EUROPEAN ECONOMIES AFTER COVID-19: CHALLENGES AND IMPLICATIONS FOR THE MACROECONOMIC POLICY

Editor
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Title:
European Economies after Covid-19: Challenges and Implications for the Macroeconomic Policy

Editor:
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Publisher:
Institute of Economic Sciences
Zmaj Jovina 12, Belgrade, Serbia
www.ien.bg.ac.rs
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Published by:
Institute of Economic Sciences, Belgrade

Circulation:
30

ISBN: 978-86-89465-75-4

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PREFACE

The COVID-19 pandemic has had a profound impact on European economies, causing unprecedented challenges across the continent. The initial shockwaves were felt through disruptions in global supply chains, trade restrictions, and a sudden decline in consumer demand. As countries implemented stringent lockdown measures to curb the spread of the virus, businesses faced closures, leading to widespread unemployment and financial strain. The tourism and hospitality sectors, vital contributors to many European economies, were particularly hard-hit as travel restrictions and lockdowns paralyzed these industries. Additionally, manufacturing and export-oriented economies faced setbacks due to disruptions in production and logistics. Small and medium-sized enterprises (SMEs) struggled to adapt to the new normal, with many facing financial hardships.

The pandemic also exposed and exacerbated existing economic disparities among European countries. Nations heavily reliant on certain industries or with less diversified economies faced greater challenges in weathering the economic storm. The European Union took steps to address these disparities, but the recovery remained uneven. Governments across Europe responded with unprecedented fiscal measures, injecting massive stimulus packages to support businesses, workers, and healthcare systems. However, the economic fallout led to a surge in public debt levels, creating long-term challenges for fiscal sustainability. The long-term impact of the pandemic on European economies will likely reshape economic policies, accelerate digital transformation, and necessitate a reevaluation of resilience in the face of future global crises.

In essence, the COVID-19 pandemic imposed a complex web of economic challenges, testing the resilience of businesses, governments, and societies globally. Addressing these challenges required innovative policy responses, adaptability, and a collective effort to navigate the uncertain economic landscape. This special thematic collection of papers with some of these challenges and respective policy responses.

In Belgrade, October 2023

RISE OF THE ONLINE GIG ECONOMY - AN OPPORTUNITY FOR THE DEVELOPMENT OF THE DEVELOPING ECONOMIES

Jovanka Damoska Sekuloska, PhD[1]
Aleksandar Erceg, PhD[2]

Abstract: *The emergence of digital technologies results in the most significant transformation of the economy and the labor market into an online gig economy. The pandemic stimulated the growth of digital labor, and the Internet has arisen as a feasible employment solution. The online gig economy plays an important role in developing countries' economic development. The research examines the changes that happened in the share of supply of online freelancing labor in the period before and after the Covid-19 crisis in European countries. Mainly, the paper focuses on identifying the tendency of increasing participation of developing countries in the share of the supply of digital freelancing labor and benefits. Purposely, a clustering analysis focuses on the European countries, grouping them into four clusters according to their share in the supply of labor in the online gig economy. The research provides additional value to the fundamental research of the gig economy. It suggests that the rise of the online gig economy leads to the labor market transformation and opens opportunities for developing economies.*

Keywords*: Online gig economy, digitalization, freelancing, cluster analysis, development.*

JEL Classification*: J21, J24, O33*

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This paper was created as part of the project "MI – jučer, danas, sutra" (UP.04.2.1.06.0018), which was co-financed by the European Union from the European Social Fund. The content of the article is the sole responsibility of the Udruga mladih and Alumni of FET Pula.

1. INTRODUCTION

The continual advances in Information and communication technology (ICT) are leading to new forms and models in the economy. ICT has long been a source of countless opportunities for professional development and value creation. The Internet has changed how people provide and exercise their knowledge and skills. Internet and digital technologies have transformed the economy and labor market into the online gig economy. Digital labor has been becoming an essential factor in the global economic environment. The online gig economy is where many workers start their first job or abandon traditional employment in favor of working on a task basis for various employers. The online gig economy equally plays a vital role in the economic development of developed and developing economies. The relevance is getting higher, especially during the global Covid-19 crisis. It is obvious that ICT and the Internet have been vital in helping maintain continuity in business activity, employment, education.

The rise of digital labor is mainly the result of two tendencies. Firstly, the rapidly increasing connectivity of the world. The latest international telecommunication union (ITU, 2022) data reveals that acceptance of the Internet has accelerated during the pandemic. In 2019, 54% of the world's population used the Internet. Since then, the percentage of users in 2021 has reached 63% of the population. In the first year of the pandemic, the number of users grew by 10.2 %, with the most significant increase of 13.3% in developing countries. The greater uptake is evident among young people, where 71% of the world's youth were using the Internet in 2020 (ITU, 2022). The greater acceptance by the youth is well for connectivity which improves the development and employment prospects for this part of the world population. Overall, 53% of gig workers aged 18-34 rely on gig work as their primary source of income. Second, a large pool of underutilized labor means underemployed workers and people without a job who would like to work, especially in developing countries (ILO, 2022). Spreading digital connectivity across the globe, people have turned to provide digitally mediated work to overcome some constraints of the local labor markets (Graham et al., 2017). The Internet and online labor markets enable skilled labor from developing countries to receive multiple job offers they would otherwise not have access to. It is beneficial to individuals and can contribute significantly to the national economy. The objective of this paper is precisely to assess the rise of the gig economy in developing countries. The structure of the research consists of three parts. The first part refers to the theoretical aspect of the gig economy. The second part explains some tendencies in the online gig economy, particularly in some developing European countries. The main focus of the research is the clustering

analysis of the supply side of the online gig economy in the period before and after the Covid-19 crisis focusing on the European economies. Purposely, a cluster analysis is made to identify the movement of the economies along the clusters. The conclusion, the part will be provided a summary of the research and a proposal for future research.

2. THEORETICAL ASPECTS

Digital labor markets delocalize work, so the workers sell their labor regardless of the buyer's location. It allows workers to escape the boundaries of their local labor markets, reduces the bargaining power of employers, and gives workers a higher price for their labor (Graham et al., 2017). The rise of freelancers is considered one of the special issues in the evolution of the labor market. Online work is snowballing (Chan and Wang, 2018; Huws et al., 2017). Digital labor and talent access could be a central part of the future, and online labor platforms promise to connect jobs with knowledge workers all over the globe (Horton et al., 2017). The influence of ICT technology and the rise of online gigs are related to three main trends influencing the labor market. The transformation can be identified from local to remote global labor market, from full-time to temporally flexible, and from permanent to casual occupancy (Kässi and Lehdonvirta, 2018).

Online freelancing is considered the means which provides opportunities for workers to be engaged in flexible employment arrangements (Gray and Suri, 2019). Since it is project-based, the workers are not locked into one permanent job for a single employer. Online freelancing is appearing as a new value in the labor market. It facilitates virtual migration, bringing jobs to people instead of forcing them to migrate (Lehdonvirta, 2018; Horton et al., 2018; Braesemann et al., 2018; Melia, 2020). According to the World Bank's World Development Report (2019), changing the nature of work is a reality. The economies should be prepared and capable of adapting online freelancing to take advantage of and diminish the weaknesses following the changes in the labor market. Online outsourcing provides new employment opportunities for labor in developing countries.

Most gig work and the gig economy are connected to digital (gig) platforms. Online freelancers in developed economies get 75% of their gig work from local clients, against in developing countries where freelancers get about 90% of their gig work from overseas clients. Digital platforms and the gig economy (work) influence decisions on supplying labor in two ways (Dunn, 2018).

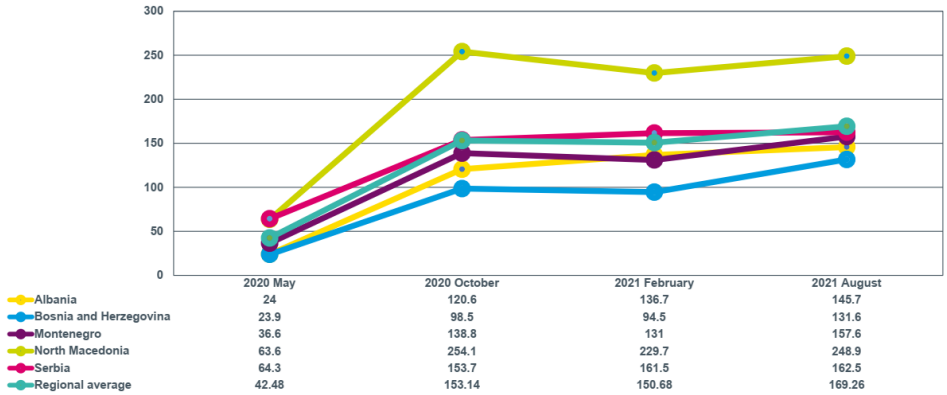
Firstly, they are lowering entry barriers for finding work, allowing the workers to get income in a few days. The low entry barriers for the gig economy allow workers to stay at their locations and work instead of migrating to another location for work. Secondly, digital platforms facilitate virtual labor migration, where workers can find employment beyond the local labor market. Virtual labor migration creates a labor market that does not depend on location and therefore allows workers to have opportunities that would only be available to physical migrants. Erickson and Jarrahi (2016) concluded that digital platforms alter migration decisions because they allow workers to organize resources from distinct locations. Dunn (2018) concluded that the accessibility of gig work (gig economy) via online platforms removes the geographic limitations associated with work and creates an environment where potential workers are not attached to their location. This has further implications for migration decisions since workers from all over the world (i.e., skillsets with poor matches to the labor market, depressed labor markets, etc.) can find work without migrating, and workers can migrate voluntarily without the economic implications. The gig economy has been influencing the labor market of developing countries and the future of migrations since the role of the gig work platforms as potential alternatives or extensions of existing migration infrastructure will have broader economic and political consequences (van Doorn and Vijay, 2021). The digital gig economy as a new work environment is mainly adopted by young labor, and it is being encouraged in developing economies as a way how to improve the employment rate and national income. The digital gig provides new employment opportunities for labor in developing countries Heeks, R. (2017). It represents a primary and additional income source for most who are engaged in digital gigs in developing countries, something that had not been accessible before the rise of digitalization.

3. TRENDS IN THE ONLINE GIG ECONOMY

The emergence of online freelancer job markets is creating new opportunities for developing countries to connect with the global economy. Rising of digital freelancing in many developing countries is coming as a result of the deficiency of their labor markets exercising high entry barriers, especially for the younger population. Platforms as a kind of labor market provide an opportunity for overcoming some failings of a local labor market when there is no demand for some skills or if the labor price is low (ETF, 2021). Digital platforms as a tool of the digital gig economy are becoming increasingly one of the most prominent forms of labor in many developing countries. One representative example is the economies of the Western Balkans, like Serbia, Albania, North Macedonia,

Montenegro, and Bosnia and Hercegovina. The number of online gig workers from these countries on global work platforms has increased more than 3.5 times since 2017 (ETF, 2022). The majority of digital workers are referring to young and highly educated people. The main motivations behind platform employment include an opportunity for a better-paid job, extra or additional income, and difficulty finding a traditional job.

Figure 1: Number of Online freelancers per 100000 populations on Upwork, Freelancer.com, and Guru.com platforms



	2020 May	2020 October	2021 February	2021 August
Albania	24	120.6	136.7	145.7
Bosnia and Herzegovina	23.9	98.5	94.5	131.6
Montenegro	36.6	138.8	131	157.6
North Macedonia	63.6	254.1	229.7	248.9
Serbia	64.3	153.7	161.5	162.5
Regional average	42.48	153.14	150.68	169.26

Source: Adapted from European Training Foundation (2022)

Digital platforms represent a substantial part of the global labor market. According to Warner (2020), digital platforms are the most important and required place to find a job for 73% of freelancers. The main reason behind the dominance of the platforms is their ability efficiently and quickly match supply and demand, which leads to a significant reduction in transaction costs (McKinsey, 2015). The platforms allow access to skills and talents worldwide, providing decent pay and high flexibility against the regular labor market. Workers from developing countries have recognized digital freelancing as a way of regular and non-regular employment. According to Fairwork Serbia Report (2021), Serbia has seen one of the world's largest per capita pools of cloud workers on global online platforms with tens of thousands of online freelancers. Digital gig platforms substitute emigration abroad, so it positively influences employment in developing economies and increases income inflow from abroad in the form of remittance inflow. Digital migrant freelancers live in their native country but work for foreign clients using online platforms like Upwork. Data provided by the Online labor observatory (OLO, 2020) show that

online freelancers mainly belong to creative and multimedia professions, software development and technology, and clerical and data entry.

4. METHODOLOGY OF RESEARCH

The research aims to analyze and understand the shift of the European economies towards digital gig economies. The analysis considers the supply of online gig labor before and after the COVID – 19 pandemics. Clustering analysis is carried out to identify country groups presenting similar tendencies in the digital labor supply.

Purposely, the researchers used data from the Online Labour Index 2020. It is an economic indicator providing data about the online gig economy. It measures the supply and demand of online freelance labor across countries and occupations by tracking the number of projects and tasks across platforms in real-time. OLI (2020) indicates global growth in the online gig economy of 51% from 2016 to 2021.

The cluster analysis groups the European countries according to the similarities existing in the supply of digital labor. The data used in the analysis represent the share of the European countries in the global online labor supply (Table 1). The analysis is based on the data for 2017 and 2022. The primary purpose is to track and compare the share of the European countries, particularly developing countries, in the global online labor supply in the periods before and after the Covid crisis.

Table 1: Global share of the European countries in the online labor supply in 2017 and 2022 (in%)

Country	**2017**	**2022**
Albania	0.051	0.108
Austria	0.063	0.113
Belgium	0.034	0.007
Bosnia and Herzegovina	0.113	0.174
Bulgaria	0.471	0.213
Croatia	0.183	0.055
Cyprus	0.073	0.028
Czech Republic	0.047	0.027
Denmark	0.061	0.007
Estonia	0.133	0.058
Finland	0.032	0.034

Country	**2017**	**2022**
France	0.427	0.179
Germany	0.868	0.545
Greece	0.492	0.165
Hungary	0.174	0.083
Ireland	0.655	0.356
Italy	0.834	0.174
Latvia	0.085	0.027
Lithuania	0.087	0.006
Luxembourg	0.01	0.004
Macedonia	0.684	0.235
Malta	0.027	0.002
Montenegro	0.042	0.003
Netherlands	0.447	0.212
Norway	0.122	0.016
Poland	0.24	0.489
Portugal	0.352	0.191
Romania	0.915	0.412
Russia	0.68	2.405
Serbia	0.582	2.141
Slovakia	0.07	0.047
Slovenia	0.083	0.004
Spain	0.785	0.428
Sweden	0.322	0.198
Turkey	0.332	0.702
Ukraine	1.43	4.037
United Kingdom	6.968	3.631

Source: Online labor observatory, 2022

Table 1 reveals two main tendencies in the supply of online labor. First, raising the share of the European developing countries in the global supply of online labor, and second, lowering the share of the developed European countries.

5. CLUSTERING ANALYSIS ON THE RISING OF THE DIGITAL GIG ECONOMY IN THE DEVELOPING COUNTRIES

A clustering analysis is conducted to clarify the raising of the digital gig economy in developing European countries. The analysis identifies groups of countries based on their share in the global supply of online labor in two comparative periods before and after the Covid crisis. To identify the country groups, a hierarchical cluster analysis methodology is used. The clustering is performed based on the Ward method, which is more appropriate when many

countries should be grouped in small clusters (Ward, 1963). According to the Ward method, the criterion for choosing the pair of clusters to merge at each step is based on the Sum of squares error (SSE). Initially, four groups (clusters) of countries are determined on a random basis. The analysis is conducted by calculating each cluster's mean values and the minimum distance. Six iterations (repeating) are made in the analysis until the cluster is stabilized. In this case, the analysis is repeated until the SSE shows minimal changes or the cluster allocation changes are minor or do not appear on each iteration.

Table 2 presents the last (sixth) iteration, which provides minimum SSE and no changes in the cluster. It refers to the period before the Covid crisis.

Table 2: Last iteration of the clustering analysis for 2017

Iteration 6	**Start 1**	**Start 2**	**Start 3**	**Start 4**	**Min**	**Cluster choice**
Albania	0.000751914	0.126894	0.648629	47.84489	0.000751914	1
Austria	0.000237809	0.118489	0.629444	47.67903	0.000237809	1
Belgium	0.00197323	0.139295	0.676301	48.08036	0.00197323	1
Bosnia and Herzegovina	0.001195704	0.086567	0.552606	46.99103	0.001195704	1
Bulgaria	0.15411823	0.004068	0.148514	42.21101	0.004067605	2
Croatia	0.010936756	0.050276	0.453434	46.03623	0.010936756	1
Cyprus	2.93878E-05	0.111704	0.613676	47.54103	2.93878E-05	1
Czech Republic	0.000987283	0.12976	0.655088	47.90024	0.000987283	1
Denmark	0.000303493	0.11987	0.632621	47.70665	0.000303493	1
Estonia	0.002978861	0.075198	0.523271	46.71723	0.002978861	1
Finland	0.002154914	0.140792	0.679594	48.1081	0.002154914	1
France	0.121507283	0.000391	0.184363	42.78468	0.00039116	2
Germany	0.623434914	0.212316	0.000135	37.21	0.000135141	3
Greece	0.171047546	0.007187	0.132769	41.93858	0.007187272	2
Hungary	0.009135335	0.054393	0.465636	46.15844	0.009135335	1
Ireland	0.332443283	0.061394	0.040552	39.85397	0.040551891	3
Italy	0.570899546	0.182139	0.000501	37.62596	0.000500641	3
Latvia	4.32825E-05	0.103827	0.595019	47.37569	4.32825E-05	1
Lithuania	7.35983E-05	0.102542	0.591938	47.34816	7.35983E-05	1
Luxembourg	0.00468144	0.157785	0.716351	48.41376	0.00468144	1
Macedonia	0.366725861	0.076606	0.029713	39.48866	0.029713141	3
Malta	0.002644125	0.144569	0.687863	48.17748	0.002644125	1
Montenegro	0.001326493	0.133387	0.663207	47.96948	0.001326493	1
Netherlands	0.13585044	0.001582	0.167588	42.52344	0.001582272	2
Norway	0.001899125	0.081352	0.539307	46.86772	0.001899125	1
Poland	0.026107756	0.027963	0.379918	45.26598	0.026107756	1

Iteration 6	**Start 1**	**Start 2**	**Start 3**	**Start 4**	**Min**	**Cluster choice**
Portugal	0.07484544	0.003049	0.254394	43.77146	0.003049494	2
Romania	0.699864335	0.257838	0.003437	36.63881	0.003436891	3
Russia	0.36189723	0.074408	0.031108	39.53894	0.031108141	3
Serbia	0.253591756	0.030547	0.075282	40.781	0.030547272	2
Slovakia	7.09141E-05	0.113719	0.618386	47.5824	7.09141E-05	1
Slovenia	2.09668E-05	0.10512	0.598109	47.40323	2.09668E-05	1
Spain	0.499253809	0.142716	0.005094	38.22949	0.005094391	3
Sweden	0.059330704	0.007263	0.285557	44.16932	0.007262827	2
Turkey	0.064302283	0.005658	0.274969	44.0365	0.005658383	2
Ukraine	1.826765651	1.046074	0.329046	30.66944	0.329045641	3
United Kingdom	47.46629807	43.04381	37.35196	0	0	4

Source: Authors' calculation, 2022

Table 2 reveals the clustering of the European economies in 4 groups based on their similarities in the online labor supply. It identifies a considerable gap among different clusters based on their share in the global supply of digital labor. That gap is most evident between cluster 1 and cluster 4. Most countries, or almost 70%, belong to cluster 1, exercising a meager share in the global supply of digital labor. It involves developing and developed European countries that exercised a meager share in the global supply of digital labor before the Covid crisis. Cluster 4 is represented by only one economy, the UK, showing a significantly high share in the global supply of digital labor compared to the other European countries.

Table 3 provides a clustering analysis of the share in the global supply of digital labor after the Covid crisis. We used the exact source of information, the online labor observatory, which measures online freelancing. Table 3 represents the last iteration of the clustering analysis for the period after the Covid crisis in 2022.

Table 3: Last iteration of the clustering analysis for 2022

Case 1	Start1	Start2	Start3	Start 4	Min	Cluster
Albania	0.006806	0.004951	0.144907	8.67597	0.004951041	2
Austria	0.007656	0.004272	0.141125	8.64654	0.004272405	2
Belgium	0.000342	0.029365	0.232003	9.281162	0.00034225	1
Bosnia and Herzegovina	0.022052	1.9E-05	0.099015	8.29152	1.90413E-05	2
Bulgaria	0.035156	0.0012	0.075992	8.06844	0.001199678	2
Croatia	0.00087	0.015219	0.188067	8.991002	0.00087025	1
Cyprus	6.25E-06	0.022609	0.212214	9.15365	6.25E-06	1
Czech Republic	2.25E-06	0.022911	0.213136	9.159702	2.25E-06	1
Denmark	0.000342	0.029365	0.232003	9.281162	0.00034225	1
Estonia	0.001056	0.014487	0.185474	8.97302	0.00105625	1
Finland	7.23E-05	0.020841	0.206722	9.11738	0.00007225	1
France	0.023562	4.05E-07	0.095893	8.26275	4.04959E-07	2
Germany	0.26988	0.134422	0.003173	6.292572	0.003173444	3
Greece	0.01946	0.000179	0.10476	8.343432	0.000178587	2
Hungary	0.003306	0.009094	0.164565	8.82387	0.00330625	1
Ireland	0.10923	0.031555	0.0176	7.276506	0.017600444	3
Italy	0.022052	1.9E-05	0.099015	8.29152	1.90413E-05	2
Latvia	2.25E-06	0.022911	0.213136	9.159702	2.25E-06	1
Lithuania	0.00038	0.029709	0.232967	9.287256	0.00038025	1
Luxembourg	0.000462	0.030403	0.234902	9.29945	0.00046225	1
Macedonia	0.04389	0.003208	0.064347	7.943942	0.003207678	2
Malta	0.000552	0.031104	0.236844	9.311652	0.00055225	1
Montenegro	0.000506	0.030752	0.235872	9.30555	0.00050625	1
Netherlands	0.034782	0.001131	0.076544	8.074122	0.001131405	2
Norway	9.03E-05	0.026362	0.223414	9.226406	0.00009025	1
Poland	0.214832	0.096495	1.11E-07	6.57666	1.11111E-07	3
Portugal	0.02739	0.00016	0.088605	8.193906	0.000159678	2
Romania	0.149382	0.054586	0.005878	6.977522	0.005877778	3
Russia	5.66202	4.957909	3.672333	0.420552	0.42055225	4
Serbia	4.47534	3.851941	2.730205	0.832656	0.83265625	4
Slovakia	0.000462	0.017256	0.195069	9.039042	0.00046225	1
Slovenia	0.000462	0.030403	0.234902	9.29945	0.00046225	1
Spain	0.162006	0.062318	0.00368	6.89325	0.003680444	3
Sweden	0.029756	0.000386	0.084487	8.15388	0.000385587	2
Turkey	0.457652	0.274195	0.045511	5.529552	0.045511111	3
Ukraine	16.09213	14.88907	12.59067	0.967272	0.96727225	4
United Kingdom	12.99963	11.9207	9.874259	0.333506	0.33350625	4

Source: Authors' calculation, 2022

The results in Table 3 identify improvement in the position of the developing countries toward upper clusters after the Covid crisis. Comparing both

clustering analyses, before and after the Covid crises, we can identify significant changes in the share of global digital labor supply of the European countries (Table 4).

Table 4: Comparative analysis

Clustering analysis of the supply of gig labor			
2017		**2022**	
Cluster 1:	20	Cluster 1:	16
Cluster 2:	8	Cluster 2:	11
Cluster 3:	8	Cluster 3:	6
Cluster 4:	1	Cluster 4:	4

Source: Authors' calculation, 2022

The comparative analysis identifies two main tendencies. First, it appears a shift from Cluster 1 to the upper clusters. Before the crises, Cluster 1 comprised 54% of all European countries, showing a meager share in the global supply of digital labor. Table 3 reveals that in 2022 Cluster 1 occupies 43% of the analyzed European countries. The most evident change is visible in Cluster 4. In the period before the crisis, cluster 4 consisted of only one country, but in 2022 it includes four countries. Against the UK, the members of this cluster have become three developing countries Serbia, Russia, and Ukraine.

