, as well low-income households; - postpone rent and utility payments by affected microenterprises and SMEs; - facilitate granting exceptional bonuses exempt from social security contributions - extend unemployment benefits till the end of lockdown.
Italy	1. EUR 25 billion (1.6% of GDP) - *Cura Italia* emergency package (March 2020) 2. Liquidity Decree enabling granting public guarantees amounting to EUR 400 billion EUR (25% GDP) (April 2020) 3. EUR 55 billion (3.5% of GDP) as a '*Relaunch Package*' (May 2020) 4. EUR 25 billion (1.6% of GDP) (August 2020), e.g. support to families, support to workers 5. EUR 5.4 billion (0.3% of GDP) (October 2020), e.g. SMEs grants, support to self-employed 6. EUR 32 billion (March 2021), e.g. support to sectors strongly affected by the pandemic
Denmark	DKK 79.5 billion (3.4% of 2020 GDP) - Above-the-line discretionary fiscal support - increased spending for additional health care needs and extraordinary budgetary measures to support workers and businesses. Temporary liquidity measures: postponement of tax payments and government guarantees. DKK 1.65 billion - A summer and business package, aiming to boost the tourism and experience economy among others (May 2021)
Greece	EUR 23.5 billion (13.7% of GDP) in 2020: - health spending for hiring doctors and nurses, procurement of medical supplies, and cash bonuses to health sector workers; - temporary transfers to vulnerable individuals, including cash stipends and full coverage of pension and health benefit payments for employees working in hard hit firms and for self-employed professionals, extension of unemployment benefits, support for short-term employment, subsidies to households loans tied to their primary residency and paid leave for parents who have children not going to school, - liquidity support to hard hit businesses through loan guarantees, loan and interest payment subsidies, refundable advance payment, rent reductions, and deferred payments of taxes and social security contributions, - VAT rate reductions for critical products needed for COVID protection, research spending and transportation and hospitality sectors.

	Support measures were extended in parallel to the introduction of new movement restrictions in November 2020 and March 2021, increasing the cost of fiscal measures to about 8.5% of GDP in 2021.
Ireland	EUR 24.5 billion (14% of GNI), distributed over 2020 and 2021: - EUR 20.5 billion in direct support (taxation measures, i.e., warehousing and deferrals + expenditure measures including labor market support, health sector capacity enhancement, business support, capital works) - EUR 4.0 billion in indirect support (credit guarantee scheme + *Pandemic stabilization and recovery Fund* (ISIF). + Additional stimulus of 1.7% of GDP in 2021 (extending the income support measures, providing targeted support to the hospitality sector, increasing health and housing spending, strengthening the green agenda). In addition to that, the government has increased unemployment and wage subsidy support. Key discretionary policy measures include: A. *Employment Wage Support Scheme*: Employers, whose turnover has fallen 30%, will receive a flat-rate subsidy of up to EUR 203 weekly per employee. B. *The Pandemic Unemployment Payment* - available to those who have lost employment due pandemic amounting to EUR 350 per week. C. *Covid Restrictions Support Scheme* (CRSS) provides 5% - 10% turnover compensation payments to the affected firms in several sectors (accommodation, food and the arts, recreation and entertainment) at the time of increased restrictions (limited to EUR 5000 per week). D. Additional EUR 200 million investment in training, education, skills development, work placement schemes, recruitment subsidies, job search and assistance measures, to help those who have lost their jobs find a new one, retrain, or develop new skills, in particular for emerging growth sectors. E. Measures to support SMEs: - *The Restart Grant for Enterprises* (EUR 550 million), - Waiver of commercial rates; - *Credit Guarantee Scheme*: 80% government guarantee from EUR 10000 to EUR 1 million up to a maximum term of 6 years; - *Micro Finance Ireland and the Local Enterprise Measures*: liquidity and enterprise investment measures worth EUR 55 million to reduce lending rate for micro and small businesses; - *The Future Growth Loan Scheme* (EUR 500 million) with the European Investment Bank Group, (promoting longer-term investment of businesses with up to 499 employees). F. Measures to support hospitality and tourism sector: (e.g. temporary VAT rate cut from 13.5% to 9% until the end of 2021, *Stay and Spend Incentive* through a tax credit; EUR 10 million *Restart Fund for the Tourism sector*; EUR 10 million *Performance Support Scheme* for the culture sector. G. Tax measures: - reduction in the standard rate of VAT from 23% to 21% percent for 6-month starting September 2020, - warehousing of tax liabilities for affected businesses to delay payment of their PAYE and VAT debts for a set period with no interest or penalties, - Interest rate reduction to 3%, applying to agreed repayments of all tax debt, - Immediate cash-flow support to previously profitable companies, the early carryback of trading losses, immediate refund of some or all of corporation tax paid, - Income tax relief for self-employed individuals who were profitable in 2019, but were adversely affected by the COVID-19 pandemic in 2020, - A Customs ‘green routing’ for critical pharmaceutical products and medicines in order to facilitate uninterrupted importation and supply.