The second trend evident from the cluster analysis is the countries' shift along the clusters. The direction of the shift is opposite among developed and developing European countries. Developing countries are increasing their share in the supply of digital labor, which is most evident in the case of Serbia, Russia, Turkey, Ukraine, Poland, and Albania. On the other hand, most of the advanced European countries show a downward trend in the global share. This tendency is notably evident in the case of Denmark, France, Germany, Italy, and the UK. The analysis makes evident the process of removing the supply of digital online labor from advanced to developing countries.

6. CONCLUSION

Digitalization and the emergence of digital labor platforms are considered significant transformations in the labor market. The positive development could be considered the appearance of new flexible jobs, providing significant employment opportunities, particularly to workers in developing countries. The paper reveals changes in the supply of digital labor before and after the Covid crisis. The paper tracks the rising of the digital gig economy in European

countries. The main visible labor attribute identified by the research is the increasing share of the European developing countries' global supply of digital labor. The increase in the supply of digital labor compared to the period before the Covid crisis is almost 3.5 times. It is a result mainly of the rising trend in acquiring digital skills, the opportunity for acquiring regular or additional income, and the inability to find a traditional mode of job, especially for the young population.

Future research will focus on whether the supply of digital labor is the most efficient way of exporting labor for developing countries or using that labor in a more entrepreneurial direction, meaning creating an innovative product with higher value and exporting it abroad.

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GROWTH AND DEVELOPMENT CHALLENGES FOLLOWING COVID-19 IN NORTH MACEDONIA

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Irina Piperkova, PhD[3]
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Abstract: *The present global situation calls into question the functioning of economies. Economies continue to address the impacts of the COVID-19 pandemic, first to protect people's health, but also to ensure that the economy will recover. This current process has been interrupted by the war in Ukraine and all countries need to find ways to secure macroeconomic stability. Therefore, ensuring economic growth and finding ways to do that is critical. The main purpose of this paper is to determine the effects of the COVID-19 pandemic on the economy of North Macedonia. Based on the analysis of certain macroeconomic indicators, it is possible to clarify the impact of a pandemic. It is therefore possible to make recommendations on appropriate means of recovery. The analysis focuses on the secondary data from the national statistical offices (State Statistical Office, Ministry of Finance, and National Bank), Eurostat and World Bank Data. The research includes annual and quarterly data of the macroeconomic indicators for the period 2017-2022 for North Macedonia. Also, comparative analysis of the selected countries from the region is conducted. According to a comparative analysis of selected macroeconomic indicators, the COVID-19 pandemic and the global slowdown have had a severe impact in North Macedonia. Macroeconomic stability is the main objective, considering the problem of inflation, the increase in public debt and political instability. Economic growth has obviously changed positively, but its sustainability and its impact on the quality of life in North Macedonia are important objectives to*

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reach. Policy and measures that increase productivity are one way to meet these objectives.

***Keywords**: Macroeconomic stability, economic growth, inflation, quality of life, total factor productivity (TFP)*

***JEL Classification**: E00, O4, E3*

1. INTRODUCTION

The subject of this paper is an analysis of the key macroeconomic indicators (real GDP growth, Inflation, Employment and Unemployment rate) in North Macedonia. Through this, the objectives of this paper are to assess their relationship and position, and draw adequate conclusions and recommendations for policymakers accordingly, which is particularly important for the growth and development challenges following COVID-19.

The methodological approach in the research is based on the use of several scientific research methods, such as the historical method, the method of analysis and synthesis, the method of induction and deduction, the statistical method, the comparative method and others. The analysis uses annual and quarterly data from the State Statistical Office of the Republic of North Macedonia, the National Bank of the Republic of North Macedonia, the Ministry of Finance of the Republic of North Macedonia, the World Bank and the United Nations database. For the needs of the research, domestic and international publications were used and literature relevant to the subject of research was consulted.

The research results outline the impact of COVID-19 on the economy of North Macedonia. The contribution of this paper is visible in the identification of the main challenges of economic growth in North Macedonia. Despite the continued presence of the COVID-19 pandemic, the energy crisis, the lack of food, disrupted supply chains, the uncertainty of the military conflict in Ukraine are also problems that the economy has to face.

2. CHANGES IN ECONOMIC GROWTH IN NORTH MACEDONIA DURING THE PANDEMIC

The pandemic has affected the economies of all countries of the world. The imbalance that occurred during the pandemic, which disrupted economic flows, affected every country differently. Also, depending on the economic stability

and resilience of the country, as well as the achieved level of development, the economies felt the shock of the health crisis differently and survived with different intensity of changes.

Table 1 shows the economic growth data for 2017 to 2021 for some countries. These countries were chosen mainly because of the common historical past of North Macedonia and the countries of the former Yugoslavia, which had the same social structure. The other counties (Bulgaria, Albania, Romania, Slovakia, Kosovo and Türkiye) have close economic relations and are also geographically close to North Macedonia and most of them on the Balkans Peninsula.

Economic growth rate in 2020 in all countries from the Table 1, is negative, except for Türkiye where it is 1.8 %. The lowest value is evident in Montenegro and it is -15.3. Immediately, in the following 2021 the signs of economic recovery are present in each analyzed country. The highest shifting is present in Montenegro, where from-15.3 % in 2020 to 12.4 % in 2021. (Table 1)

Table 1: Economic growth rate in the selected countries, 2017-2021

	North Macedonia	Albania	Bosnia and Herzegovina	Bulgaria	Croatia	Czech Republic	Kosovo	Montenegro	Romania	Serbia	Slovakia	Slovenia	Türkiye
2017	1,1	3,8	3,2	2,8	3,4	5,2	4,8	4,7	7,3	2,1	3,0	4,8	7,5
2018	2,9	4,0	3,7	2,7	2,9	3,2	3,4	5,1	4,5	4,5	3,8	4,4	3,0
2019	3,9	2,1	2,8	4,0	3,5	3,0	4,8	4,1	4,2	4,3	2,6	3,3	0,9
2020	-6,1	-3,5	-3,1	-4,4	-8,1	-5,5	-5,3	-15,3	-3,7	-0,9	-4,4	-4,2	1,8
2021	4,0	:	7,1	4,2	10,2	3,5	10,5	12,4	5,9	7,4	3,0	8,1	11,0

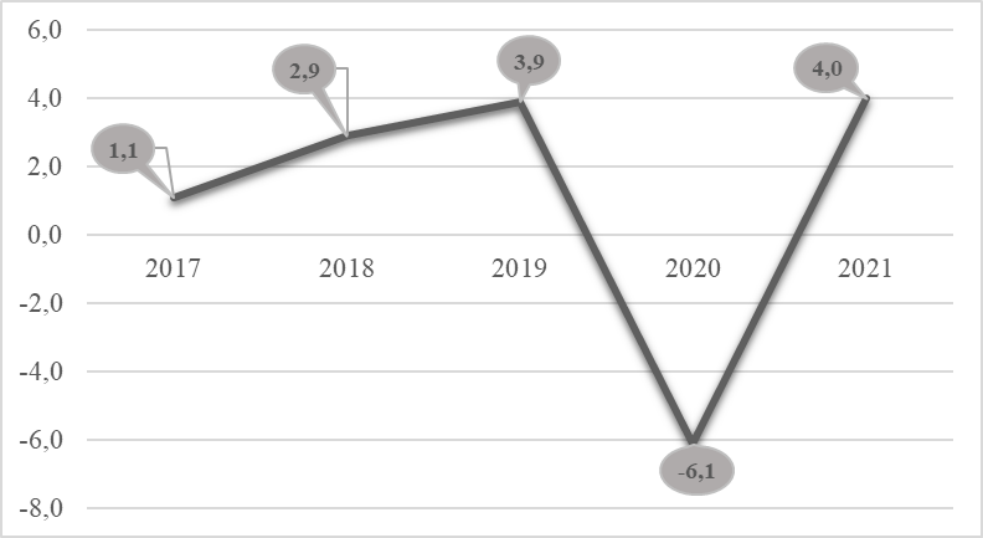
Source: Ministry of Finance, Republic of North Macedonia, https://finance.gov.mk/indicators-and-projections/?lang=en (access date 12.10.2022).

North Macedonia is a small open economy. Since it became independent in 1991, it has had to face many political and economic challenges. At the same time, in recent years, the economy has first dealt with the problem of establishing macroeconomic stability by slowing down inflation.

This was followed by the military conflict and the effects of the 2009 global financial crisis. In general, in the past period, the economy recorded positive economic growth, with certain oscillations of reductions and negative growth rates. In 2009, the negative rate of -0.9% was quickly reversed and already in 2010 there is a positive growth which continues until 2019, with the exception of 2012 (-0.5%). (Djambaska and Lozanoska, 2023)

The decrease in economic activity as a result of the health crisis immediately reflected a decrease in GDP and economic growth in North Macedonia. The rate of economic growth in 2019, when it was 3.9%, decreased in 2020 and amounted to -6.1%. In 2021, its value is positive and is 4%. The forecast for 2022 is that it will decrease to 3.2%. (Figure 1) Despite the positive trend of economic growth, that growth is not sustainable in the long term and higher growth rates are needed to stimulate the development of the economy.

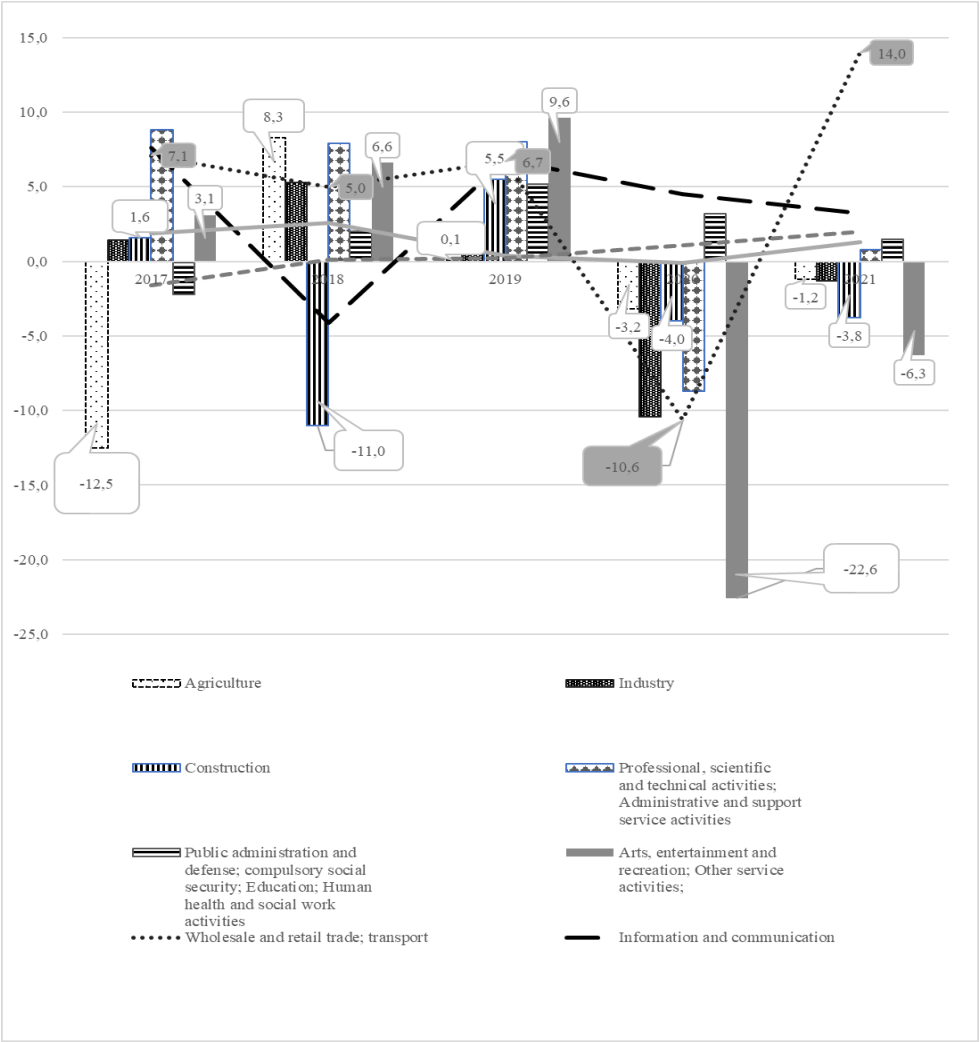
Figure 1: Economic growth rate in North Macedonia, 2017-2021



Source: Republic of North Macedonia, State Statistical Office, https://www.stat.gov.mk/PoslednoObjavenoVoMakstat_en.aspx, (access date 1.10.2022).

Dominant sector that creates GDP are Wholesales and Retails with Transport and Storage, Industry, Construction and Agriculture. The share of Wholesales and Retails with Transport and Storage activities was between 7.1 % in 2017, 5 % in 2018 and 6.7 % in 2019. Construction share was 1.6 % in 2017, then negative -11 % in 2018 and 5.5 % in 2019.

Figure 2: Chare of sectors in GDP in the North Macedonia, 2017-2021



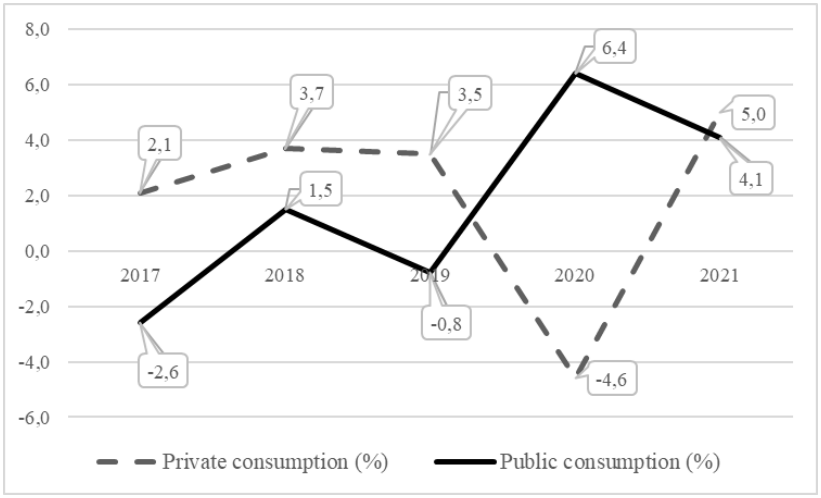
Source: Republic of North Macedonia, State Statistical Office, https://www.stat.gov.mk/PoslednoObjavenoVoMakstat_en.aspx, (access date 1.10.2022).

The contribution of sectors to GDP creation during the pandemic shows negative indicators for industrial production, unfavorable movements in trade, transport and hospitality. In addition, participation in arts, entertainment, recreation and other service activities is an area that is significantly impacted by the COVID-19 crisis. For 2020, the participation of all these sectors is

negative. The most affected sector is art, entertainment, recreation and other service activities and accounts for -22.6% of GDP. The industry (-10.4%) and wholesale and retail trade, transportation and hospitality (-10.6%) recorded significant changes in 2020, the first year of the pandemic. (Figure 2)

They reflect the situation with reduced economic activity during the health crisis. Trade, construction and construction activities, as well as the agricultural sector are the driving sectors of the economy, whose participation in economic activity fluctuated during 2020 and 2021. In the wholesale and retail trade sector, along with transport and hospitality, the change is most noticeable and the participation in 2021 is positive and is 14%.

Figure 3: Private and public consumption in the North Macedonia, 2017-2021



Source: Ministry of Finance, Republic of North Macedonia, https://finance.gov.mk/indicators-and-projections/?lang=en (access date 12.10.2022).

State Statistical Office of the Republic of North Macedonia, Statistical Review 02.03.2022 Year LX, No: 3.1.22.03, (access date 12.10.2022).

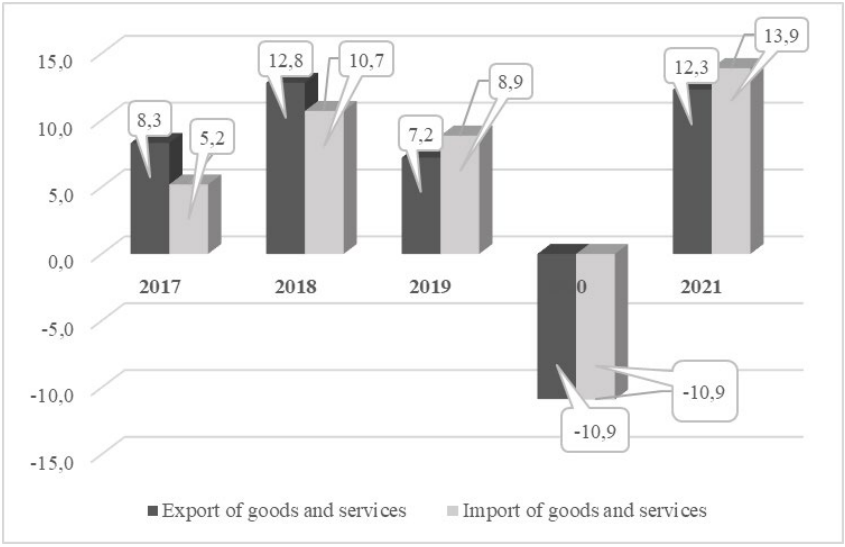
From 2006 to 2017, public consumption was dominant. During 2018 and 2019, private consumption stimulated aggregate demand. During the pandemic years, private (personal) consumption recorded a decline. (Figure 3) The data clearly show that the GDP of these years results from the contribution of government consumption to the creation of aggregate consumption. The active role of the State in the economy, in terms of total consumption, is reflected by government consumption. At the same time, the active consumer is the state and public

consumption was expressed through increased costs for health services, procurement of materials needed to deal with the health crisis. In terms of encouraging private consumption, measures and activities have been used to boost it, as active economic measures for businesses and households.

Since the North Macedonia is a small open economy, external trade is very important. Between 2017 and 2021, the import and export of goods and services is consistent with movement trends. The export of goods and services with participation ranges from a maximum of 12.8 % in 2018 to negative -10,9 % in 2020. Thus, the import of goods and services in 2017 was 5.2 %, and in 2020 it reached a value of -10.9 %. (Figure 4)

The beginning of the pandemic and the first measures of isolation to prevent the spread of the virus, led to a reduced flow of goods and services between countries, which was immediately reflected in the reduction of exports and imports.

Figure 4: Export and import in the North Macedonia, 2017-2021



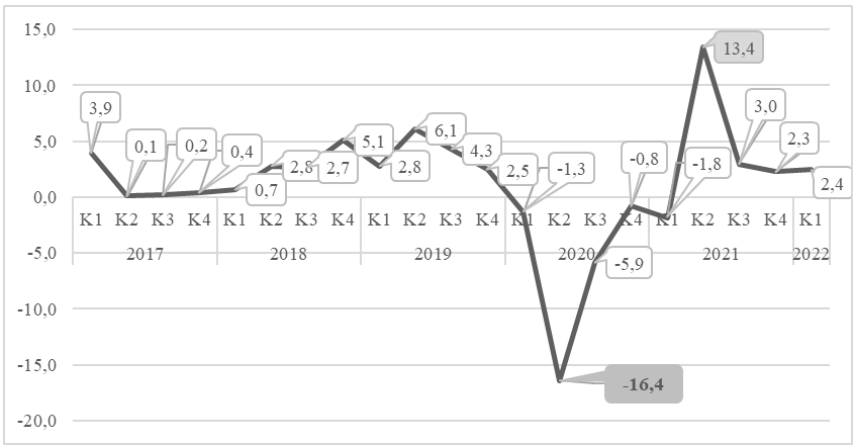
Source: Ministry of Finance, Republic of North Macedonia, https://finance.gov.mk/indicators-and-projections/?lang=en (access date 12.10.2022).

State Statistical Office of the Republic of North Macedonia, Statistical Review 02.03.2022 Year LX, No: 3.1.22.03, (access date 12.10.2022).

This situation was to be expected because the borders were closed and there was a limited entry and exit only for certain categories of goods and services. In 2021, this situation has changed and exports (12.3 %) and imports (13.9 %) record positive values.

Shifts in economic activity because of the pandemic are more visible with quarterly economic growth data. In the first quarter of 2020, the rate of economic growth in the North Macedonia is -1.3 %. The first quarter actually expresses the initial shock that the pandemic caused on economic activity. Data on economic growth and the impact of the emergence and spread of the virus point to a sharp decline in economic activity. Also, the measures taken by the Government of the Republic of North Macedonia to prevent the spreading the virus, as movement restrictions, closure of shopping centers and restaurants restrictions on movements, contributed to the reduced economic activity in this quarter of the year. As a result, the growth rate in Q2 2020 was -16.4 %. The third quarter of the year has already registered some positive changes and the economic growth rate is -5.9 %, whereas in the fourth quarter it is -0.8 %. (Figure 5).

Figure 5: Economic growth rate in North Macedonia, 2017-2021 (quarterly data)



Source: Source: Ministry of Finance, Republic of North Macedonia, https://finance.gov.mk/indicators-and-projections/?lang=en (access date 12.10.2022).

State Statistical Office of the Republic of North Macedonia, Statistical Review 02.03.2022 Year LX, No: 3.1.22.03, (access date 12.10.2022).

The third quarter of the year has already recorded certain positive changes and the rate of economic growth is -5.9 %, while in the fourth quarter it is -0.8%. There was also negative economic growth of -1.8 % in the first quarter of 2021. Data for the second quarter of 2021 is especially encouraging for the economy, whose growth rate is 13.4 %. Positive changes are also visible in the third and fourth quarters of the same year, confirming the optimistic prospects for a recovery in economic activity.

Throughout 2020, private (personal) consumption recorded decreases compared to the same period last year, where in the third quarter of 2020 it was -4.6 %, and already in the fourth quarter it was -3,8 %. This data clearly indicates that GDP in 2020 results from the contribution of public consumption to the creation of overall consumption. The share of government consumption in 2020 fluctuates between 7.1% in the first quarter, 6.2% in the second quarter, 9.7% in the third quarter and 3.1% in the fourth quarter. The position vis-à-vis private and public consumption is changing in 2021. Thus, in Q1, the share of both types of consumption is negative at -0.3%. In the next three quarters of 2021, private consumption stabilizes, and is the driving force for the rate of economic growth (Q2 is 12.4%, Q3 is 2.4%, Q4 is 5.7%). At the same time, government consumption also accounts for 5.2% (Q2), 4.9% (Q3) and 6.5% (Q4). This indicates a positive trend in total final consumption. (Table 2)

Table 2: Public and private consumption in North Macedonia, 2020-2021 (quarterly data)

Year	Qarter (Q)	Final Consumption		
		Total	Private	Public
2020	Q-1	2,8	1,8	7,1
	Q-2	-8,0	-11,0	6,2
	Q-3	-2,2	-4,6	9,7
	Q-4	-2,6	-3,8	3,1
2021	Q-1	-0,3	-0,3	-0,1
	Q-2	11,0	12,4	5,2
	Q-3	2,9	2,4	4,9
	Q-4	5,8	5,7	6,5

Source: Ministry of Finance, Republic of North Macedonia, https://finance.gov.mk/indicators-and-projections/?lang=en (access date 12.10.2022).

The pandemic has affected the export and imports in the Republic of North Macedonia. Quarterly changes in exports and imports were most noticeable in Q2 2020. Exports of goods and services as a share of GDP amounted to -31.5%. Imports of goods and services decreased by -29.8%. Nearly one-third of the decline in economic activity was due to lower exports and imports in Q2 2020.

Table 3: Export and import of goods and services in North Macedonia, 2020-2021, (quarterly data)

	2020		2021	
	Exports of goods and services	Imports of goods and services	Exports of goods and services	Imports of goods and services
Q-1	-6,2	-4,2	7,8	2,0
Q-2	-31,5	-29,8	45,5	46,6
Q-3	-7,9	-2,8	4,1	2,7
Q-4	1,8	-7,6	1,8	13,5

Source: Ministry of Finance, Republic of North Macedonia, https://finance.gov.mk/indicators-and-projections/?lang=en (access date 12.10.2022).

This situation is not surprising in light of the measures taken to close the borders and the movement of goods and passengers. With the abolition of certain measures and the loosening of protocols for COVID-19 in Q2/2021, exports and imports immediately recorded positive changes and their participation in GDP is 45.5% and 46.6%, respectively.

Trade, transport and storage, hospitality showed the biggest changes in 2020 in the second quarter -31.1%. Starting in Q3 2020 and 2021, there have been positive changes in this sector, ranging from 5.7% in Q3 2020 to 1.9% in Q4 2020. It held the largest share in the second quarter of 2021 and accounted for 46.4%. The arts, entertainment, recreation and other services sector decreased by -33.2% in Q3 2020. The participation of this sector in the first half of 2021 is negative, but it is decreasing (Q1/2021 is -17.2%, Q2/2021 is -7.9%), and already in Q3/2021 it has been 2.6% and in Q4/2021 it is 0.4%. (Table 4)

Table 4: Share of sectors in GDP in North Macedonia, 2020 and 2021 (quarterly data)

Year		Agriculture	Industry	Construction	Trade, transport and storage, hospitality	Information and communications	Financial and insurance activities	Real Estate Activities	Professional, scientific and technical activities	Public administration and defence	Arts, entertainment, recreation and other services
2020	Q-1	-2,4	-8,1	1,1	-3,8	13,8	1,6	4,4	-6,3	2,7	-10,8
	Q-2	-1,7	-27,5	-14,7	**-31,1**	-2,4	-4,9	-2,0	-9,9	3,6	-20,7
	Q-3	-0,4	-9,1	1,3	-5,7	5,0	0,6	-1,1	-11,3	2,7	**-33,2**
	Q-4	-7,0	3,2	-3,2	-1,9	2,2	2,4	2,9	-7,3	3,7	-25,6
2021	Q-1	0,4	-6,2	3,9	-2,1	1,1	0,5	1,2	-2,9	-0,2	-17,2
	Q-2	-0,6	11,9	-2,4	**46,4**	7,3	5,2	3,0	2,1	2,4	-7,9
	Q-3	1,2	-4,5	-1,5	11,0	-0,7	-1,8	0,7	2,6	2,2	2,6
	Q-4	-4,6	-3,6	-9,9	9,2	5,3	1,7	3,1	1,6	1,6	0,4

Source: Ministry of Finance, Republic of North Macedonia, https://finance.gov.mk/indicators-and-projections/?lang=en (access date 12.10.2022).

The analysis of GDP, according to the quarterly data, shows that the most affected sectors from the pandemic are trade, transport, hospitality and catering, art and other service activities. The restructuring of the economy with increased participation from sectors which create greater value added and a stable basis for economic growth and development, is imminent. In addition, restructuring is required to create an economy that will be more resilient to future shocks and instabilities, both internal and external.

3. LABOR MARKET FLUCTUATIONS DUE TO PANDEMIC IN NORTH MACEDONIA

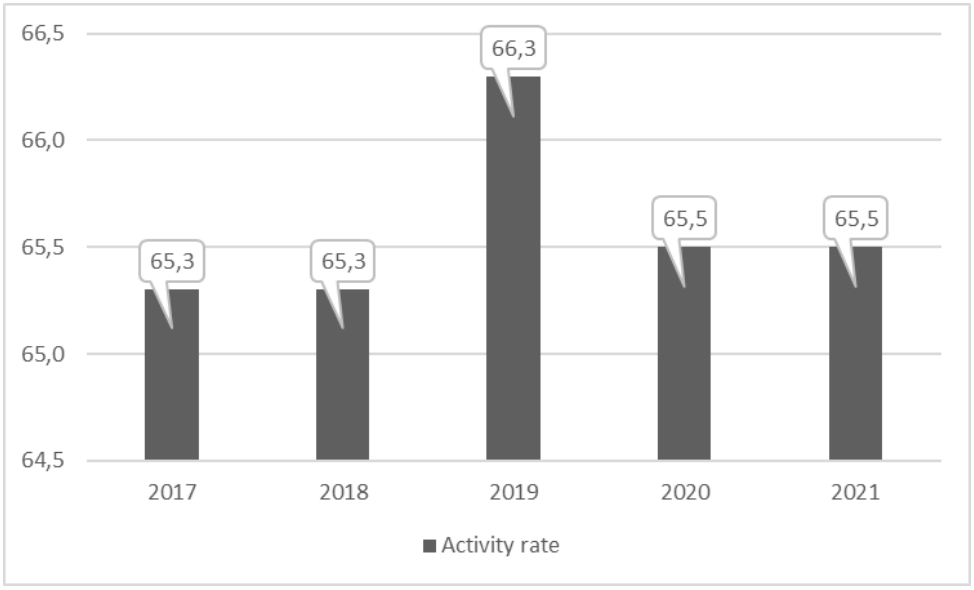
Labour market analysis would have to be done over a longer period of time. However, as part of the methodology for this research, we also limit this analysis to the period 2017 - 2021. Several relevant conclusions can be drawn from the analysis of the changes in the labour market in the North Macedonia in the period before the COVID-19 pandemic.

The available data for the period 2000-2019 show that despite the evident oscillations in the growth of the working-age population from year to year, its growth significantly decreases during the period after 2006. On the other hand, contrary to the continued growth of the labour force, the inactive part of the healthy population is declining, although its volume is still very high. The data confirm the reduced impact of demographic trends on the working population

and the formation of the labour force. These changes are in line with the process of aging (Djambaska and Lozanoska, 2023).

The pandemic also had its impact on the labor market. Data on annual changes in the labor market show that in the period 2019-2021, the working population aged 15 to 64 years decreased by more than 14.500 people, the active population of almost 21.000 people, while the inactive population increased by more than 6.400 people. This results in a shift in rates. The activity rate from 66.3 % (2019) decreased to 65.5 % (2021) (Figure 6).

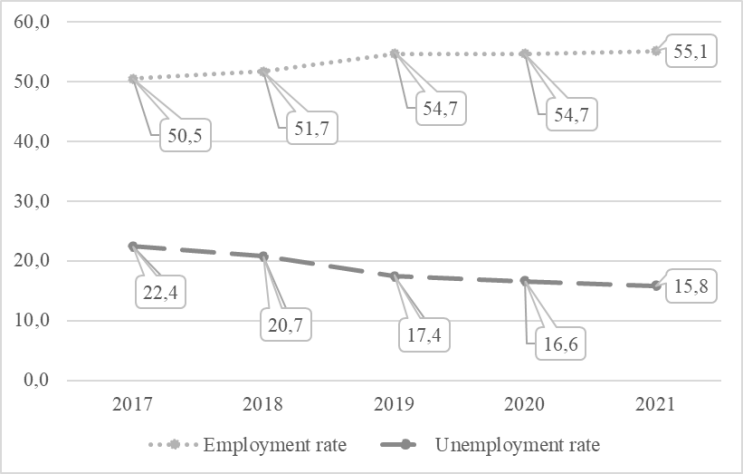
Figure 6: Activity rate in North Macedonia, 2017-2021



Source: Republic of North Macedonia, State Statistical Office, https://makstat.stat.gov.mk/PXWeb/pxweb/mk/MakStat/?rxid=46ee0f64-2992-4b45-a2d9-cb4e5f7ec5ef (access date 1.10.2022)

The employment rate tended to fall until 2004 and then continued to rise to 54.7 % in 2019. Therefore, employment rate, from 54.7 % in 2019 and 2020, increased to 55.1 % in 2021. Changes in the unemployment rate are somewhat more pronounced. Namely, it decreased from 17.4% (2019) to 15.8% (2021) (Figure 7).

Figure 7: Employment and unemployment rate in North Macedonia, 2017-2021



Source: Republic of North Macedonia, State Statistical Office, https://makstat.stat.gov.mk/PXWeb/pxweb/mk/MakStat/?rxid=46ee0f64-2992-4b45-a2d9-cb4e5f7ec5ef (access date 1.10.2022)
*Employment rate is calculated for persons aged 15 to 64.

Available data show that employment in 2020 declined significantly and that the total number of employees reached its lowest level in the third quarter (785.561 people). In 2021, the development trend of the labor market in the country changes and the number of employees begins to increase, which reaches the highest value in Q3 (796.681 people). These changes are also characteristic of the employment rate, which only declined in the first quarter 2020, while it increased in the remaining quarters. Unemployment in the period 2020-2021 is characterized by a continuous downward trend starting from Q3/2020 (Table 5).

Table 5: Employees and unemployed in North Macedonia, 2020-2021 (quarterly data)

	Employees		**Unemployed**	
	2020	**2021**	**2020**	**2021**
Q-1	811.106	793.121	156.627	150.843
Q-2	793.416	795.271	159.623	150.141
Q-3	785.561	796.681	155.575	148.477
Q-4	789.552	795.276	151.972	142.206

Source: Republic of North Macedonia, State Statistical Office, https://makstat.stat.gov.mk/PXWeb/pxweb/mk/MakStat/?rxid=46ee0f64-2992-4b45-a2d9-cb4e5f7ec5ef (access date 1.10.2022)

These changes are evidence that the COVID-19 pandemic has resulted in some reduction in employment and some increase in unemployment. While some changes have taken place, they have not been as significant as anticipated. That, among other things, is due to the measures taken by the government to overcome the crisis and the changes that occurred in the labour market. It is expected that, over the next period, the problems associated with still high unemployment and relatively low employment will persist. They will be followed by an even more pronounced mismatch of labour supply and demand, especially as a result of the ever-increasing shortage of skilled workers.

Creating appropriate policies and measures on the labour market, to overcome the problems that arose from the COVID-19 pandemic, should take into account the reduction and continuous aging of the working-age population and the labour force, then the intensive emigration from the country, especially of young and middle-aged working-age population, as well as the consequences of the world economic and energy crisis, which are also reflected on the Macedonian economy.

4. INFLATION IN NORTH MACEDONIA IN TIMES OF PANDEMIC

One of the most urgent issues facing the global economy today is inflation. As a consequence of the pandemic and working conditions with disrupted supply chains and limited movement of products and services, economies had to deal with inflation and the problems it causes. In addition, the military conflict of Ukraine and Russia, as well as the problems with the energy crisis caused pronounced changes in the level of wholesale and retail prices and intensified inflation. The data for the previously selected countries are presented in Table 6. In 2017, we have low inflation in all analyzed economies. It is only in Türkiye that inflation is double-digit and has reached 11%. Among the other economies, in the same year, an inflation rate of 3.3% was registered in Serbia, and the lowest rate was recorded in Romania with 1.1%. Bulgaria and Bosnia and Herzegovina have a rate of 1.2%, compared to 1.3% in Croatia.

Table 6: Inflation in the selected countries, 2017-2021

Year	North Macedonia	Albania	Bosnia and Herzegovina	Bulgaria	Croatia	Czech Republic	Kosovo	Montenegro	Romania	Serbia	Slovakia	Slovenia	Türkiye
2017	1,4	2,0	1,2	1,2	1,3	2,4	1,5	2,8	1,1	3,3	1,4	1,6	11,1
2018	1,5	2,0	1,4	2,6	1,6	2,0	1,1	2,9	4,1	2,0	2,5	1,9	16,2
2019	0,8	1,4	0,6	2,5	0,8	2,6	2,7	0,5	3,9	1,9	2,8	1,7	15,5
2020	1,2	1,6	-1,0	1,2	0,0	3,3	0,2	-0,8	2,4	1,8	2,0	-0,3	12,3
2021	3,2	2,0	2,0	2,9	2,7	3,3	3,4	2,5	4,1	4,0	2,8	2,0	**19,4**

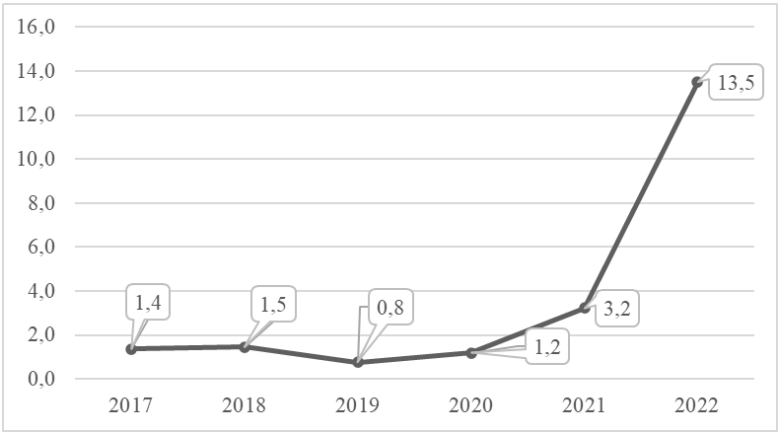
Source: Ministry of Finance, Republic of North Macedonia, https://finance.gov.mk/indicators-and-projections/?lang=en (access date 12.10.2022).

In the second year of the pandemic, in 2021, we saw a rise in wholesale and retail prices, resulting in higher inflation rates in all those countries. Thus, Türkiye has the highest inflation rate this year, at 19.4%. Slovenia, Bosnia and Herzegovina and Albania have the lowest rate, 2%.

The period after independence of North Macedonia, was characterized by hyperinflation, which after 1995, as a result of the established monetary discipline and implemented stabilization measures, was brought under control and had low values. In 2008, because of the events of the financial crisis, inflation recorded an increase, but it remains at one figure (8.3%). Low inflation is being maintained through 2022 (Djambaska and Lozanoska, 2023).

North Macedonia is facing increasing inflation. The data show an increase in inflation from 0.8 % (2019) to 1.2 % (2020) and 3.2 % (2021). According to the predictions of the Ministry of Finance of North Macedonia, the annual inflation will reach 13.5% in 2022 (Figure 8).

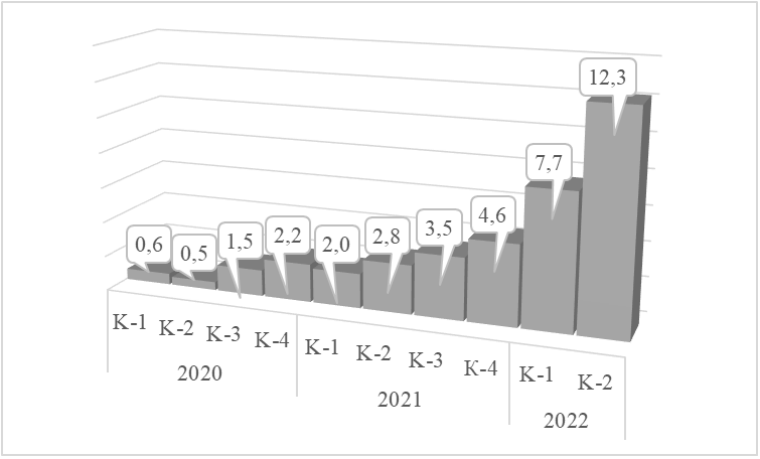
Figure 8: Inflation in Republic of North Macedonia, 2017-2021



Source: Ministry of Finance, Republic of North Macedonia, https://finance.gov.mk/indicators-and-projections/?lang=en (access date 12.10.2022).

This trend is evident in the following quarters of the 2021 (Figure 9). Above all, it is the result of the increase in the prices of alcoholic beverages and cigarettes in the second half of 2021, as well as the increased prices of restaurant and hotel services, the costs of housing, water supply, electricity, gas and other fuels.

Figure 9: Inflation in the Republic of Macedonia, 2020-2022 (quarterly data)



Source: Ministry of Finance, Republic of North Macedonia, https://finance.gov.mk/indicators-and-projections/?lang=en (access date 12.10.2022).

During this period, an increase in food prices is observed, especially for fruits and vegetables, as well as for cooking oil and cereals. The prices of health products and services also had a large share and impact on the growth of the inflation rate in the past period.

If we take into account that this growth trend continues in the first half of 2022, (19.6% in Q3 and 21.7% in Q4) we are talking about inflation caused by the lack and volatility of world prices of key products, raw materials and fuel.

5. CHANGES IN THE QUALITY OF LIFE DURING THE PANDEMIC PERIOD IN NORTH MACEDONIA

The previously elaborated changes in the Macedonian economy also affected the quality of life of the population. Thus, according to human development index, as an indicator of the quality of life, North Macedonia is in 78th place on the list of 191 countries and belongs to the category of countries with high human development. The increasing trend of this human development index for Macedonia is present from 2010 until 2019. In the pandemic years 2020 and 2021, a decrease in the value of the index is observed (0.774 in 2020 and 0.770 in 2021).

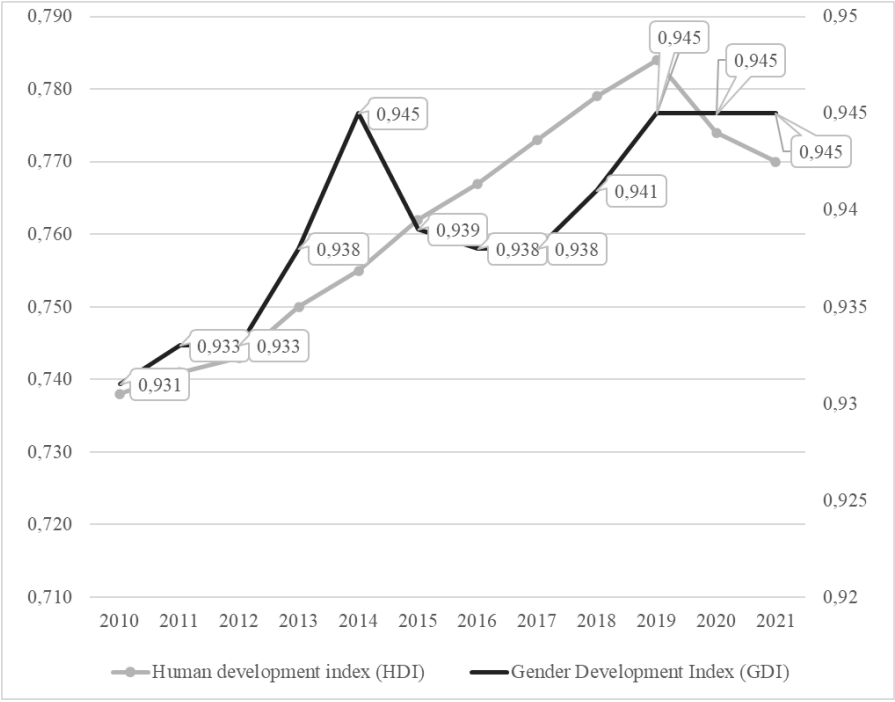
This situation is quite expected because, first of all, the pandemic had a devastating effect on people's health. Deteriorated health condition, especially for the elderly and chronically ill, vaccine unavailability, an increased number of deaths as a result of COVID-19, as well as an increased patient of chronic diseases that, due to the focus of the health sector mainly on COVID - 19 patients, reduced the life expectancy in North Macedonia. The inflation, also, has huge impact on the standard of living and the quality of life.

In other words, life expectancy at birth in 2019 was 77.3 years, in 2020 it decreases to 75.2 years, and already in 2021 to 73.8 years. Expectation of schooling is 13.6 years, and GNI per capita is $15,918 (based on the 2017 PPP). Therefore, the value of the Human Development Index in the Republic of Northern Macedonia for 2021 is 0.770. This cancels the progress that has been achieved in the past 17 years in terms of life expectancy of people and the index is the same value as 2004.

Women's life expectancy is higher than men's and that ratio remains even in these pandemic years, with women's life expectancy in 2021 decreasing from 79.5 years in 2019 to 77.5 years in 2020 and 76.2 years in 2021.For men, the

life expectancy calculated by the human development index is 70.6 in 2019, 72.9 in 2020 and 71.7 in 2021.

Figure 10: HDI and GDI in the Republic of Macedonia, 2010-2021



Source: UNDP, https://hdr.undp.org/data-center/specific-country-data#/countries/MKD (access date 12.10.2022).

Based on calculations for 2020, the human development index in North Macedonia is 0.750 for women and 0.794 for men. At the same time, human development index by gender (GDI) is 0.945 (2020). For 2021, the HDI is calculated to be 0.746 for women and 0.789 for men. The value of GDI in 2021 remains the same as in 2020. Therefore, the economy is part of the third group, a group of countries that have an average level of human development by gender. The less favorable position of women compared to men during the period of the health crisis is primarily due to the increased responsibilities in the household due to online teaching of children and work from home for family members, the increased work around the care of the household. The gap between men and women also deepened in the labor market, because some women had to take care of children under 10 years old due to the closure of

kindergartens and schools, which led to termination of employment, refusal to renew the employment contract, salary reduction, etc.

The quality-of-life indicators of North Macedonia show relatively high values and rank the country in the group of countries with a high average level of human development. However, all indicators show the negative impact of the pandemic, which is first of all reflected in a reduced human development index, since its impact on the health of the population was mostly reflected in a reduction in life expectancy. At the same time, gender inequality was emphasized even more in terms of the active role of women in the labor market and unpaid domestic work.

6. TOTAL FACTOR PRODUCTIVITY IN NORTH MACEDONIA

The situation shown for North Macedonia indicates an economy that has recorded positive rates of economic growth, a strong workforce and macroeconomic stability expressed by low rates of inflation. Despite this, the Macedonian economy felt a great negative impact from the health crisis. The general conclusion is that economic growth, although showing positive values, is still modest and not sustainable in the long term. This leads to the conclusion that macroeconomic stability is important, but not a sufficient assumption for dynamic and sustainable growth and that there are limiting factors of growth in the economy, which should be clearly identified and appropriate ways and approaches to overcome them should be found. Encouraging economic growth and achieving a higher level of economic development in North Macedonia is highly dependent on productivity.

Therefore, using the basic Cobb - Douglas production function, we calculate the total factor productivity in North Macedonia. The average growth of GDP (Y) decomposes the three basic components of the production function: labor (L), capital (K) and productivity (TFP). The Cobb – Douglas production function used in this research is:

$$Y = AK^{1/3}L^{2/3}$$

According to this, the equitation can be written as:

$$\frac{dY}{Y} = \frac{dA}{A} + 0.33\frac{dK}{K} + 0.67\frac{dL}{L}$$

Where, dY/Y ; dA/A ; dK/K ; dL/L represent the percentage rate of change for some time (1 year), $dX/X = (X_t - X_{t-1})/X_{t-1}$, respectively. This formula measures the contribution of capital, labour and productivity residual (TFP). In this formula A represent the productivity residual according to Solow's growth model. One of the negative aspects of using growth accounting is the fact that productivity residual (TFP) is unable to be decomposed (Eftimoski and Petrevski, 2003).

The Solow – residual (TFP) is used as a measure of technical progress. Total factor productivity changes for various reasons. Very often the cause of the change is the growth of knowledge that leads to changes and improvements in the production methods. Many other factors, such as education and state intervention, raise the residual. For example, higher government expenditures improve the quality of education. Hence, this rises the qualifications of the labour force and their productivity, which leads to production increase. It is very important to take that into account, particularly when it comes to finding ways to increase TFP.

According to the analysis for the period 2000 - 2020, the average growth rate of GDP is 4,97%, the average growth of the employment rate is 1,86%, while of the physical capital is 6,17%. According to the calculations, the contribution of the factors to the economic growth is the following: contributions of capital intensity is 1,25%, contributions of labour composition is 2,04% and productivity noted as TFP 1,69% (Table 7).

Table 7: TFP calculations in Republic of North Macedonia, 2000-2020

Average growth rate of GDP	4,97%	Contributions of capital intensity	1,25%
Average growth rate of labour	1,86%	Contributions of labour composition	2,04%
Average growth rate of capital	6,17%	Total Factor productivity - TFP	**1,69%**
		GDP	**4,97%**

Source: own calculations

***** The calculations use data from the State Statistical Office of the Republic of North Macedonia. Real GDP (Y) are expressed in national currency, in millions denars. The labor (L) as factor of production is expressed as number of employees in the total working population old 15 years and more, using the

data from the Labour Force Survey of the Republic of North Macedonia. Physical capital (K) is determined as GDP with a year of lag.