Source: International Monetary Fund (2021).

The recovery of the EU economies in 2021 is not assured. Some EU countries experience the beginning of another wave of the COVID-19 pandemic in summer months of 2021 (e.g. Spain, France, Portugal). There’s a high probability of additional COVID-19 waves because of new mutations of the coronavirus (Delta, Delta Plus). In the face of more transmissible variants of the SARS-CoV-2 the introduction of further mobility restrictions in autumn 2021 seems quite likely. If the pandemic takes longer than expected, it may be difficult to achieve a 4% GDP growth (as projected by the World Bank). Additionally, there is a problem of anti-vaccination movements in some EU Member States; therefore, it seems impossible to reach herd immunity through vaccination (Ball, 2020). Moreover, mounting debt levels in many EU Member States and rising inflationary pressures in some of them are likely to create obstacles for future development of the EU. On the one hand, withdrawal of domestic macroeconomic fiscal support measures may become an obstacle for the recovery; on the other, however, the introduction of MFF 2021-2027 and Next Generation EU may strongly contribute to the recovery of the EU. Both MFF 2021-2027 and Next Generation EU are supposed to help to finance various growth-enhancing investments, including green and digital infrastructure (World Bank, 2021a).

Conclusions

The COVID-19 pandemic resulted in a global crisis. The pandemic crisis has caused substantial negative impacts on the EU27 economy and necessitated unprecedented policy response of the EU (De Vet, Nigohosyan, Ferrer, Gross, Kuehl and Flickenschild, 2021). The conducted research indicated that the short-term negative economic consequences of the COVID-19 pandemic were reflected in the decline in GDP, reduced GDP per capita, decrease in industrial production, reduction of production in construction, decline in value added in services, deterioration of the situation on the labor market, as well as the deterioration of public finance both in regard to the EU27 and individual EU Member States. The economies of some EU Member States were hit harder during the first pandemic year (2020) than others (e.g. GDP dynamics in Spain amounted to minus 10.8%, in Italy it was minus 8.9% and in Greece - minus 8.2%, while in the case of Lithuania GDP reduction was only 0.9% and Ireland experienced a 3.4% increase of GDP in 2020). The adopted hypothesis according to which the short-term economic consequences of the COVID-19 pandemic are visible both at the level of the EU and in relation to individual EU Member States but the scale of negative phenomena is very diversified was confirmed.

The EU response for the COVID-19 pandemic began in April 2020, when it presented “A Roadmap for Recovery Towards a More Resilient, Sustainable and Fair Europe”. The next important elements of the EU reaction were connected with the adoption of Multiannual Financial Framework 2021-2027 and a temporary instrument aiming at speeding and strengthening the post-pandemic recovery of the economies of EU Member States, i.e. New Generation EU. Moreover, the EU Strategy for COVID-19 Vaccines was implemented in mid 2020 and the Digital Green Certificate was introduced in mid 2021. EU Member States also introduced fiscal support actions and programs in order to respond to the minimize the negative effects of the COVID-19 pandemic. The scale of the support programs varied to a great extent.

Limitations of the research were connected with the fact that the COVID-19 pandemic continues. Therefore, it is impossible to fully assess its impact on the EU27 and on individual EU member States. Research limitations were also related to limited access to statistical data. Hence, it was not possible to include some of the planned elements in the research.

Further research should include a more detailed analysis of the impacts of the COVID-19 pandemic on various sectors and industries in the EU27 and individual EU Member States (e.g. the implications of the pandemic for transportation sector, ICT industry, recreation and entertainment industry, hospitality industry, restaurant industry, education sector ought to be studied more carefully). Moreover, further research should focus on the impacts of the COVID-19 pandemic on the EU27 position in international trade and engagement in international transfer of capital. Further research should also focus on practical implementation of MFF 2021-2027 and New Generation EU.

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