Total factor productivity in the Republic of North Macedonia is low. "Low productivity, points to the unsustainability of growth in North Macedonia. Above all, the achieved economic growth rates are the result of the intensification of the labour and capital. Also, the real GDP growth are financed with the increased public debt in the last decade. Low productivity means reduced and insufficient investment in education and research and development that directly affects the quality of the human capital."(Djambaska and Lozanoska, 2021).

7. CONCLUSION

According to a comparative analysis of selected macroeconomic indicators, the COVID-19 pandemic and the global slowdown have had a severe impact in North Macedonia. Macroeconomic stability is the main objective, considering the problem of inflation, the increase in public debt and political instability. Economic growth has obviously changed positively, but its sustainability and its impact on the quality of life in North Macedonia are important objectives to reach. Policy and measures that increase productivity are one way to meet these objectives.

The findings of the research show that the challenges facing the Macedonian economy are numerous. It is necessary to maintain macroeconomic stability, curb inflation, reduce unproductive government spending, increase capital investment and encourage private sector investment. The focus should be placed on supporting the most productive sectors of the economy that create greater added value, as well as those industrial branches that will be the bearers of economic recovery.

It is extremely important to increase productivity through investments in human capital, through encouraging research and development of new technologies, as well as through greater digitization of work processes. For a more efficient functioning of the labor market, measures should be taken that will allow to reduce the discrepancy between the supply and demand of labor and the lack of qualified workers. This means making changes in formal and informal education and adapting educational programmes to the needs of the labour market. The research showed that the emigration abroad, especially of the young and middle-aged population, is a factor that has an additional negative impact on the labor market, and thus on economic growth.

When creating individual policies and measures, it is necessary to take into account the demographic structure of the country's population, especially in the context of the reduction of the working-age population and the labor force, and the intensive aging of the population. The pandemic and the analysis showed that reforms and improvement of the health sector are needed, as well as measures for greater support of agricultural production. This is particularly problematic in the context of the current military and energy crisis that has resulted in food shortages. However, it is a fact that the recovery of the Macedonian economy and the stimulation of economic growth are additionally conditioned by the prolongation of the pandemic, the slowdown of economic activity, the increase in inflation, as well as the intensification of the energy crisis.

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FINANCIAL SUPPORT IN AGRICULTURE DURING PANDEMIC IN REPUBLIC OF NORTH MACEDONIA

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Abstract: *The agriculture sector in North Macedonia during pandemic was strongly influenced by market restrictions, lack of seasonal workers, restriction of movement, difficulties in the organization of transport and logistics. On the other hand, it shows greater resilience compared to other economic segments during the restrictions introduced at the beginning of the COVID-19 pandemic. The economic downturn, however, exacerbated the financial vulnerability of smallholder farms, drastically reducing available sources of income and employment. While the sources of financing in agriculture in North Macedonia are already poor, the global pandemic impact would result in the sort of collapse for the current trend. Thus, this paper focuses on how the impact of pandemic can be turned into an opportunity to boost agriculture financing to make the sector more resilient to it.*

Main purpose of the paper is to analyses the impact of restrictions introduced during COVID-19 pandemic and the implemented measures regarding the financial support in agricultural sector in North Macedonia in the period. Therefore, the methodology of research is based on qualitative and quantitative analyses of agricultural financing based on official data.

Analyses show that the measures to mitigate the effects of a pandemic are short-lasting and inadequately designed for agriculture. Therefore, it's important the need for a multidimensional approach and financial instruments to reinforce resilience in the agricultural sector. That means: facilitating access to financing sources, expanding their scope, and especially important is the strategic approach in financing the production of agricultural crops that are crucial in crisis conditions, such as the pandemic and the war in Ukraine.

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Keywords: *Agriculture development, financial support, pandemic crises*

JEL classification: *H1, H2, Q14, Q18*

1. INTRODUCTION

Agriculture in the Republic of North Macedonia is one of the largest sectors with a significant contribution to gross domestic product (GDP), foreign trade and public and private consumption. During pandemic was hit hard by market restrictions, lack of seasonal workers, and difficulties in the organization of transport and logistics. Also, COVID-19 has a considerable impact on the agricultural sector and potential for a food crisis.

Agriculture finance support in Republic of North Macedonia is complex and the lack of access to finance is one of the many challenges that agribusiness managers are facing. The pandemic additionally disrupt the access to financing sources in terms of access to favorable fond or credits to cover the losses caused by reducing production and canceling the agreed purchase. The development of the sector is determinate by the need of ensure sources of funding which at this sector are limited. The financial support is realized on two levels:

- state - through the program for financial support of agriculture and rural development and
- commercial - through crediting.

It's clear that the sources of financing in agriculture in North Macedonia are poor and COVID-19 has a considerable impact on the sector. Due to the crisis, micro-level financing for agriculture will start dropping, which will raise the financing gap. Particularly, farmers are having more trouble getting finance now than they did before COVID 19.

Main goal of the paper refers to the impact of restrictions introduced during COVID-19 pandemic and the measures regarding the financial support in agricultural sector in North Macedonia, implemented in the period. Also, the paper highlights issue and seeks to answer on how the impact of pandemic should be used as an opportunity to boost the agricultural financing for more resilient sector.

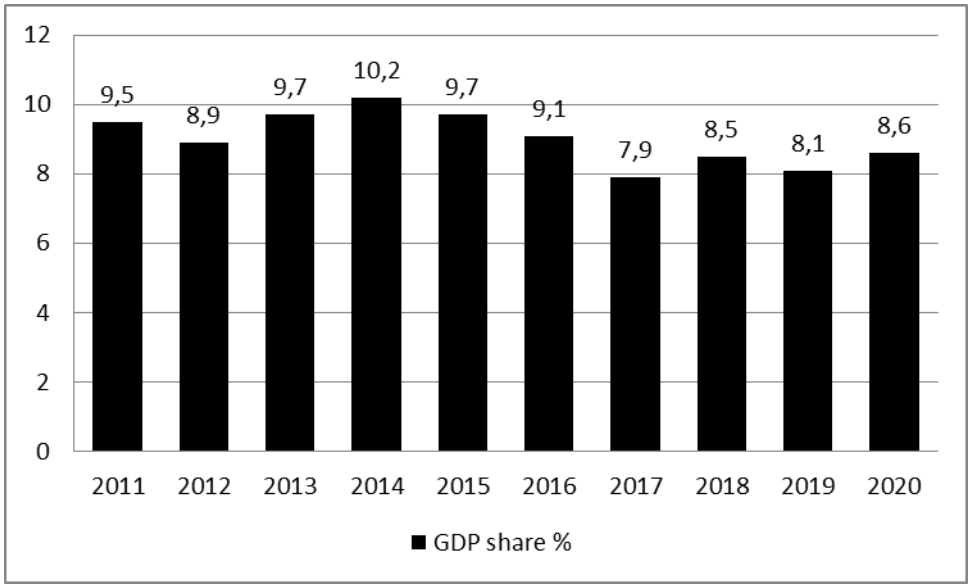
The methodology of research is based on quantitative and qualitative analyses of agricultural financing and the perceived effects of COVID-19 on the sector. Based on official data obtained from the State Statistical Office, Annual reports

of the Ministry of Agriculture, Forestry and Water Management and data from the Agency for Financial Support of Agriculture and Rural Development the paper discusses policy implication of the recent trend. At the end, some recommendations are proposed in terms to increase agricultural financing in North Macedonia.

2. MAIN CHARACTERISTIC OF AGRICULTURAL SECTOR IN REPUBLIC OF NORTH MACEDONIA

The agriculture sector represents an activity that has a comparative advantage over others because it exclusively provides food for the population. The development of agriculture is very important because it provides income and employment to the population from rural areas and contributes significantly to the development of foreign trade. Agriculture is one of the four dominant sectors that contribute to economic growth in the Republic of North Macedonia and has constant contribution of about 9% in the national GDP (Figure 1), includes 19% of employed population and share of 9% from the total foreign currency income from exports of goods.

Figure 1: Participation of agriculture, fisheries and forestry sector in the real GDP for period 2011-2020 (in%)

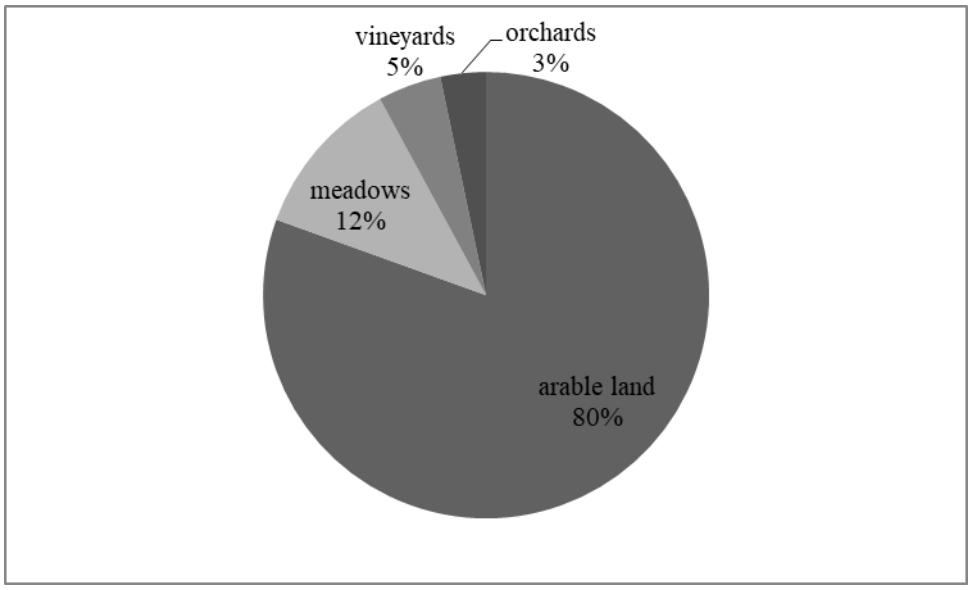


Source: State Statistical Office of Republic of North Macedonia, https://www.stat.gov.mk/pdf/2022/3.1.22.14_mk.pdf, 30.10.2022

Agricultural production, especially of an intensive nature such as gardening and viticulture, takes place in the southern parts of the country under the influence of the Mediterranean climate, in the valleys along the course of the largest rivers and the surrounding hilly terrains that have fertile soil composed of sediments. In the areas with a continental climate, there are conditions for the production of cereal crops and fruit growing, while in the mountainous regions the predominant activity is livestock production of a traditional type.

Agricultural land in Republic of North Macedonia with 1.26 million ha (in 2021) occupies half of the total area of the territory, while 44% is land under forests. About 60% of the agricultural land belongs to pastures and the rest with an area of 520.000 hectares is cultivated agricultural land which is the basis for agricultural production. (Statistical Yearbook, 2022) Of the total cultivated land in 2020, arable land and orchards cover 416.070 ha or 80.5%, meadows 59.898 ha or 11.6%, vineyards on 23.976 ha or 4.6% and orchards on 17,095 ha or 3.3%. (Figure 2) In the structure of the sown area in 2020, 58% belongs to cereal crops, 19% to vegetable crops, 15% to fodder crops and 8% to industrial crops.

Figure 2: Cultivated land structures in 2020



Source: Statistical Yearbook of the Republic of North Macedonia, 2022, p.462

According to the data of the State Statistical Office, an increase in the shown areas compared to 2019 was observed only in industrial crops by 55 ha (sunflower by about 4%), while in other crops the areas decreased from 0.4% in cereals, 1.4 % for horticultural crops or for 681 ha and for fodder for about 2.2%. (Statistical Yearbook, 2022) The decrease in the production of grain crops is due the non-existence of purchase price on stock market and the lack of system of guaranteed redemption and timely payment, nor planned sowing or contractual production, and interventional redemption is rarely carried out, although there is a legal possibility. All this leads to a reduced use of modern technologies and investments in production and makes this subsector one of the most porous.

Regarding industrial crops, tobacco is the most important one, covering 80% of the total area under industrial crops in the country. Most of the production is located in the Pelagonia region and Southeast region with important social and economic role in sustainability of agriculture and the economy in general. High purchase prices and extended income support in the period 2015-2019 contributed to an increase in income per hectare by 16% due to the functional mechanism of production and purchase and legal solution that meets the needs of all parties in the sub-sector. On Table 1 is presented purchased quantity and purchase price of tobacco in the period 2015-2020.

Table 1: Purchased quantity and purchase price of tobacco in the period 2014-2019

Year	Purchased quantity in tones	Purchase price in denars/kg
2015	18.910	184,5
2016	25.168	196,8
2017	23.544	217,6
2018	25.230	214,2
2019	26.296	219,9

Source: Annual Report for Agriculture and Rural Development, 2020, p.39

Production of grapes and wine contributes about 20% in the total value of agricultural production. Despite the unfavorable age structure of the vineyards, as well as parcel fragmentation and the long period of low investments, grape production has seen a trend of increase. The production of wine in Macedonia takes place in 81 officially registered wineries mainly located in Skopje, Negotino and Kavadarci. Wineries processed about 65% of the total produced wine grapes, while 35% of the grapes is processed directly by the growers for their own consumption of wine and brandy. (Wine in numbers, 2020) Also,

areas under vines in the period from 2015 to 2019 increased by 7%. The production of grapes in the same period is relatively stable with an average of about 260 thousand tons per year and a yield of 11.3 tons/ha.

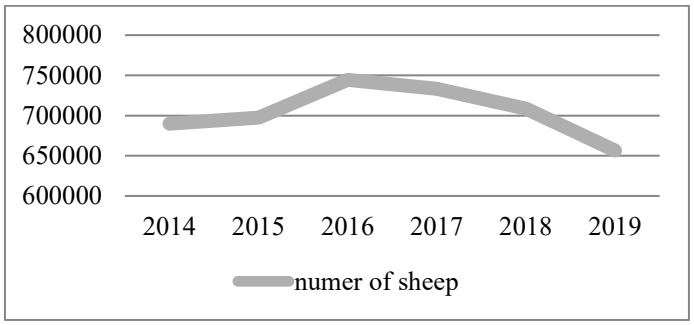
Table 2: Areas under vineyards and grape production, 2014-2019

Year	2014	2015	2016	2017	2018	2019
Areas in ha	22.726	22.718	23.192	23.398	24.088	24.468
Grape production in tones	195.888	324.769	333.319	180.349	294.497	258.960

Source: Annual Report for Agriculture and Rural Development, 2020, p.47

Republic of North Macedonia is a net exporter of lamb, therefore sheep breeding is an important branch of livestock breeding. Unfortunately, despite the favorable natural and economic conditions for development, sheep breeding has seen a declining trend. The low price of lamb contributed to stagnation and a gradual decline in the number of sheep in the period of 2015 to 2019, including the category of breeding sheep, which indicates a tendency to decrease the national herd. The decrease in the number is particularly noticeable in 2019.

Figure 3: Number of sheep in period 2014-2019



Source: Annual Report for Agriculture and Rural Development, 2020, p.49

Generally, the above data shows that the agriculture production is decreasing. Notable is decrease of production in 2017 mainly because of the climate change that the country feels the last years.

Agriculture is the most important economic activity in rural areas, that affects the alleviation of poverty and unemployment. The comparison between exclusively agricultural households, mixed households where at least one

member of the family is employed outside agriculture and households without agricultural activities, shows that mixed households have the highest incomes, followed by agricultural households and consequently non-agricultural rural households are the poorest.

Generally, the agricultural sector of Republic of Macedonia is represented by individual agricultural holdings that their economic activity is focusing on local or regional markets. Almost all enterprises of primary agricultural production are located in rural areas. Also, beverage industry (except meat processing and slaughterhouse) is located in rural areas because of the proximity of raw materials from agriculture. About half of farms are specialize in producing crops or mixed production (crop and livestock). Out of the total number of economic classified farms, more than half or 58.2% were classified in the lowest first class with incomes up to 2,000 euros and a small part in the specialized activity. (Annual Report, 2019)

Another question related to agricultural sector is the lack of finance sources. Access to finance is one of the many challenges that agribusiness managers are facing. The development of the sector is determinate by the need of ensure sources of funding which at this sector are limited. Managers can provide finance to run business by savings, landing and realized income – profit. Agriculture finance support in Republic of North Macedonia is realized on two levels: state - through the program for financial support of agriculture and rural development and commercial - through crediting. It's clear that the sources of financing in agriculture in North Macedonia are poor and COVID-19 has a considerable impact on the sector. Hence, agriculture is facing major challenges to reinforce resilience in the sector.

3. SHORT OVERVIEW OF MACEDONIAN AGRICULTURAL FINANCIAL SUPPORT BEFORE COVID 19

In the period 2014 to 2019, agriculture sector together with hunting, forestry and fishing has achieved a total increase in gross value added of 4.5%. The sector recorded a continuous annual increase in value from 871.4 million euros in 2014 to 910.9 million in 2019, except in 2017 due to the impact the weather conditions. On the other hand, the relative participation of the agricultural sector in the gross added value has decreased from 10.2% to 8.1% due to the higher added value achieved in other more propulsive economic activities. (Table 2)

Together with the manufacturing industry (including beverages and tobacco), the share of VAT in GDP reaches 12% in 2019. The participation of employees in agricultural sector in total number in the analyzed period notes a slight decrease.

Table 2: Main indicator for agriculture and rural areas for the period 2014-2019

Indicator		**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Gross Domestic product (GDP) in current prices	Million of denars	527.631	558.954	594.795	618.106	660.878	689.425
	Million of euros	8.562	9.072	9.657	10.038	10.744	11.209
Gross added value (VAT) of agriculture in current prices	Million euro	871,4	882,5	885,8	790,3	910,1	902,1
	GDP share, %	10,2	9,7	9,1	7,9	8,5	8,1
VAT on agriculture and manufacturing industry in GDP		13,0	12,3	11,9	10,7	11,4	12
Value of agricultural production at current prices in millions of denars		78.707	80.254	79.881	71.162	82.810	78.463
Employment	Total in North Macedonia	762.506	776.746	788.919	812.321	813.291	831.066
	In agriculture, forestry and fishing (AFF)	183.239	182.843	179.135	178.249	177.780	177.607
	participation of AFF in total number, %	24	23,5	22,7	21,9	21,9	21,4
Trade with agricultural foodproduct millions of euros	Export	486.2	486.7	530.52	536.2	545.5	624.5
	Import	649.0	700.6	718.0	759.8	792.1	837.1
	Trade balance	-162.8	-231.9	-187.5	-223.6	-246.6	-212.6
Annual work units (AWU), in thousand	Total	146	153	150	138	151	
	Unpaid	62	63	61	47	60	
	Paid	84	90	89	91	92	
Average annual gross salary in denars	On country level	31.325	32.171	32.821	33.987	35.626	37.263
	In agriculture	22.917	22.976	24.514	25.545	27.782	29.351
	Agriculture salary in %	73,2	71,4	74,7	75,8	78	78,8
Net value added by current		46.699	47.620	47.032	40.817	48.576	44.456

Indicator		**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
prices (NDV), millions of denars							
Labor force in agriculture in annual work units (AEU)		145.891	152.856	149.954	137.844	151.472	
NDV/GRE, in denars/GRE		320.095	311.535	313.643	296.114	320.692	
Total agricultural area, 000 ha		1.263	1.264	1.267	1.266	1.264	1.265
NDV/ha, in denars/ha		36.970	37.662	37.117	32.241	38.426	
Product subsidies, at prices from the previous year in millions of denars		5.713	5.720	5.659	6.292	6.324	6.469
Share of subsidies in VAT, %		12	12	12	15	13	14
Investments in basicmeans, in millions of denars	In AFF	3.442	3.923	3.419	2.909	3.776	4.067
	In food industry	1.911	1.856	1.960	1.664	1.634	
Depreciation of fixed assets in agriculture at prices from the previous oneyear, millions of denars		3.868	4.162	4.315	3.995	4.646	4.471

Source: Annual reposts for the period 2014-2019, Statistical state office, http://makstat.stat.gov.mk/PXWeb/pxweb/mk/MakStat/?rxid=46ee0f64-2992-4b45-a2d9-cb4e5f7ec5ef, 30.10.2022

Also, Table 1 shows that Net added value (NVA), which represents the total value generated by agricultural holdings from production activity, according to the Economic Accounts for Agriculture, has a slightly increasing trend in the analyzed period, except in 2017. There's been a slight increase in product subsidies from 5713 million denars in 2014 to 6469 million denars in 2019.The average share of subsidies in the net value of agriculture production is 13%. The highest participation of 15% in 2017 is the result of the increased amount of subsidies and the reduced VAT.

In the period 2014-2019, for the financial support policy in agriculture and rural development a total of 45,5 millions of denars or 739.9 millions of euro were paid from the national budget of the state or an average of 123.3 million of euro per year. Most of the total funds for financial support are allocated and paid for direct payment policies to support farmers' income. In the period 2014-2019, 38.377 million euros were paid for direct payments, that is, 84% on average of the total amount of all measures of state support for agriculture and rural development. The average annual amount paid is about 6.396,2 million euros in the period 2014-2019. (Table 3)

Table 3: Disbursed financial resources according to programs for the period 2014-2019 in millions of denars

Programs	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Program for financial support in agriculture	6.427	6.309	5.486	6.327	6.752	7.078
- Vegetable production	4.265	3.797	2.812	3.648	4.174	4.378
- Livestock production	1.869	2.086	2.105	2.447	2.118	2.246
- Measures for additional support (state help)	293	426	569	232	460	454
Program for financial support of the rural development	1.012	1.146	1.657	1.322	1.128	826
- Measures for financial support for rural development	966	1.011	1.537	1.224	1.036	727
- Technical support	46	135	120	98	92	99
Program for financial support of fisheries and aquaculture	48	42	20	21	16	26
IPARD	25	15	254	338	82	739
Total from national funds	7.487	7.497	7.163	7.670	7.896	7.930
Total support for the sector	7.512	7.645	7.417	8.008	7.978	8.670

Source: Annual report of Ministry of agriculture, forestry and water management for 2021, p.8

The direct payments have a positive impact on supplementing and increasing the income of agricultural producers. The support plays a key role in the sustainability of the activity for most of the Macedonian agricultural holdings, that is, it contributes to increasing the development and investment potential of those with larger production capacities and better business management. By supplementing farmers' incomes and maintaining agricultural production, direct payments also affect the provision of social stability to the rural population, especially those dealing with sub-sectors with insufficient comparative advantage or living in areas with natural limitations.

Crediting in agriculture and rural development in the Republic of North Macedonia is caring through banks and savings banks. Table 4 shows total credit placement by sector in the period 2014-2019. It is shown that most credits are placed in agriculture processing facilities which is a very good indicator for agriculture produces products that are processed in domestic processing facilities and bought by domestic commercial enterprises and deals with the purchase of agricultural products and end up on the domestic and foreign markets. It is an indicator that Republic of North Macedonia is no longer

oriented only to produce agricultural products, but processes and offers them as added value products.

Until the period of 2014 lending in the sectors of primary agricultural production and processing of agricultural products were equal, but in 2015 and 2016 the difference was doubled, i.e. it was more than 100%. This is because the measure "Interest rate subsidization", intended for credit that have an annual interest rate of up to 8% per annum, for a period of up to 10 years, for investments that are financed by the instrument for pre-accession aid in agriculture and rural development from the European Union and they are not higher than 500,000 euros.

Table 4: Total credit placements for period 2016-2019, in billion denars

	Primary production in agriculture	Agricultural processing facilities	Trade in agricultural products	Total
2014	2,2	0,9	0,3	3,4
2015	3,2	7,2	8,2	18,6
2016	3,2	7,4	7,9	18,5
2017	2,5	6,6	4,8	13,9
2018	1,2	4,.7	4,.5	10,4
2019	2,9	6,6	3,9	13,4

Source: Annual report for agriculture and rural development in Republic of North Macedonia for 2014, 2015,2016,2017,2018 and 2019, Ministry for agriculture, forestry and water management, http://www.mzsv.gov.mk/%D0%9F%D0%BE%D1%87%D0%B5%D1%82%D0%BD%D0%B0/%D0%94%D0%BE%D0%BA%D1%83%D0%BC%D0%B5%D0%BD%D1%82%D0%B8_%D0%B8_%D0%B8%D0%BD%D1%84%D0%BE%D1%80%D0%BC%D0%B0%D1%86%D0%B8%D0%B8_%D0%BE%D0%B4_%D1%98%D0%B0%D0%B2%D0%B5%D0%BD_%D0%BA%D0%B0%D1%80%D0%B0%D0%BA%D1%82%D0%B5%D1%80/%D0%98%D0%B7%D0%B2%D0%B5%D1%88%D1%82%D0%B0%D0%B8.aspx, 10.10.2022

Crediting of primary agricultural production is still insufficient. Financing of this has usually been difficult due to the fact that the borrowers do not own the assets that could potentially serve as collateral (houses, land, and other facilities), or because they do not wish to use them as collateral because they are regarded as vital to their existence. In addition, credit histories of borrowers are scarce and lack adequate information, hindering preparation of quality credit. In addition, agriculture has low profitability and high risk. Therefore it is necessary to pay attention to start-up businesses in agriculture and rural

development, especially for the most vulnerable categories of farmers such as individuals and micro and small enterprises that start agricultural production.

4. ANALYSES OF AGRICULTURAL FINANCIAL SUPPORT DURING COVID 19 IN REPUBLIC OF NORTH MACEDONIA

In order to sustainably resolve the socio-economic impacts of the pandemic in the food and agriculture sector in line with the UN's "doing better" approach and the Sustainable Development Goals, the Food and Agriculture Organization of the United Nations (FAO) has developed a comprehensive COVID-19 Response and Recovery Program focused on innovative data-driven solutions and responsible investments to protect livelihoods, faster recovery and sustainable transformation of food systems. The program identifies six priority areas for joint action to preserve the development and resilience of the food and agriculture sector from the socio-economic and environmental challenges posed by the pandemic in the Europe and Central Asia region, including: (FAO, 2020)

1) Data for decision-making;

2) Economic inclusion and social protection to reduce poverty;

3) Food trade and safety standards;

4) Strengthening the resilience of small agricultural holdings;

5) Prevention of the next zoonotic pandemic;

6) Transformation of food systems

With the appearance of the first case of SARS-CoV-2 in the Republic of North Macedonia in February 2020, the question was raised in which way and to what extent the economic consequences of the health crisis will affect agriculture. With the declaration of a state of emergency, a curfew was set in the entire country, but this exemption was for people who need urgent medical assistance and key workers, such as: police, armed forces, health workers and participants in the production process in agriculture. The ban on movement didn't affect farmers directly because it provided an exception for agricultural activities, i.e. movement within the territory of the villages was allowed exclusively for work needs.

According to data from the Agency for Financial Support in Agriculture and Rural Development, in 2020 the payment of financial resources to support

farmers' income has been reduced in direct payment, especially vegetable production (Table 5). Most funds have been disbursed in Program for financial support of the rural development and for fisheries and aquaculture.

Table 5: Disbursed financial resources according to programs for 2020

Programs	**year**
	2020
Program for financial support in agriculture	4.851
- Vegetable production	2.460
- Livestock production	2.022
- Measures for additional support (state help)	359
Program for financial support of the rural development	1.763
- Measures for financial support for rural development	1.691,4
- Technical support	71,6
Program for financial support of fisheries and aquaculture	46
IPARD	327
Total from national funds	6.660
Total support for the sector	7.990

Source: Annual report of Ministry of agriculture, forestry and water management for 2021, p.8

In terms of crediting, there was a trend of increasing credits in primary production and trade continues. Namely, most of the credits are intended for processing - 50% or 7.8 billion denars, 32% or 5 billion denars refer to primary production and 18% or 2.7 billion denars for trade in agricultural products. (Annual Report, 2021, p.8) However, it should be taken into account that the data from the reports from the financial institutions do not show the real picture of crediting in agriculture for several reasons. Mainly, there are applicants who use the taken credit for agriculture; although they do not state that they are for that purpose.

Macedonian agricultural producers was already facing with difficulties in the sector in terms of financing, such as low and limited financing, financial services not adapted to agriculture specificity and difficulties in in credit accessing. Additionally, the pandemic deepened the problems that farmers were already facing such:

- Slowed production activities due to the closure of the usual sales channels;
- Difficult access of raw materials and uncertain placement of production because of the closing of borders;

- Increase price of raw materials;
- Increase costs for densification and cleaning in preventing virus spreading;
- There are mostly no corrections in relation to the agreed price for products by farmers to wholesalers, large combines and market chains for farmers, although some farmers have reduced the price of their products in order to settle the surplus;
- Seasonal workers, because of risk of COVID 19 infection, asked for higher daily wage for their labor.
- In the recent period of approximately 10 months, the problem with the increased price of energy needed in agricultural production, additionally contributes to rapid increase of costs in this sector.

As the majority of farmers in the sector are individual farmers, the first rapid analysis of the covid-19 measures in agriculture showed that individual farmers are completely left out. Only one of the measures directly applies to them, for green oil, while all others are intended for agricultural enterprises. As a result, there was a loss of 22 to 40% in the first quarter of 2020 and a drop in profit by 40 to 60%, and slowed production activities due to the closure of the usual sales channels, uncertain placement and problems with the purchase are only some of the consequences what the covid-19 pandemic caused in Macedonian agriculture. (Ristovski, 2021, p.8)

In order to mitigate the impact of the crisis on agriculture, an intervention fund was activated, with which it intervened on products that were at the height of the placement, such as spring cabbage and the purchase of lamb. Also, the deadline for payment of rent on state agricultural land was postponed. Out of 46 measures related to the covid-19 crisis, relevant to support agriculture was: (Government Report, 2021)

- financial support for micro, small and medium-sized enterprises that perform primary production, processing and source of primary and processed agricultural products;
- payment card for subsidizing 50% of green oil (for 50,000 farmers) in the amount of 4.6 million euros;
- stimulating grape processors and wineries to produce alcoholic distillate to be used by domestic chemical companies to produce disinfectants worth 3.5 million euros for a period of three years;
- long-term lease of pastures, consolidation of agricultural land for greater competitiveness of Macedonian agriculture;

- introducing a program for financing micro-agricultural enterprises in the amount of 3 million euros.

5. IMPLICATIONS AND PROPOSED STRATEGIES FOR IMPROVEMENT THE FINANCIAL POLICY SUPPORT IN AGRICULTURAL SECTOR IN REPUBLIC OF NORTH MACEDONIA

In general, measures effect are short-term and they are not adequately designed for agricultural sector i.e. late reaction for financial support to solve the problems in the sector. Government priority was social protection and the economy's recovery by focusing on companies with the aim of retaining jobs and financial support for the liquidity of the private sector with interest-free loans. The measures regarded to agricultural sector were indirect and linked to cash transfer to agricultural producers with products of the height of the placement such as lamb and spring cabbage and loan maturities extension.

In pandemic period, one of the shortcomings of the financial support was highlighted i.e. the inappropriate payment method of subsidies. In this term, there is time distance between subsidies payment that represent investment in agricultural production and the later sale collection for agricultural products. Agricultural production requires timely and appropriate investment in the production phase, and the lack of finance causes farmers to take loans from banks, savings banks, and the like as non-agricultural credit. Therefore, the statement of the Ministry's Reports regarding the crediting by the banks is clear, that they do not show the true picture of agricultural credits. Also, due to untimely payment of subsidies, farmers borrow from informal lenders - quick money shops, moneylenders, etc. and are left without their production. Because of this, agricultural subsidies in Macedonia are often characterized as a social component.

The Government failed to comply with key recommendations from the FAO: ensuring a reliable sales network, reducing surplus products through storage and processing and removing restrictions on domestic trade. (FAO, April, 2020) In this sense, no model was created for surplus production placement. In general, the producers of agricultural products who were at the peak of the ranking had no help in finding a market due to the closure of the borders but the restrictions on movement. In this direction, no solutions were found for creating a sales chain for the products and/or their storage or processing. Also, in a state of emergency, when the Government passes Decrees with legal force, some of the restrictions could be removed on the sale of goods by small

producers directly. In this way, their penetration in the domestic market will increase. The appearance of online sales was unnoticeable, but it was not supported by any interested party and was left to the knowledge and capabilities of the producers themselves.

A key factor for overcoming the crisis is the availability of adequate sources of financing. During pandemic, Central bank have taken other measures such as maturity extension, credit guarantee, or issuing a moratorium to postpone collect of any due payments from clients over a specific period. These measures have had a significant impact as the activities of financial institutions have been disrupted. In relation to the agricultural sector, the approach to crediting is additionally revealed. Also, non - existing of favorable credit with easy terms and fixed interest rates and one-time short-term approach in providing financial assistance and crediting additionally increase financial risks of agricultural producers.

Considering that the agricultural sector is a priority sector in Republic of North Macedonia and the COVID-19 virus on the other hand has brought a number of challenges and problems in the sector, as proposed recommendations arising from the analysis of the research results, the following could be stated:

- In order to deal more easily with the difficulties caused by the emergence of the crisis, access to favorable agricultural credit are needed with extension of deadlines and facilitation of payments to cover the losses caused by reducing production and canceling the agreed purchase. Also, further, and in a period of non-existence of crisis, the seasonal nature of agriculture will be observed, that is, the time distance between the investment and the later collection from the sale of agricultural goods.
- Promotion and development of agricultural credit product such as factoring. Agriculture factoring allows to get an advance on unpaid receivables, so it can be finance payroll, buy supplies, and maintain daily agriculture operations. It can be a good type of short-term financing with flexible terms and eligibility.
- Encouragement and developing of leasing services in agriculture. Leasing offers a private sector option for improving agricultural mechanization. It finances the acquisition of heavy agricultural equipment with the prospect of transfer of ownership at the end of the lease. Its simplified collateral rules facilitate access to agricultural and processing equipment, which has supported the emergence of a dynamic new generation of agricultural service companies.

- Supporting of a guarantee fund in order to help agricultural producers, that do not have sufficient collateral and financial resources to develop and establish businesses, modernize farms and companies, and produce competitive products by providing favorable borrowing conditions.
- Creating an agriculture credit union for providing financial products and services to all members. Credit agriculture unions, due to their mandate and structure, are able to network with other organizations seeking to address members' and communities' needs and work to achieve community oriented goals.
- Regarding the subsidies policy is the ensuring of subsidy payment mechanism i.e. establish a proper monitoring system that will follow the use of approved subsidies and will provide control of money spending. In this regard, timely payment is very important.

Agricultural producers should not be exposed to short-term solutions. It's important to decrease the uncertainty and risk by creating clear, consisted and focused policy in supply chain in food production.

6. CONCLUSION

The pandemic additionally highlights the difficulties of agricultural sector especially the lack of access to finance that agribusiness managers are facing with. The agricultural producer were faced with slowed production activities due to the closure of the usual sales channels, difficult access of raw materials and uncertain placement of production because of the closing of borders, increase price of raw materials and increase costs for densification and cleaning in preventing virus spreading. Also, there are mostly no corrections in relation to the agreed price for products by farmers to wholesalers, large combines and market chains for farmers, although some farmers have reduced the price of their products in order to settle the surplus.

In order to mitigate the impact of the crisis on agriculture sector, a set of measures were set up such as an intervention fund for products that were at the height of the placement and deadline for payment of rent on state agricultural land. Also, green oil was subsidized; grape processors and wineries were encouraged to produce alcoholic distillates, and long-term leases of pastures were negotiated with the government. In general, the measures effect were short-term and had late reaction for financial support to solve the problems in the sector such as:

- inadequate payment of the financial support in relation to the time distance between investments and the later sale collection for agricultural products;
- non-created model for surplus production placement with a low purchase price;
- removing obstacles for small producers placement in order to increase their penetration on the market;

Additionally, increase in financial risks due to the one-time short-term approach in providing financial assistance and crediting and non - existing of favorable credit with easy terms and fixed interest rates.
Therefore, as proposed recommendations arising from the analysis, the following could be stated:

- Access to favorable credit to cover the losses caused by reducing production and canceling the agreed purchase;
- Developing the credit market for agricultural producers, such as factoring and leasing services in agriculture;
- Support of a guarantee fund for farmers who do not have property as a guarantee for crediting;
- Creating an agriculture credit union which will allow access to join capital through membership;
- Redesigning of subsidies system in an appropriate one for a season character of agriculture production.

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THE IMPACT OF THE COVID-19 PANDEMIC ON ENTREPRENEURSHIP IN THE EUROPEAN UNION

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Abstract: *The pandemic of COVID-19 which spread rapidly across the globe in early 2020 has caused a global economic recession marked by a slowdown in total economic activity, a rise in unemployment, and a sharp increase in global inflation. This paper analyses the impact of the COVID-19 pandemic on entrepreneurship, and it discusses some of the key challenges for entrepreneurial activity that emerged during the crisis. The research question of the paper is: "What is the impact of the COVID-19 pandemic on entrepreneurship?" First of all, this paper attempts to explore the way in which the COVID-19 pandemic affected entrepreneurship, highlighting the main negative effects on entrepreneurship that arose during the crisis. In order to achieve this, we perform a thorough literature review, examining some of the most relevant research papers and articles that explore this area. Also, to better understand entrepreneurship trends during the crisis, we analyse youth self-employment and the number of micro, small and medium-sized enterprises (SMEs), as two different indicators of entrepreneurial activity in the European Union (EU). Then, using panel data from Eurostat, we construct an econometric model through which we investigate the impact of the pandemic on entrepreneurship in the EU. Literature suggests that the pandemic had various negative effects on small businesses and entrepreneurial activity. These negative effects included closed business activities or reduced operating hours leading to layoffs, supply chain disruptions, inability to perform R&D etc. However, our regression results indicate that the pandemic does not have a statistically*

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significant impact on entrepreneurial activity in the EU. Moreover, youth self-employment, as a percentage of the total population, decreased not only during the pandemic, but even in the period before the crisis.

***Keywords**: Entrepreneurship, small businesses, COVID-19, economic crisis.*

***JEL Classification**: L26, M13, E31*

1. INTRODUCTION

As a result of the rapid spread of the COVID-19 pandemic, governments around the world imposed lockdowns and severe restrictions which had a profound negative impact on economic activity worldwide. The new main feature that poses a real challenge for today's economies is uncertainty, as the magnitude of stock market volatility and certain financial aspects are very similar to those of the Global Financial Crisis that happened in the period 2007-2008 (Gavriluță, Grecu, and Chiriac, 2022). Organizations, both public and private, need to make appropriate changes to deal with these uncertainty issues, something which can be achieved through a high level of entrepreneurship and leadership. In other words, it has become especially critical for both profit and non-profit organisations to employ an agile and adaptable approach to dealing with increased uncertainty and unpredictability. This can only be done by employing an entrepreneurial attitude, characterised by a clear vision, mission and strategy. An entrepreneur is considered an innovator who is capable of identifying new opportunities and transforming them into a new business, product, service, or process. Entrepreneurship mostly exists in the form of small businesses, as these businesses have less hierarchy and more flexibility compared to much larger businesses. However, it is worth mentioning that, although entrepreneurship is mostly related to micro businesses and SMEs, it can also be applied in the context of big organisations as well, public or private. In fact, entrepreneurship should be considered more as a management approach, or even some sort of philosophy, where the entrepreneur is focused on developing a certain idea and leading his or her team in order to expand, grow and thereby realise that idea.

SMEs are considered the main engine of every economy. They represent 99% of all businesses in the European Union, provide workplaces for around 100 million people, contribute to more than half of Europe's total GDP and play a key role in adding value in every sector of the economy (European Commission, 2022). Therefore, their activities have a significant impact on macroeconomic indicators, especially labour market indicators like unemployment and the

number of job openings. In addition, they have a significant impact on total economic activity, investments, savings, consumption, etc. However, we must keep in mind that micro businesses and SMEs are more vulnerable to crises than other sectors. This is because they have fewer funding opportunities and lack human capital. For example, very often, the owner of the company is the CEO and the main entrepreneurial force within the same enterprise, and as a result of the fact that these businesses are relatively small and without any past track record, it is usually very difficult for them to obtain financial resources for their day-to-day business operations. In fact, access to financial resources, especially from traditional lending institutions such as banks, has often been pointed out as one of the most significant obstacles to the functioning of micro firms and SMEs. Very often, the entrepreneur has to rely on alternative methods of financing his or her business, such as personal savings, resources from friends and family (commonly known as FFF – friends, family and fools), and many entrepreneurs turn to angel investors, venture capitalists and crowdfunding as additional ways to obtain finances. Having the aforementioned in mind, it becomes clear why it is so difficult for small businesses to function even in relatively normal and stable periods, let alone periods characterised by a global pandemic and severe economic crisis.

Table 1: Main factors for classification of micro firms and SMEs in the European Union

Company category	**Staff headcount**	**Turnover**	**or**	**Balance sheet total**
Medium-sized	< 250	≤ € 50 m		≤ € 43 m
Small	< 50	≤ € 10 m		≤ € 10 m
Micro	< 10	≤ € 2 m		≤ € 2 m

Source: https://single-market-economy.ec.europa.eu/smes/sme-definition_en

In order to prevent the rapid spread of the virus, governments were forced to take restrictive measures that affected both the public and private sectors. However, the private sector, which is comprised of mostly micro firms and SMEs, suffered considerably more damage as many businesses were forced to shut down their operations. Due to these restrictive measures, the SMEs sector experienced global supply chain breakdowns. In fact, this breakdown led to the closure of some of the businesses, as they were unable to deal with the losses they were facing. However, some businesses started changing their business models, taking advantage of technology, in particular IT and the Internet. They were able not only to remain in the business world, but also to expand their business operations and grow.

Having the aforementioned in mind, the main research question in this paper is to evaluate the impact of the pandemic on entrepreneurship in the EU. In other words, the research question basically tries to analyse the effects that the pandemic had on entrepreneurship.

2. LITERATURE REVIEW

The pandemic had a wide range of negative effects on almost all sectors, so economic activity dropped sharply on a global scale. Restrictive measures, such as lockdowns, social distancing, and recommendations for staying at home, combined with the fear of the pandemic led to not only disruptions in production, but also to the largest collapse in demand for firms' output since the Great Depression (Gourinchas et al., 2020). The lockdowns and restrictive measures that governments around the world took in order to control the spread of COVID-19 caused an unprecedented financial shock. Economies were basically forced to shut down. This represented a severe hit to total economic activity and this of course had a negative impact on entrepreneurship as well, especially entrepreneurial activity in industries in which physical contact is inevitable, such as tourism and hospitality (Vărzaru, Bocean and Cazacu, 2021; Baum and Hai, 2020), construction (Gamil and Alhagar, 2020), etc.

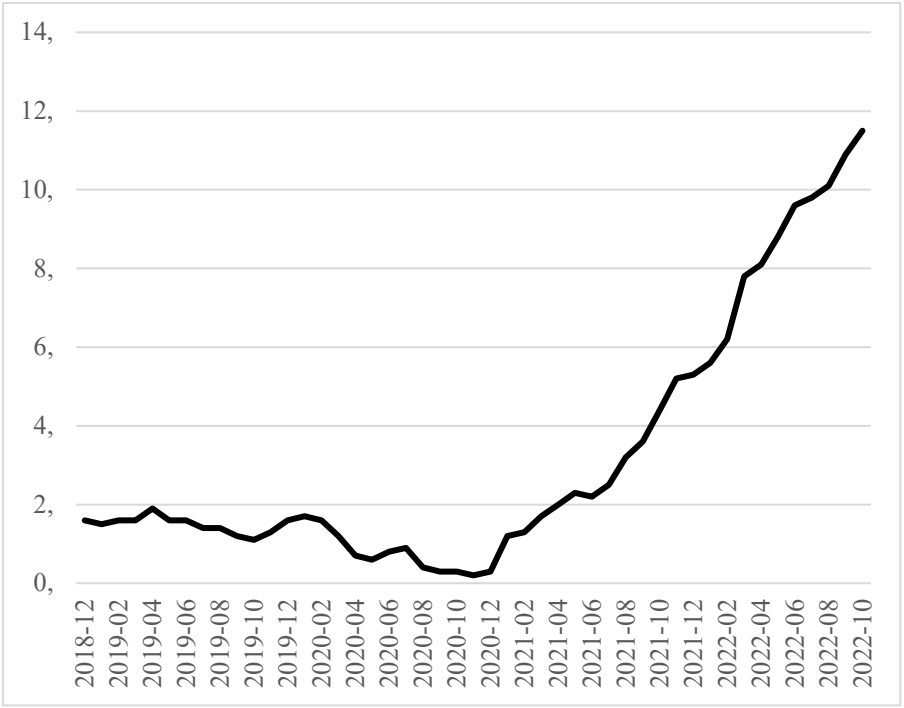
As a result, the business sector faced a big challenge. In particular, micro firms and SMEs were most at risk because they were vulnerable to a variety of different factors, especially those related to human capital and finances. These events, followed by the closure of many businesses, affected the whole entrepreneurship scene, since most entrepreneurial activity is associated with micro and small businesses. In other words, the pandemic crisis had a substantial negative effect on entrepreneurship (Meahjohn and Persad, 2020).

Also, at the time when the pandemic was progressing, it was observed that economic growth rates declined sharply. The decrease in economic activity occurred as a result of restrictions implemented in 2020 to slow down the spread of the COVID-19 virus. The turning point was 2020 when real GDP in the EU dropped by 5.9% compared to 2019, with the highest drops recorded in Spain, Greece and Portugal (-10.8%, -9% and -8.4%, respectively). Ireland was the only country to achieve GDP growth in 2020 (+5.9%) (Eurostat, 2021). However, in 2021 economic activity in the EU had a strong recovery with real GDP rising by 5.4% relative to 2020.

Su, Dai, Ullah and Andlib (2022) claim that almost all European economies are suffering from the consequences of the disruptions caused by the pandemic. Also, according to the same authors, these disruptions had negative effects on various macroeconomic variables, such as employment, and the EU economies experienced higher unemployment rates. In 2020 the unemployment rate reached 7.2% of the total labour force (aged 15-74), which is higher compared to the pre-pandemic period. For example, in 2019 the unemployment rate was 6.8%. This trend was present in almost every EU Member State. After the year of the initial shock in 2020, in 2021 the unemployment rate reached 7.0%, which still exceeded the rate from the period before the pandemic. Relatively speaking, the fast economic recovery in 2021 was mainly due to a low comparative basis from the previous year (as a result of the poor economic performance in 2020), but also to the measures that governments took in order to overcome the crisis. In fact, most of the countries turned to expansionary fiscal and monetary policies to mitigate the negative effects of the recession. As a result of the expansionary monetary policy not being accompanied by a proper increase in production, inflationary pressures were developed after some time (Erdoğan, Yildirim and Gedikli, 2020). Thus, the inflation rate started following an upward trend starting from the last month of 2020 and this trend continued through 2021 and was also present in 2022. For example, in October 2022 the annual inflation rate reached 11.5% in the EU, which is significantly higher compared to the same month in 2021 (4.4%).

According to some research papers from the past decade, there exists a strong relationship between macroeconomic factors and entrepreneurship, which is quite logical. For example, Şipoş-Gug and Badulescu (2015) state that there is a traditional relation between entrepreneurship and some macroeconomic factors such as economic growth, inflation, unemployment, interest rates, etc. In their paper they try to better understand the impact of economic changes on the supply and demand for entrepreneurship in the case of the EU. They do this by employing a panel regression. The results suggest that there is a positive relation between economic activity and entrepreneurship, meaning that GDP is a significant determinant factor for entrepreneurial activity. The second conclusion is related to the impact of the inflation rate and they find that an inflation rate of around 3% has a positive impact on entrepreneurship. On the other hand, the authors' conclusion regarding the unemployment rate is surprising, because the authors find that there is no relation between the unemployment rate and entrepreneurship.

Figure 1: Inflation rate in the EU (HICP-monthly data)



Source: https://ec.europa.eu/eurostat/web/hicp/data/database

According to numerous authors, there is an evident relationship between unemployment and entrepreneurship. For instance, Van der Zwan et al. (2016) included unemployment among the "push" motivations for entrepreneurship, along with family pressure, individuals' dissatisfaction with their current situation, etc. Taking push effects into account, the explanation for unemployment is this: higher unemployment rates will result in more entrepreneurs, which means unemployment and entrepreneurship are positively related. On the other hand, "pull" motivations, unlike "push" motivations, stem from the new opportunities that emerge on the market, regardless of whether the person is already employed or not (Caliendo and Kritikos, 2019). This is a situation when the unemployment rate in one economy is low and stable, but the number of entrepreneurs and newly opened start-ups is increasing, meaning that the "pull" effect prevails. It mainly happens when the economy is in its expansion cycle, and these "good times" create a large number of new business opportunities for entrepreneurs.

The same topic was investigated by Remeikiene and Startiene (2009). Namely, they try to determine the links between entrepreneurship and unemployment and come to several conclusions. First, they claim that the presence of the push effect increases entrepreneurial activity. Also, they confirm this relationship in the case of Lithuania. Furthermore, in this country, there are other factors that have an impact on entrepreneurship, such as inflation, GDP, exports, and earnings.

Entrepreneurship within economies and how poor macroeconomic performance affects entrepreneurship are very difficult to measure precisely and accurately. There are some indicators, however, that can be used to measure entrepreneurial activity. These indicators are associated with the presence of entrepreneurs or small businesses in a country. Some of the most relevant indicators that can be found in the literature are self-employment and the formation of start-up firms (Desai, 2017). Frequently used indicators to describe entrepreneurship are the number of micro firms and SMEs, business demographic statistics in terms of firms' birth, survival and death with a focus on how these events affect employment levels (Eurostat, 2022), number of patents, innovation, etc.

3. METHODOLOGY AND DATA

This paper focuses on both qualitative and quantitative analysis. Various measurable indicators can describe entrepreneurial activity, but we have to emphasize that these indicators do not reflect all types of entrepreneurship in a given economy. So, each indicator is focused on a different aspect of entrepreneurship. The analysis in our paper is divided into two sections. In the first section, two indicators of entrepreneurial activity (the number of micro firms and SMEs and youth self-employment) are presented and analysed in the case of the EU in the period before and during the pandemic. In the other part of our study, we construct an econometric model in which we investigate the relationship between the pandemic and entrepreneurship, measured by youth self-employment. In the model we control for the most relevant macroeconomic variables which are expected to have an effect on entrepreneurship. We have a panel dataset covering all of the 27 EU countries in the period 2014-2021, meaning that we have 216 observations in total. Croatia was the last country to join the EU, with accession to the union taking place on 1 July 2013. Therefore, we took 2014 as our initial year for the sample in order to have a balanced sample. Moreover, we decided not to include the United Kingdom in our sample,

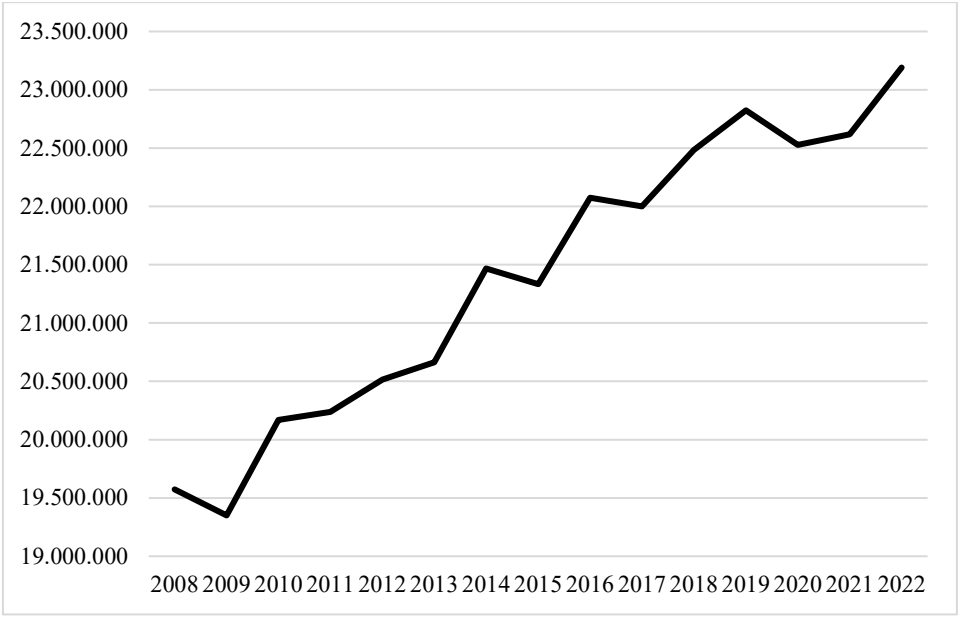
because the UK left the EU in 2020. The data for all of the variables included in the model are obtained from the official website of Eurostat[5].

4. RESULTS

In this section of the paper we briefly discuss the number of micro firms and SMEs and the youth self-employment ratio for all of the EU countries, as both of these indicators are representative measures of entrepreneurial activity. Then, we present the results of the panel regression analysis.

Entrepreneurship is considered as a process that leads to the creation of a micro or small business which could then grow and become a more substantial business. The number of micro firms and SMEs is a rough indicator that is often used to describe entrepreneurial activity in a given economy. Our primary focus is on analysing the number of micro firms and SMEs in EU countries for the period 2008-2022.

Figure 2: Number of micro firms and SMEs in the EU (2008-2022)

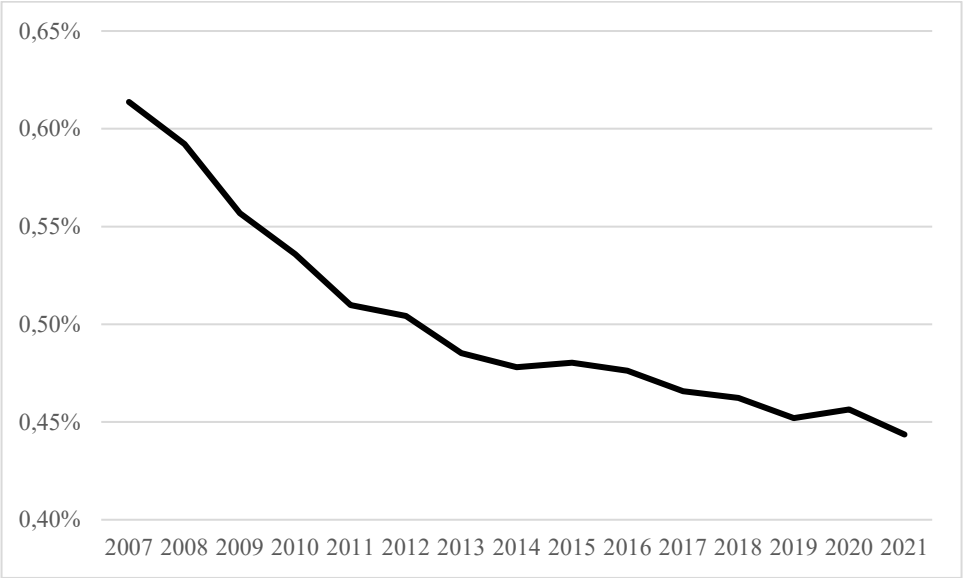


Source: https://www.statista.com/statistics/878412/number-of-smes-in-europe-by-size/

[5] https://ec.europa.eu/eurostat

As it is shown in Figure 2, the number of micro firms and SMEs has a general upward trend throughout the analysed period. However, the number of enterprises decreased in 2020 compared to 2019. This is not a surprise as COVID-19 appeared at the end of 2019 and then started spreading rapidly around the globe in 2020. After this, we can expect a slight recovery in 2021 and then a strong increase in the total number of micro firms and SMEs in 2022 relative to 2021.

Figure 3: Youth self-employment ratio in the EU (as a percentage of total population)



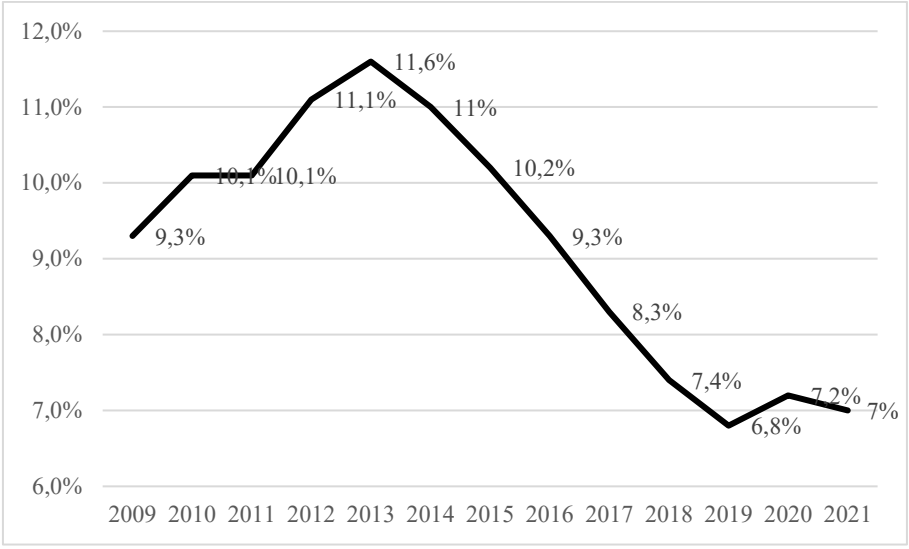
Source: https://ec.europa.eu/eurostat/web/youth/data/database

In Figure 3 we see another indicator of entrepreneurial activity. This indicator is youth self-employment as a percentage of the total population for the period 2007-2021 in the European Union (27 countries, from 2020). We can see that there is a general downward trend in youth self-employment in the EU. It is pertinent to note, however, that these changes are relatively small and do not have a significant economic impact. If we take a look at the last three years of our analysed period, we can conclude that the rate of youth self-employment is relatively similar and we cannot observe any severe changes in 2020 and 2021 relative to 2019. In other words, judging by these numbers, we can see that entrepreneurial activity as measured by this indicator was not severely hit by the crisis caused by the pandemic.

The pandemic affected both the supply and demand sides. First of all, because of the lockdowns there were interruptions in the global supply chain leading to a lack of goods, reduction in the supply of labour, and then reduction of capacity utilisation (OECD). Furthermore, on the demand side, we could notice a severe reduction as well, which decreased the revenues of entrepreneurs and forced them to reduce their expenditures, which are limited even in "normal" and more stable periods. As a result, entrepreneurs were forced to reduce the salaries or the number of their employees, and this caused a further reduction in demand. The negative shocks on both the supply and demand sides resulted in a severe reduction in total economic activity.

Figure 4 shows the annual unemployment rate in the EU for the period 2009-2021. As we can see, the highest unemployment rate was registered in 2013. After that, the unemployment rate started to decrease and this downward trend lasted until 2019. In 2020 the unemployment rate was a bit higher than in 2019, which corresponds with the start of the COVID-19 pandemic. However, the unemployment rate in 2020 still remained significantly lower than in 2013. For 2021 we notice a slight drop in the unemployment rate compared to 2020 and this corresponds with the rising trend in the number of SMEs in the same period (Figure 2).

Figure 4: Unemployment rate in the EU (seasonally adjusted)



Source:
https://ec.europa.eu/eurostat/databrowser/view/une_rt_a/default/table?lang=en

4.1. Results of the panel regression model

In this section of the paper we present our empirical findings related to the main research question that we explore in this paper. As already indicated, our research goal is to investigate the effects that the pandemic had on entrepreneurial activity in the EU. We obtained the data from Eurostat and constructed a panel dataset for 27 EU countries for the period 2014-2021 and we have 216 observations in total.

Table 2: Descriptive statistics

Date: 02/02/23 Time: 21:44
Sample: 2014 2021

	YOUTH_SELF_EMPLOYMENT_RA	COVID	INFLATION_RATE	LN_REAL_GDP_PER_CAPITA	UNEMPLOYMENT_RATE
Mean	0.493229	0.250000	1.144907	10.06551	14.09815
Median	0.461981	0.000000	0.900000	10.01406	12.20000
Maximum	1.010564	1.000000	5.200000	11.49917	45.00000
Minimum	0.200967	0.000000	-1.600000	8.718197	3.700000
Std. Dev.	0.197626	0.434019	1.324640	0.626255	7.659407
Skewness	0.563738	1.154701	0.517941	0.186042	1.551568
Kurtosis	2.392980	2.333333	3.075136	2.465088	5.369380
Jarque-Bera	14.75710	52.00000	9.708270	3.821201	137.1908
Probability	0.000625	0.000000	0.007796	0.147992	0.000000
Sum	106.5375	54.00000	247.3000	2174.150	3045.200
Sum Sq. Dev.	8.397042	40.50000	377.2544	84.32212	12613.30
Observations	216	216	216	216	216

Source: Own calculations

Table 3: Correlation between the variables

Covariance Analysis: Ordinary
Date: 02/02/23 Time: 21:45
Sample: 2014 2021
Included observations: 216

Correlation Probability	YOUTH_SEL...	COVID	INFLATION_...	LN_REAL_G...	UNEMPLOYM...
YOUTH_SELF_EMP..	1.000000 -----				
COVID	-0.008605 0.8999	1.000000 -----			
INFLATION_RATE	0.060947 0.3727	0.270817 0.0001	1.000000 -----		
LN_REAL_GDP_PE..	-0.176879 0.0092	0.036903 0.5896	-0.017475 0.7984	1.000000 -----	
UNEMPLOYMENT_...	-0.083867 0.2196	-0.096820 0.1562	-0.448107 0.0000	-0.114380 0.0936	1.000000 -----

Source: Own calculations

In tables 2 and 3 we can see the descriptive statistics for each of the variables and the correlation coefficients between each of the variables, respectively. As we can see in table 3, none of the correlation coefficients between the independent variables is higher than 0.7 or lower than -0.7, which indicates that multicollinearity would not be a problem in our model (+/-0.7 is often considered as a benchmark when examining the degree of correlation between two variables). In other words, this means that all of the independent variables (the main independent variable and the control variables such as the inflation rate, real GDP per capita and unemployment rate), can be included in the model at the same time.

So, we are dealing with one dependent variable (the youth self-employment ratio which is a measure of entrepreneurial activity), one main independent variable labelled as "COVID" and three control variables (which are in fact independent variables as well), which are real GDP per capita, inflation rate, unemployment rate. The independent variable "COVID" is a dummy variable which takes the value of 1 for 2020 and 2021, when in fact the EU countries were affected by the pandemic, and 0 for the rest of the years as in those years there was not any pandemic. In our case, all three control variables were lag for one year. This is in order to avoid potential reverse causality in the regression. So in our model we investigate the relationship between the pandemic and entrepreneurship (youth self-employment (t)) after controlling for the past real GDP per capita (t-1), the past inflation rate (t-1) and the past unemployment rate (t-1). By employing a dummy variable as the main independent variable, we can determine the effect of the pandemic on the dependent variable, which in our case is youth self-employment.

The estimated equation takes the following form:

$$Youth\ self-employment\ rate_t = \beta_0 + \beta_1 * COVID + \beta_2 * Inflation\ rate_{t-1} + \beta_3 * Ln\ Real\ GDP\ per\ capita_{t-1} + \beta_4 * Unemployment\ rate_{t-1} + Country\ Fixed\ Effects + \varepsilon_t \quad (1)$$

Youth self-employment is an indicator that we use to quantify a significant portion of the entrepreneurial activity. The main independent variable covers the effect of the pandemic. Real GDP per capita is a measure of the country's economic activity. By including this variable, we examine if it has any impact on youth self-employment. Unemployment is also significant because it can cause two effects. For example, higher unemployment rates can motivate young people to start their own businesses, which will increase entrepreneurial activity. Meanwhile, higher unemployment means weaker economic

performance, as well as possibly weaker economic infrastructure, which can lead to a decrease in entrepreneurial activity. Therefore, this variable can have both a positive and negative effect on entrepreneurship. The third control variable, the inflation rate, is also of essential importance because it helps us see the stability of the economy. Higher inflation means a less stable economy which can demotivate and discourage people from engaging in entrepreneurial activities. Furthermore, because we have a panel dataset, we use country fixed effects through which we control for unobserved heterogeneity, or features inherent and specific to each country. More specifically, we use country fixed effects to control for factors that are time invariant. This means that they are relatively constant, and generally do not change dramatically over time. These factors include the quality of institutions, country policy, culture, mentality, etc. These factors are time invariant and heterogeneous. They are time invariant, as they do not change easily over the years, or at least not easily in a short period, and heterogeneous, as they differ between countries. Because these factors may affect entrepreneurial activity, they should be included in the model. For example, countries characterised by a more entrepreneurial culture would have higher levels of entrepreneurship. The same explanation applies for the other factors which are covered with the inclusion of the fixed effects. The regression results are presented in Table 4.

The estimate for the coefficient of the main independent variable is negative, indicating that during the years in which the pandemic was present, i.e. in 2020 and 2021, the dependent variable youth self-employment rate was slightly smaller compared to the years without the pandemic. So, this result could indicate that in the years with COVID-19 there was lower entrepreneurial activity. But the probability value for the t-statistic for this estimate is very high (0.7), meaning that this result is not statistically significant at all three levels of significance 0.01, 0.05 and 0.1. Accordingly, we conclude that the main independent variables have no influence on the dependent variable. Additionally, the control variables are not statistically significant and do not have an impact on entrepreneurial activity.

Table 4: Regression results

Dependent Variable: YOUTH_SELF_EMPLOYMENT_RA
Method: Panel Least Squares
Date: 11/26/22 Time: 16:31
Sample (adjusted): 2015 2021
Periods included: 7
Cross-sections included: 27
Total panel (balanced) observations: 189

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.664620	1.286561	0.516586	0.6062
COVID	-0.004204	0.012753	-0.329615	0.7421
INFLATION_RATE(-1)	0.002995	0.006218	0.481660	0.6307
LN_REAL_GDP_PER_CAPITA(-...	-0.017517	0.126824	-0.138119	0.8903
UNEMPLOYMENT_RATE(-1)	0.000270	0.002265	0.119124	0.9053

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.906727	Mean dependent var	0.493848
Adjusted R-squared	0.889017	S.D. dependent var	0.200698
S.E. of regression	0.066861	Akaike info criterion	-2.423518
Sum squared resid	0.706317	Schwarz criterion	-1.891803
Log likelihood	260.0225	Hannan-Quinn criter.	-2.208108
F-statistic	51.19826	Durbin-Watson stat	0.907024
Prob(F-statistic)	0.000000		

Source: Own calculations

5. CONCLUSION

Since the beginning of 2020, the entire world has been dealing with the negative effects of the COVID-19 pandemic. The virus changed the everyday lives of people and many businesses were forced to change their way of functioning. This meant that entrepreneurs were also forced to adapt to the new situation. There is no doubt among researchers that the virus had a negative impact on the economies. This is especially true during the initial period when the virus started to spread rapidly across countries.

The aim of this research paper is to identify the effects of the COVID-19 pandemic on entrepreneurship in EU countries. We use two indicators as a measure of entrepreneurial activity. These are the number of micro, small and medium-sized enterprises for all of the EU countries for the period 2008-2022, and the youth self-employment ratio (number of young people who are self-employed as a percentage of the population) for the period 2002-2021. Although there was an evident decrease in the number of micro businesses and SMEs in 2020, in 2021 this indicator increased significantly. Both of these

indicators did not show a severe decrease in 2020 and 2021. We assume that this is partially a result of the policies and measures which were implemented for support of the business sector.

However, our empirical results suggest that the pandemic did not have a statistically significant impact on entrepreneurial activity. This also holds for our control variables.

This paper can be improved in several ways. First of all, the indicator of entrepreneurship that we have in our econometric model is the youth self-employment ratio. The term "youth" refers to those between the ages of 15 and 29. That means that self-employed people older than 29 are excluded from the analysis. Furthermore, self-employed people do not encompass all forms of entrepreneurial activity. For instance, an entrepreneur can be a person working in a small entity who contributes innovative ideas. Based on the previous statements, the model can be improved in future research papers by including additional indicators of entrepreneurial activity. Also, regarding the main independent variable, we rely on using a dummy variable. This variable takes the value of 1 if the pandemic has been present in that year or 0 if not. This could be improved by using a different, more precise measure of the effect of the pandemic on each of the countries. For example, the pandemic had a different impact on different countries as some countries were better prepared and more organised than other countries to cope with the pandemic. Hence, having a more precise measure of the effect of the pandemic on each country would enable us to better monitor its impact not only on entrepreneurship, but on other variables also.

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EMIGRATION PROCESSES IN THE COUNTRIES OF THE WESTERN BALKANS AS A RESULT OF DEMOTIVATION OF EMPLOYEES BY NON-PROFESSIONAL MANAGEMENT STAFF

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Abstract: *The inefficient human resource management system has led to a brain drain from the countries of the Western Balkans in the past decade, and this process, unfortunately, is still ongoing. The tendency for the emigration of qualified human resources to developed countries is growing more and more, in search of better education, working conditions, higher wages, better living standards, as well as better living conditions and developing professional competencies. The reasons for this are: low wages, insecurity in the quality of education, health services, services from institutions, employment with nepotism or political merit, absenteeism or unenforceable career system and compensation policy, etc.*

For the purposes of the research they were used methods and models of analysis and synthesis of the collected information. In order to conduct the research and prove the hypotheses in this paper, an interview was conducted with company managers and employees in the countries of the Western Balkans. The questionnaire was based on a scale of views.

The research: prove the relationship between the level of professionalism of managers and the fluctuation of employees in organizations; connection between the modern way of management, emphasizing the professionalism of managers and the level of efficiency of employees; shows to what extent companies from the Western Balkans follow and implement the new management strategies, to build professional staff capable of managing employees in a modern way; give a demonstration and initiate the need to create quality managerial staff through integrated processes in the

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educational system following the example of developed modern economies in order to overcome emigration from the home countries.

***Keywords**: managers, professional staff, emigration, business policy*

***JEL Classification**: O15: Human resources, human development, income distribution. migration*

1. INTRODUCTION

The research done for the purpose of this paper is to prove that the hiring of professional management staff in organizations in the Western Balkan countries is an important prerequisite that will provide confidence and greater security to young people for their retention and employment in their home countries. By building solid strategies for paying salaries, appropriate to the increase in living costs, introducing and implementing an efficient reward system, continuous training and advancement of employees, building a favorable organizational climate, as well as respecting and protecting the rights of employees, in it will greatly contribute to the retention of professional staff in these countries.

The paper will review the positive and negative aspects of the profile of managerial staff in organizations and to what extent their professionalism affects the decision of employees to leave their jobs and move out of the country. The implementation of trainings for managers on modern trends in organization management, trainings for managing different types of conflicts, trainings for professional negotiation, trainings for managers in a fair, transparent and efficient way increases the motivation of employees to stay at work in their home countries.

The research done for the purpose of this paper is to prove that the hiring of professional management staff in organizations in the Western Balkan countries is an important prerequisite that will provide confidence and greater security to young people for their retention and employment in their home countries.

Building solid strategies for better salaries, appropriate to the increase in living costs, introducing and implementing an efficient reward system, continuous training and advancement of employees, building a favorable organizational climate, as well as respecting and protecting the rights of employees, in it will greatly contribute to the retention of professional staff in these countries.

The paper examines the positive and negative aspects of the profile of management staff in organizations and how much their professionalism affects the decision of employees to leave their jobs and countries.

The implementation of trainings for managers on modern trends in organization management, trainings for managing different types of conflicts, trainings for professional negotiation, trainings managers in a fair, transparent and efficient way increases the motivation of employees to stay at work in their home countries.

2. BUSINESS POLICY

In the essence of business policy (businccss policy) we find the concept of politics. In various encyclopedias: the term politics is explained in a unique way, such as for example (Greek: polis - city, state, politikos - civil, state): 1. it represents the science and skill of managing the state; science about the goals of the state and about the best means and ways that lead to their realization; method of operation of a country, parties, institutions or individuals; or, again, politics (lat. politica); 2. state affairs, matters relating to the state.

However, there is no generally accepted opinion about the content and meaning of the word politics. Often, that word is used to indicate: direction, way of thinking, principles, goals of the enterprise, a guide when thinking about action, a general standard that is not subject to frequent changes, a set of procedures, etc. The term policy, in general, means directing action to achieve goals. More specifically, a policy is a guide for carrying out an action.

Business policy, as a planning decision of the company, represents fundamental decision-making based on principles. At the same time, entrepreneurial policy does not only include decision-making, but also the formulation of basic principles that should facilitate the search for optimal decisions. At the same time, it also represents a code for the procedures needed to achieve the basic goals, as a guide for action, a means for carrying out the management process and as a means for making decisions. Business policy, as the second final product of the planning process, essentially represents a set of principles or a group of related principles for directing action to successfully achieve the company's goals.

There are different positions in the definition of business policy, for example, it represents permanent decision-making, a guide for action, a set of related principles, a way of achieving goals, a report on the company's goals and the

principles of plans. Business policy has management characteristics and is one of the final products of planning. The objectives of the enterprise direct the business policy. It represents a way of achieving the goals, on the one hand, and specifying the goals in planning tasks, on the other hand. Business policy is a set of management decisions on related principles or rules that direct decision-making in business functions and the development of the plan of individual business functions. Policy is continuous decision-making that sets the framework for decision-making by managers in recurring operating conditions. Within the limits, the manager has the freedom to develop his initiative.

The analytical approach to the definition of business policy allows the following statements to be made:

Business policy is a set of management policies. It is decision-making based on principles, and is the starting point for making planning decisions that directs the activity to achieve the company's goals;

Business policy represents a set of principles, guidelines and criteria. Taking action is coordinated with the principles. After the formulation and adoption of the principles, immediate action follows. The principles set the framework within which creativity and independence in taking action should be sought;

The business policy determines the business behavior of individual business functions. Principles, guidelines and criteria are formulated for those issues that are repeated multiple times in the operation of business functions. These are: the principle of selling products on credit in the amount of 50% participation for a period of five months, the principle of receiving goods franco magazin of one's own company, the principle of permanent education of personnel; the principle of seeking investment solutions in cooperation and business cooperation with other enterprises; the principle of transfer of technology from other innovators by way of purchasing patents, licenses or joint ventures;Business policy determines plan decision making. Policy provides the framework within which plans are to be enacted. When the policy is formulated, the development of the plans is facilitated, which, in a way, are a means of realizing the business policy.

2.1. Characteristics of business policy

Formulating an effective business policy is very important for effective decision making. Therefore some considerations can be given as guidelines for effective policy making. The characteristics contain the desired premises in policy

formulation. A large number and various characteristics of business policy can be found in the literature, such as: stable, framework, comprehensive, flexible, compatible, understandable, ethical, realistic, rational, written formulation, etc.

The policy should be clearly worded. Clearly formulated principles, guidelines and criteria are a requirement for efficient application and execution. A clearly and precisely formulated policy reduces the need for interpretation, increases motivation for its implementation. The policy should be clearly defined in simple and understandable terms. Otherwise, it may be misunderstood and consequently deviant in relation to the planned course of action. An imprecisely formulated policy leads to a loss of confidence in behavior in a given situation. The policy must be clearly written.

Policy should derive from objectives. The business policy should contribute to achieving the goals of the operation, but also to direct the behavior of the business functions and the decision-making about the plan of the enterprise. The policy should reflect the goals and plans. A policy that does not contribute to the achievement of the goals of the enterprise or for the execution of plans, does not serve its purpose and begins to inhibit decision-making.

The policy must clearly describe the objectives from which it is derived. Business policy has certain characteristics that distinguish it from other final products of the planning process. It is based on a careful, careful analysis of the objectives.

Politics has a management character. It contains decision-making. Decisions have a principled character, they direct the action. The principled decision is a framework for immediate decision-making.

Politics is a codex of ethical and moral principles. The policy should be aligned with the economic, political and social environment of the enterprise. The application takes place in the ethical values of the society such as the laws, the constitution and other legal regulations. Politics must be principled, and rules of conduct should be derived from it.

The policy should be stable. It implies a principled position taken in advance for the same or similar events. The principles, guidelines and criteria should not be different for the same or similar events. Otherwise, the decision-making is not principled. Stability refers to changes that are a response to fundamental changes in the goals and characteristics of operations. Unstable business policy creates a feeling of insecurity and discouragement. Such a policy tends to

prevent the expression of initiatives. It causes loss of respect and trust among managers. "This instability may be caused by a lack of proper analysis of the objectives; lack of appropriate facts relating to the situation of the enterprise in which it is applied; from a sudden judgment expressed under pressure; from giving priority to opportunistic actions over business opportunities and for other reasons."[4] The policy should be stable, but improving with changes, consistent with economic conditions and business requirements[4].
The policy should be adaptable. Adaptability does not mean constantly changing but respecting the changes in the environment and in the enterprise. In that way it is elastic. The policy should be based on an analysis of the factors of management and to correspond to the claim that the company has in the branch and in the group.

A politician should be flexible. A flexible policy is one that serves as an effective guide for management decisions, with the least variation in the scope of operations. A complete flexible policy is one that is equally applicable in times of depression and times of prosperity. The human limitations of managers become a limiting factor. The policy must have breadth to cover the many and varied situations. Unlike stability, which refers to rigidity or the status quo, organizational stability can only be ensured if policies are flexible. The decision-maker is faced with varying degrees of change in decision-making situations, external and internal, and consequently flexible policies are needed if the enterprise is to more readily accept those changing conditions[5].

Politics should be rational. It means that it derives from the company's goals. It should indicate how to achieve the goals in the most efficient way. The objectives are the starting point for defining the policy. Rationality also implies that plans derive from business policy. The plans should specify the business policy.

The policy should be comprehensive. It should encompass and cover all significant activities in the company. Principles, guidelines and criteria should be formulated for all activities in business functions that are repetitive and require multiple decision making. Policies should be broad enough to cover a wide range of situations.

[4] Borjas G. J., 2016, We Wanted Workers: Unraveling the Immigration Narrative Hardcover, W.W. Norton & Com., London, October 11

[5] З. Зununи., (2019) Емиграционите движења од Македонија во Европа, Америка и Австралија, НУБ "Св. Климент Охридски", Скопје

The policy should be complementary. Formulated principles, guidelines and criteria for activities in individual business functions, for activities at individual levels of the organizational structure, for activities in relation to the environment, should be harmonized and not contradictory. Principles, guidelines and criteria should complement each other and not exclude each other. Policies should be complementary, supplementing each other, in order to guide the company's actions. The concept of complementary policy refers to the relations between the elements of the organization, such as: marketing policy, production policy, financial policy, investment policy, research and development policy, personnel policy, etc.

The policy should be framework. Formulated principles, guidelines and criteria provide the boundaries within which the action should move. Independence and creativity are required within the established frameworks. The framework of the business policy gives independence, indicates to what extent the executor is independent, on the one hand, and, on the other, in which direction he should move in solving the problem. The policy must prescribe a method of implementation in the broadest sense of the word, but it should also allow for the discretion of the responsibility for preparing the rules of conduct. Policy should be in harmony with objectives to ensure maximum consistency in decision-making. It must prescribe criteria for current and future actions within the established framework.

The policy should be consistent. It should provide useful decision making in recurring situations. If conditions are assumed to be repeatable, then decision-making is enhanced by the consistent policy. If the policies are not consistent, then the decision-making will not be efficient even in recurring conditions.

Policy should be discretionary. The policies are intended to be a decision guide that implicitly suggests discretion on the part of the management involved. Otherwise, if rules and procedures do not have a "zone of discretion," then policies do not. When rules and procedures are clearly defined and prescribe organizational behavior, policies provide a decision guide that allows an acceptable degree of discretion[6].

Policies should be formulated in writing. A written policy reflects a reliable factor on which decisions will be based. Statements of policy formulated in

[6] Jovcheska S. (2017) International Managers, LAP Lambert-Academic Publishing, Berlin, Germany

writing are more reliable than if they are not in written form, thus allowing oral communication with the risk of misinterpretation and inaccuracy.

Policies should be instructive. Policies allow for more effective communication in writing, but this is no guarantee that they will be understood by the recipient. Therefore, they require explanation and interpretation, often redefinition of the wording, in order to be effectively understood and applied by the personnel in the enterprise. The formulation of business policy should be based on principles, and as much as possible, on facts and truths. Policies at lower levels of management should be consistent and not contradictory to those at higher levels of management. The policies of different departments and sectors should be coordinated. Also, they should be clear and understandable and expressed in writing, as well as flexible, stable and clearly understood. Principles, guidelines and criteria enable communication between functions, between management and leadership bodies and between functions within the enterprise. But policies also apply to the company's environment. The policy also represents a set of principles with which to communicate with the environment.

2.2. Classification of business policy

Different classifications of business policy based on different criteria can be found in the literature. The classification can be performed according to time, according to functions, according to the organizational level, according to the source, according to the levels of organization of the management, according to the functions of the management, according to the subject of work, etc[7].

The first possible classification of business policy, according to source 5, can be external, internal and solicitation. The group of external policies includes those policies that are formulated to respond to demands that are external to the enterprise, such as, for example, government, trade associations, and labor unions. The group of internal policies includes those policies that originate from managers at any level of management, with the intention of formulating guidelines for their own use in the management of the enterprise. The group request policy is based on a manager seeking advice, in exceptional situations,

[7] Silletto C., Brown L. (2018) Staying Power: Why Your Employees Leave and How to Keep Them Longer, Paperback, Silver Tree Publishing, USA, March 3

from his superior on how to proceed in certain cases. The superior's decision constitutes the formulation of the solicitation policy[8].

The second possible classification of business policy is based on the level of management organization. There are policies that are used: by top managers, by middle managers, and by lower level managers. From there, business policy can be basic, principal, and departmental. The core policy, which is very broad in its radius, applies to the enterprise as a whole. The main policy, which is more specific, mostly applies to large segments of the enterprise, but usually does not apply to all segments. Departmental policy, which is the most specific, is applied to day-to-day activities at the departmental level.

The third possible classification of business policy is according to the functions or area of work in the enterprise, such as: production policy, sales policy, financial policy, research policy and accounting policy. The classification of business policy by function is widely accepted.

For each business function in the enterprise (marketing, production, procurement, investments, research and development, personnel, etc.) it is necessary to formulate a separate policy. The formulated policy by function contains principles, guidelines and criteria that direct the behavior of the corresponding function and determine the decision-making about the plan of the corresponding function. The functional policy should contribute to achieving the objectives of the function which are part of the structure of the company's objectives. Principles, guidelines and criteria between functions should be horizontally aligned and consistent. On the other hand, functional policies should be integrated into a harmonious whole and vertically aligned with the general policy of the company. Functional policy is a set of related principles for managing operations within a specific area of work or function. Organic functions for which leaders are formulated for later managerial decision-making are: marketing, production, purchasing, personnel, financial, investment, research and development, etc.

The fourth possible classification of business policy is according to the general management functions performed in the enterprise by managers: planning, organizing, coordinating, motivating and controlling.

[8] Meister J. C., Willyerd K. (2010) The 2020 Workplace: How Innovative Companies Attract, Develop, and Keep Tomorrow's Employees Today Hardcover", Harper Collins, N.Y., May 11

A fifth possible classification of business policy is by time. Time business policy is classified into short-term and long-term. Short-term policy has a tactical character, while long-term policies have a strategic character. The long-term policy is the basis for adopting a long-term plan that determines the growth and development of the enterprise. So, for example, if the main development goal for the next period is to increase the company's participation in the branch from 20% to 40%, the development policy will determine in principle how this should be achieved. The long-term policy is a direction for changing the market orientation, capacity, technology, personnel structure, production program, financial structure, etc. Formulated in this way, the long-term policy will represent a direction for the development of the long-term plan in which it will be specified how much the capacity of the existing production should be increased, and how much the new production should be.

The short-term policy is a set of principles, principles and criteria for making business decisions, with which the company adapts to changes in the environment during a year. Thus, for example, the current policy establishes the principle according to which in the current plan for the coming year, it will be possible to plan for production only such products that will not require new investments, which will not require imported materials and raw materials, which will enable the export of at least 50% of the planned volume of production and ensure a minimum profit rate of 20%. The current policy formulated in this way will represent a direction for the development of the company's current plan for the coming year. Starting from these principles, only during the development of the current plan will it be determined which specific products should be planned for the next year and in what volume, in order to be in accordance with the previous principles. At the same time, further research and analytical effort is needed for the production of such a product and for the preparation of an appropriate combination for their structural participation in the total planned production for the coming year[9].

2.3. The research

The research done for the purpose of this paper is to prove that the hiring of professional management staff in organizations in the Western Balkan countries is an important prerequisite that will provide confidence and greater security to young people for their retention and employment in their home countries.

[9] Jovcheska S., Popovski V. (2022) International Management, NUL "St. Clement of Ohrid", Skopje, R. North Macedoina

Building solid strategies for better salaries, appropriate to the increase in living costs, introducing and implementing an efficient reward system, continuous training and advancement of employees, building a favorable organizational climate, as well as respecting and protecting the rights of employees, in it will greatly contribute to the retention of professional staff in these countries.

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The implementation of trainings for managers on modern trends in organization management, trainings for managing different types of conflicts, trainings for professional negotiation, trainings managers in a fair, transparent and efficient way increases the motivation of employees to stay at work in their home countries.

2.4. Research Question

The research in this paper is initiated by the questions:

- What are the effects of the implementation of proffesional managerial staff in organizations in correlation with the reducing employee fluctuation and emigration of employees and young people from Western Balkans countries?
- How will be improved the quality of management to build a new organizational climate that will provide motivated people who will want to stay and work in their native countries and companies?
- What makes companies successful and how it reduce the emigration of young people from the Western Balkans?
- What abilities should managers possess in order to cope with professionally motivating the employes? How will managers create an organizational climate that will positively respond to the needs of employees in organizations?
- What is the new profile of a professional modern manager who creates a new organizational image?
- -Which strategy is the most effective for reducing fluctuation and emigration in the country from the Western Balkans?

2.5. Methodology

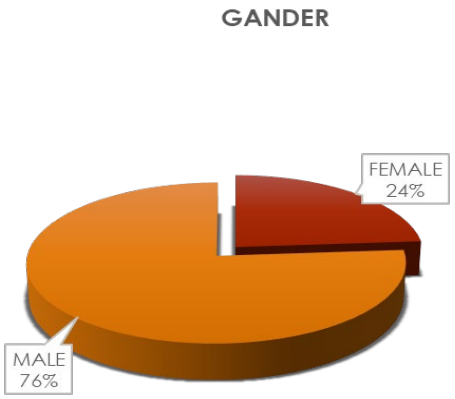
The research that was done for the purposes of this paper is based on the study of already existing literary works, questions and research. The methods and models of analysis and synthesis of the collected information were used to determine the importance of hiring professional management personnel to reduce emigration processes in the countries of the Western Balkans.

The use of the comparative method allowed us to get to know the difference between non-professional management practices and the modern way of managing organizations, in this paper it is assumed to be a strategic and key factor for the professional operation of companies in the countries of the Western Balkans and employee retention.

In order to conduct the research and prove the hypotheses in this paper, an interview was conducted with citizens who left the countries of the Western Balkans. The questionnaire was based on an attitude scale.

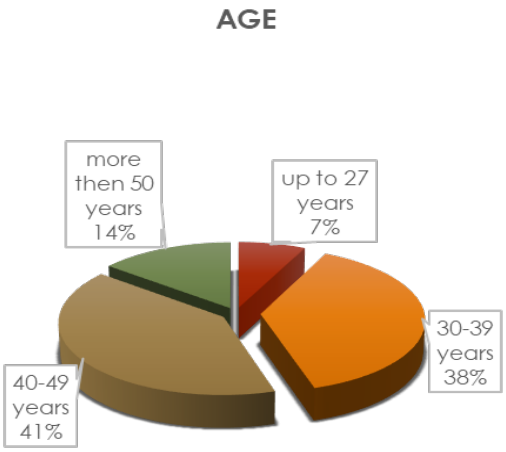
The research sample is randomly selected. An active part in this research took 42 respondents from the countries of the Western Balkans who left their home country in the last 10 years.

Figure 1: Gender of respondents



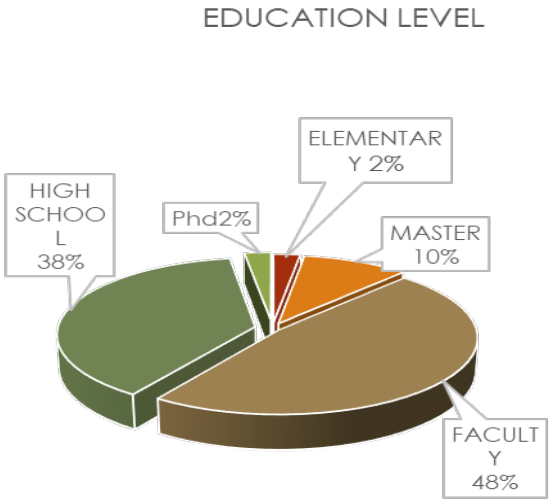
Source: Own research

Figure 2: Age structure



Source: Own research

Figure 3: Educational level



Source: Own research

HYPOTHESIS 1

1. In order to determine whether the implementation of professional management staff in organizations is correlated with the reduction of

fluctuation and emigration of employees and young people from the countries of the Western Balkans, we determined the Pearson correlation coefficient for the set main hypothesis, which is r = 0.788 and it is the same statistically significant because p < 0.01. Since r has a positive value close to 1, we conclude that the implementation of professional management staff in organizations is a prerequisite for the success and progress of the company.

Table 1: HYPOTHESIS 1

		Modern management	Efficiency of employees
Strongly disagree	frequency	2	0
	percent	4,8%	0%
Disagree	frequency	6	5
	percent	14,3%	11,9%
Neither agree nor disagree	frequency	4	7
	percent	9,5%	16,7%
Agree	frequency	20	23
	percent	47,6%	54,8%
Strongly agree	frequency	10	7
	percent	23,8%	16,7%

Piros correlation coefficient	0,788
p	0,000
Number of respondents	42

Source: Own research

HYPOTHESIS 2

2. The relationship between the implementation of a modern management, emphasizing the professionalism of managers and the level of efficiency of employees through the Pearson correlation coefficient, which is r = 0.788 and it is statistically significant because r < 0.01. Because r has a positive value close to 1, which signals that the professional way of management

increases the efficiency of employees, thus ensuring the long-term development of companies.

Table 2: HYPOTHESIS 2

		Modern management	Efficiency of employees
Strongly disagree	frequency	2	0
	percent	4,8%	0%
Disagree	frequency	6	5
	percent	14,3%	11,9%
Neither agree nor disagree	frequency	4	7
	percent	9,5%	16,7%
Agree	frequency	20	23
	percent	47,6%	54,8%
Strongly agree	frequency	10	7
	percent	23,8%	16,7%

Piros correlation coefficient	0,788
p	0,000
Number of respondents	42

Source: Own research

HYPOTHESIS 3

3. The relationship between the motivation of the company's employees and the reduction of fluctuation and emigration of employees and young people from the countries of the Western Balkans through the Pearson correlation coefficient, which is r = 0.903 and it is statistically significant because p < 0.01. Since r has a positive value close to 1, we conclude that the good motivated employees don't left the organizations and mother countries.

Table 3: HYPOTHESIS 3

		Motivation	Fluctuation and emigration
Strongly disagree	frequency	1	1
	percent	2,4%	2,4%
Disagree	frequency	6	7
	percent	14,3%	16,7%
Neither agree nor disagree	frequency	12	9
	percent	28,6%	21,4%
Agree	frequency	18	19
	percent	42,9%	45,2%
Strongly agree	frequency	5	6
	percent	11,9%	14,3%

Piros correlation coefficient	0,903
p	0,000
Number of respondents	42

Source: Own research

3. CONCLUSION

The work contributed to determining the effects of the implementation of professional management staff in organizations in correlation with the reduction of fluctuation and emigration of employees and young people from the countries of the Western Balkans.

The results of the research would contribute to improving the quality of management with organizations, with the aim of building a new organizational climate that will ensure motivated employees who will want to stay working in their parent companies and countries. All this will improve the company's success and reduce the emigration of young people from the countries of the Western Balkans.

The modern way of managing organizations imposes a need to profile a professional manager who will create a new image among employees as the most effective strategy for reducing fluctuation and emigration in the countries of the Western Balkans. The strategy for profiling professional managerial staff in organizations in the countries of the Western Balkans and creating a new organizational reality creates motivated employees that is directly related to the success of organizations.

The benefits of raising awareness of the need to profile professional management personnel in organizations in the Western Balkan countries and creating a new organizational reality and thereby creating motivated employees are directly related to the success of organizations and reducing turnover. All this leads to significant financial effects on the company's operations. And all this leads to a change in the previous "traditional" ways of management with the new modern management where the satisfaction of working in the home countries is seen as an advantage, not a failure. Therefore, the modern way of managing organizations actually increases the value of the organization itself.

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QUALITY OF LIFE THROUGH THE LENS OF MATERIAL DEPRIVATION, HOUSING CONDITIONS AND ECONOMIC SECURITY IN SELECTED SEE-6 COUNTRIES

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Abstract: *In recent decades, the measurement of the citizens' quality of life in a country has changed through the application of a more comprehensive scope of indicators that cover all aspects of an individual's life, both objectively and subjectively. Among other indicators, material living conditions, expressed through material deprivation and housing conditions, play an important role in determining an individual's subjective well-being. In addition, the risks that can unexpectedly and negatively affect the material security of the individual or household are also of particular importance and determine economic security. These different ways of measuring the quality of life in specific SEE -6 countries (Serbia, Montenegro, Croatia, Slovenia and North Macedonia) are the subject of analysis in this paper. Using the statistical method, the obtained data are analyzed in detail, compared and summary conclusions are drawn that the SEE -6 countries, especially those that are not members of the EU, lag behind the quality of life in the other EU member countries. For certain indicators the differences are not so striking, but for most they are significantly worse. With the onset of the pandemic, there is a tendency for them to deteriorate further or remain at the same level. All this indicates that socioeconomic changes and the introduction of specific measures are needed to improve the circumstances and general living conditions in these countries so that they can develop healthily and gradually in the coming years.*

Keywords*: Quality of life, material deprivation, housing conditions, economic security, SEE-6 countries*

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***JEL Classification**: I30, I31, D60*

1. INTRODUCTION

The wide disparities in the wealth of states and in the well-being of their citizens, the considerable social segregation, and the significant differences in the quality of life of individuals, especially during and after the global pandemic crisis, make it necessary to assess the quality of life using a broader set of indicators than just the economic-financial ones. Considering that socio-economic inequality is a major problem for developing countries and one of the main priorities for increasing economic development and human potential in the coming years, this justifies even more the assessment of the quality of life in the countries of Southeastern Europe, including North Macedonia.

The quality of life is a complex phenomenon, and many of its determinants are closely interrelated. Therefore, its assessment requires a comprehensive framework that includes a number of components and makes it possible to assess how the interrelationships among them shape people's lives.

In recent decades, the measurement of the quality of life of the population in a country has changed. Quality of life measurements cannot be just a canonical representation of the economic development of countries and their populations. Rather, they should capture the totality of life, or rather, individuals' objective and subjective perceptions of quality of life. The economic measure of GDP for measuring quality of life cannot do justice to the dimensions and breadth of the concept of quality of life. Therefore, broader indicators proposed and defined by the European Union are now used, namely: material living conditions, productive or main activity, health, education, leisure and social interactions, economic and physical security, governance and basic rights, natural environment and living environment, and overall experience of life. Eight of these dimensions relate to the functional capabilities that citizens should possess in order to effectively pursue their self-defined well-being according to their own values and priorities. The last dimension relates to personal achievement of life satisfaction and well-being. (Eurostat Statistics Explained)

The material standard of living, as one of the dimensions by which the quality of life of the population is perceived (according to the official statistical data of the European Union), can be evaluated by the material living conditions or material deprivation and housing conditions, in addition to income and

consumption. Moreover, the risks that can unexpectedly and negatively affect the material security of the individual or household are particularly important and determine the economic security, which is another dimension of the quality of life.

In this regard, there are large differences and inequalities in material living standards and economic security both between EU member states and within them (e.g., between different subgroups of the population). This is particularly true for developing countries, especially those at SEE -6 that currently have candidate country status for membership in the Union, as opposed to those that are already members. Hence the need to measure the quality of life in certain SEE -6 countries on the basis of these different aspects (material deprivation, housing conditions and economic security), which is the main objective of the present paper.

The methodological approach in this paper is mainly quantitative, which follows from the nature of the research question itself. More specifically, by using the statistical method in examining certain dimensions of quality of life represented by some of the indicators proposed and defined by the EU, a more realistic picture of the quality of life in certain countries of SEE -6 for which data are available (Serbia, Montenegro, Croatia, Slovenia and North Macedonia) is obtained. The obtained data are analyzed in detail, compared and summary conclusions are drawn, pointing out the necessary changes and actions. The latter points to the qualitative approach of the study.

The paper consists of four parts. The first part contains a brief overview of quality-of-life research, focusing on material living conditions and economic security. The second part describes data related to material deprivation in the SEE -6 countries. The next part is devoted to housing conditions as an important factor affecting quality of life in the countries studied. The fourth part deals with the main findings on economic security as another dimension of quality of life in selected SEE -6 countries. Finally, the research findings are summarized and evaluated.

2. LITERATURE REVIEW

According to Havasi (2013), quality of life, for which the synonym well-being is often used, is not the same as welfare. Quality of life has a broader meaning and encompasses many different aspects of human existence, indicating its multidimensional nature. The multidimensional nature of quality of life is also

confirmed by Eurostat's recommended multidimensional measurement of quality of life (Eurostat Statistics Explained, 2022), which focuses on the different aspects of quality of life and complements the traditionally used indicators of economic and social development. Moreover, Havasi (2013) considers that there are two different sides of quality of life: objective and subjective. This position is supported by a number of other authors who believe that the objective (descriptive) quality of life consists of people's living conditions, while the subjective (evaluative) quality of life is based on the assessment and evaluation of living conditions and feelings towards them (Džuka, 2004; Stiglitz et al., 2009).

There are a number of definitions of quality of life, which is why there is no universally accepted definition. For example, according to Fayers and Machin (2000), quality of life represents the differences between individuals' hopes and expectations and their current experiences. Quality of life is the extent to which a person's life is desirable or undesirable, focusing on external components such as environmental factors and income. (Diener, 2006) Next, in defining quality of life, Veenhoven (2000) distinguishes between four qualities of life, namely: environment, the person's ability to live, the environment's usefulness of life, and the person's appreciation of life. He considers the indicator of how long and happily a person lives as the best overall indicator available.

Indicators of material living conditions (the first of the nine quality-of-life dimensions) provide useful information on important quality-of-life issues, such as household income distribution, income inequality, poverty risk, subjective perceptions of poverty and social exclusion in households, material deprivation, or housing problems. It is therefore particularly important to assess the dimension of material living standards in this broader context and not only in monetary terms. (Eurostat Statistics Explained, 2022).

There are a number of studies that assess the quality of life in specific groups of countries, such as the Visegrad group, from different points of view. (Czapinski and Panek, 2013; Jakubcová et al., 2014; Nováková and Šoltés, 2016) In the study by Nováková and Šoltés (2016), the focus is on material living conditions, while material deprivation and housing conditions are also considered. It is concluded that a detailed analysis of sub-aspects is necessary to avoid misleading information that can be obtained with aggregate indices, especially in cases where there are large differences between social groups and households.

Another study conducted at the EU country level (European Union, 2015) shows that EU residents are more likely to live in undercrowded than overcrowded housing, and more than eight out of ten Europeans are relatively satisfied with the housing they live in. These studies also show that the ability to make ends meet is strongly related to financial satisfaction as a subjective indicator that measures living conditions. Accordingly, material deprivation had a negative impact on financial satisfaction in most EU countries.

Economic security encompasses many aspects, both subjective and objective. Economic security differs from income poverty and material deprivation (indicators that reflect the current situation) and points to the future. This means that economic security has a profound psychological dimension based on the current situation of a household/individual and expectations about how the situation will develop in the future. Economic security and vulnerability refer to economic aspects expressed through wealth, debts, and income/job insecurity. (European Union, 2015)

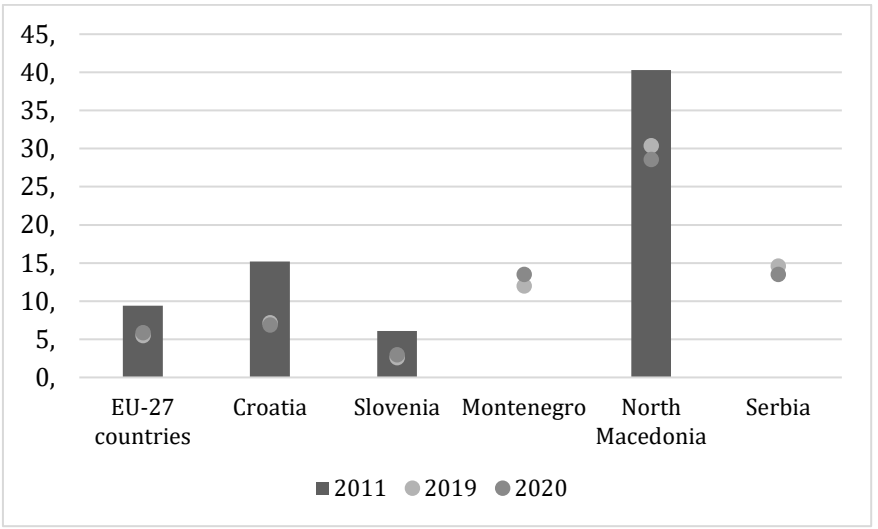
To date, a number of interesting studies have been conducted that address the issue of economic security as a factor in quality of life. One of them shows that during the period studied, the EU population had a higher proportion of people unable to pay for unexpected expenses, and that the proportion increased dramatically in the countries most affected by the economic crisis. According to this research, the proportion of people unable to pay for unexpected expenses is highest among the unemployed and lowest among the self-employed. It also shows that the inability to meet unexpected expenses tends to be associated with low financial satisfaction. (European Union, 2015) Another study indicates that economic security and family well-being remain important issues for communities and social workers, especially during economic downturns. It also indicates that the impact of economic insecurity on individuals, families, and communities can affect their physical, emotional, and mental well-being. (Cosby and Berry-Edwards, 2022)

3. MATERIAL DEPRIVATION

Material deprivation refers to a state of economic strain, defined as the enforced inability to afford a set of material standards that most people consider desirable or even necessary to live a decent life. This includes the inability to afford the following: unexpected financial expenses, a one-week holiday a year, mortgage or rent payments, utility bills, instalment payments on instalment purchases or other loan payments, a meal of meat, fish, or a protein equivalent

every other day, a car for personal use, heating to keep the home reasonably warm, and replacing worn-out furniture (at the household level), an Internet connection, replacing worn-out clothing with new, two pairs of well-fitting shoes (including a pair of all-weather shoes). The rate of severe material deprivation is defined as the proportion of the population that cannot afford at least four of the above items. (Eurostat statistics explained)

Figure 1: Severe material deprivation rate



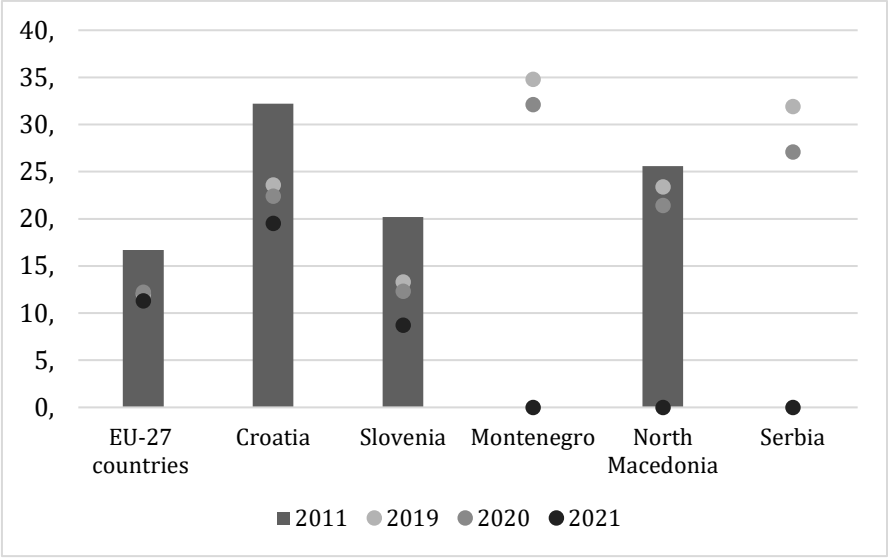
Source: Prepared by the authors based on data from Eurostat, available at: https://ec.europa.eu/eurostat/databrowser/view/ilc_mddd11/default/table?lang=en

In 2019, the rate of severe material deprivation in the EU was 5.5%. This represented a decrease of 3.9 percentage points compared to the situation in 2011. In SEE -6 countries (for which data are available), this percentage is higher in almost all countries except Slovenia. In the Republic of North Macedonia, 40.3% of the population lived in conditions of severe material deprivation in 2011, while in 2019 this percentage decreased to 30.4%, which is still a very high percentage of the population compared to the European average. (Figure 1) The fact that almost one third of the population lives in a situation of severe material deprivation shows that the Republic of North Macedonia is in an unenviable situation when considering the material situation of its population. The other countries show rather moderate values compared to the European average.

With the expectation that the Covid-19 pandemic crisis will worsen the situation, these data are receiving increasing attention. The latest available data for 2020 as the first year under pandemic conditions do not yet confirm expectations in almost all countries, but expectations for subsequent years remain to be seen.

Another data that complements the previous one is an indicator of the difficulty people have in making ends meet. Nearly one-fifth (18.5%) of the EU population lived in households that had difficulty and great difficulty making ends meet in 2019. Figure 2 and Figure 3 show that there are large differences in this indicator between EU Member States and countries that are not yet members of the Union. In the Republic of North Macedonia, 23.4% or almost a quarter of the population lived in a situation where it was difficult to make ends meet in 2019 (Figure 2), and this percentage (24.5%) is relatively similar for those who have great difficulty making ends meet (Figure 3). The situation in other countries, with the exception of Slovenia, is no better.

Figure 2: Inability to make ends meet with difficulty

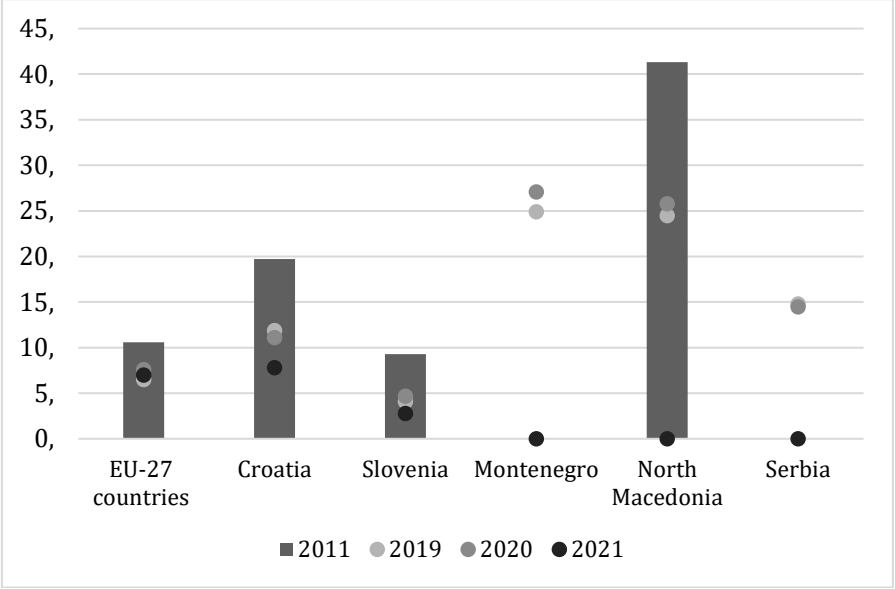


Source: Prepared by the authors based on data from Eurostat, available at: https://ec.europa.eu/eurostat/databrowser/view/ilc_mdes09/default/table?lang=en

It is expected that these numbers will continue to increase due to the pandemic crisis. However, the data show the opposite. In fact, in almost all countries, these

numbers decrease or remain at the same level during the years of the pandemic crisis.

Figure 3: Inability to make ends meet with great difficulty



Source: Prepared by the authors based on data from Eurostat, available at: https://ec.europa.eu/eurostat/databrowser/view/ilc_mdes09/default/table?lang=en

The declines are particularly marked in 2021, both in the EU-27 as a whole and in the countries that are the subject of the analysis and are already part of the EU (Croatia and Slovenia). It is assumed that the expectations were not met due to the efforts made by the countries to maintain a stable state of the economies and support the population and businesses through a variety of measures and subsidies.

4. HOUSING CONDITIONS

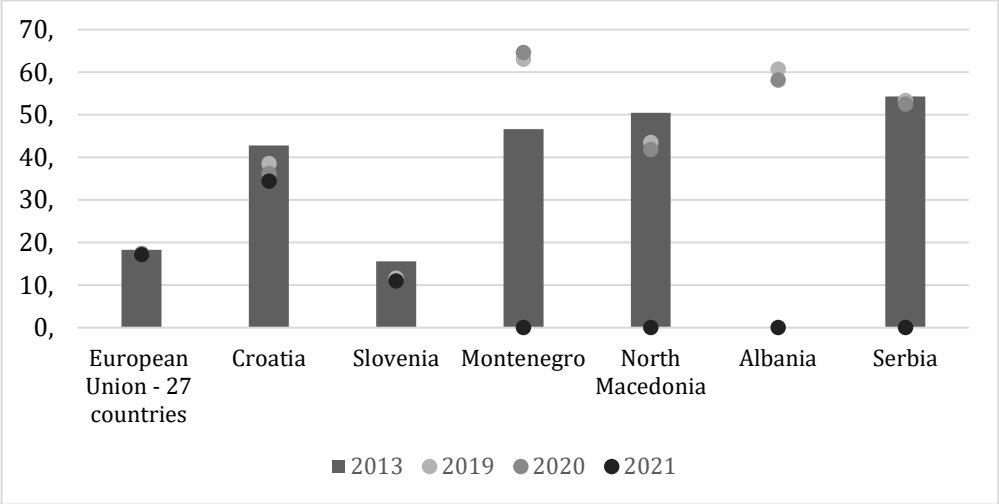
Housing conditions also have an important impact on quality of life. Low-quality housing may be associated with reduced well-being and increased levels of psychological stress, and it is therefore of interest to analyze these aspects in addition to information on material deprivation. There are several aspects of an objective nature that can form the basis for evaluating housing conditions in the EU, for example, structural problems in the dwellings (such as damp walls or a

leaking roof), overcrowding or lack of basic amenities (such as a toilet, shower or bathtub).

According to the data, in 2019, approximately one-sixth (17.1%) of the EU population lived in an overcrowded household, while almost one-third (32.8%) of the population lived in under-crowded housing. (Figure 4 and Figure 5) In this regard, the situation varies from country to country. Some of these differences between EU member states reflect social habits and changes, particularly related to the importance of family ties and the increasing proportion of people living alone.

The growing proportion of the population living in underoccupied housing can be linked, at least in part, to increasing longevity and the growing proportion of seniors choosing to stay in their own homes long after their children have left home. But it may also reflect local or national imbalances in the housing stock and consequently the lack of specific types of housing that prevent some people from moving.

Figure 4: Overcrowding rate



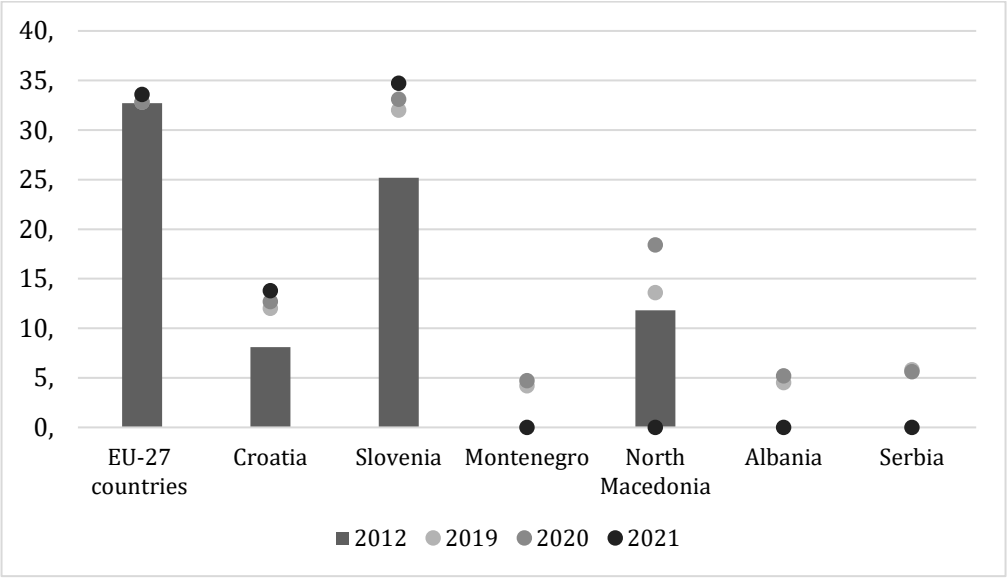
Source: Prepared by the authors based on data from Eurostat, available at: https://ec.europa.eu/eurostat/databrowser/view/ilc_lvho05a/default/table?lang=en

In the Republic of North Macedonia in 2019, the indicator of population overcrowding in occupied apartments and dwellings is quite high and amounts to 44% (Figure 4), while those who live in normal conditions and without overcrowding amount to only 13.6% of the total population (Figure 5). As it was previously mentioned, the living conditions are part of the socio-cultural

characteristics of the population, but also of the possibility or impossibility of having their own place of residence.

It can be noted that in the conditions of the Covid-19 pandemic, there is a slight increase in this percentage of people living in normal conditions and without overcrowding, in almost all countries, and a slight decrease in the percentage of people living in occupied apartments and dwellings.

Figure 5: People living in under-occupied dwellings (% share)



Source: Prepared by the authors based on data from Eurostat, available at: https://ec.europa.eu/eurostat/databrowser/view/ilc_lvho50a/default/table?lang=en

This can be explained by the increasing number of built apartments and the need for more comfortable living conditions for the population, given that a large part of them did their work from home, and also due to the reduction of the population as a result of death due to Covid-19.

5. ECONOMIC SECURITY

In a narrow sense, economic security can be defined in terms of a person's ability to access financial resources when they are urgently needed. The concept of economic security can be broadened to include people's overall vulnerability or resilience to such adverse situations and the existence of

support mechanisms-human and social resources-that provide a safety net for individuals in need, such as social security systems or support from family and/or friends. (Eurostat Statistics Explained)

In addition to the above indicators, economic security is also analyzed. For this purpose, the percentage of people who cannot cope with unexpected financial expenses is considered. In 2019, almost one in three people (30.9%) in the EU reported being unable to cope with unexpected financial expenses. In all economies studied, this percentage is higher than the EU average. This percentage shows a continuous downward trend over the years in almost all countries. These declines can also be observed in the years of the pandemic crisis. (Table 1) It is assumed that this percentage decreases under pandemic conditions because people, fearing uncertainty, reduced their spending to a minimum and met only the most necessary and basic needs, so that with less spending they were better prepared for unexpected expenses.

Table 1: Inability to face unexpected financial expenses

Country/year	2012	2019	2020	2021
EU-27 countries	40.0	30.9	32.5	:
Croatia	67.4	51.7	48.9	46.5
Slovenia	45.7	33.0	29.6	24.6
Montenegro	:	58.1	62.2	:
North Macedonia	64.4	57.3	50.9	:
Serbia	:	35.5	35.1	:

Source: Prepared by the authors based on data from Eurostat, available at: https://ec.europa.eu/eurostat/databrowser/view/ilc_mdes04/default/table?lang=en

This indicator can also be used to identify vulnerable groups in society that are unable to withstand the potential damage that can be caused by an unwanted (financial) shock. Thus, statistics confirm that the portion of the population living below (rather than above) the poverty line is larger and unable to withstand unexpected financial expenses. In 2019, almost two-thirds (63.7%) of the EU population living below the poverty line faced such risks, while the share of people living above the poverty line was less than a quarter (24.4%) - see Table 2 and Table 3. The situation is similar in almost all economies analyzed, with percentages above the EU average almost everywhere, except for Slovenia in 2020 and 2021.

Table 2: Population that was living below the poverty threshold and is unable to face unexpected financial expenses (% share)

Country/year	2012	2019	2020	2021
EU-27 countries	72.9	63.7	63.3	61.2
Croatia	91.2	83.2	82.3	83.1
Slovenia	75.4	67.8	61.8	54.5
Montenegro	:	80.7	85.0	:
North Macedonia	85.9	78.5	76.5	:
Serbia	:	66.2	71.4	77.7

Source: Prepared by the authors based on data from Eurostat, available at: https://ec.europa.eu/eurostat/databrowser/view/ilc_mdes04/default/table?lang=en

In the Republic of North Macedonia, the percentage of the population that is below the poverty threshold and cannot withstand a financial shock is 78.5% in 2019 (Table 2), while the percentage of the population that is above this threshold and is affected by economic shocks is 51.5% (Table 3). In both cases, these percentages decrease under Covid-19 pandemic conditions in almost all countries for the reasons mentioned above, when considering this indicator at the level of the total population.

Table 3: Population that was living above the poverty threshold and is unable to face unexpected financial expenses (% share)

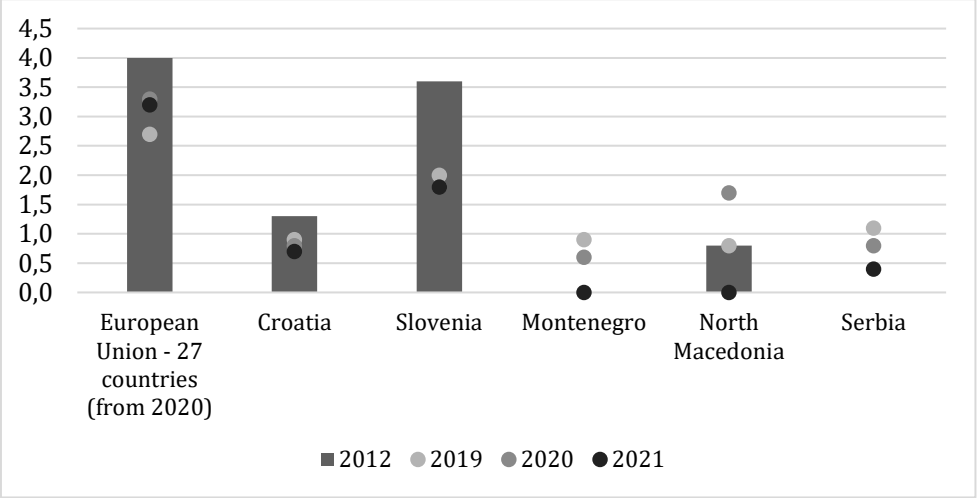
Country/year	2012	2019	2020	2021
EU-27 countries	33.3	24.4	26.4	23.8
Croatia	61.3	44.6	41.4	37.8
Slovenia	41.1	28.2	25.1	20.6
Montenegro	:	50.9	55.6	:
North Macedonia	56.7	51.5	43.7	:
Serbia	:	26.2	25.1	22.2

Source: Prepared by the authors based on data from Eurostat, available at: https://ec.europa.eu/eurostat/databrowser/view/ilc_mdes04/default/table?lang=en

Another indicator of economic security is the percentage of the population that is behind on its mortgage or rent payments. Figure 6 shows that this indicator is relatively high in the EU in 2019 compared to other economies analyzed. This

percentage is 2.7% and tend to increase in the next two years (3.2% and 3.3%, respectively), due to the pandemic.

Figure 6: Population in arrears on mortgage or rent payments (% share)



Source: Prepared by the authors based on data from Eurostat, available at: https://ec.europa.eu/eurostat/databrowser/view/ilc_mdes06/default/table?lang=en

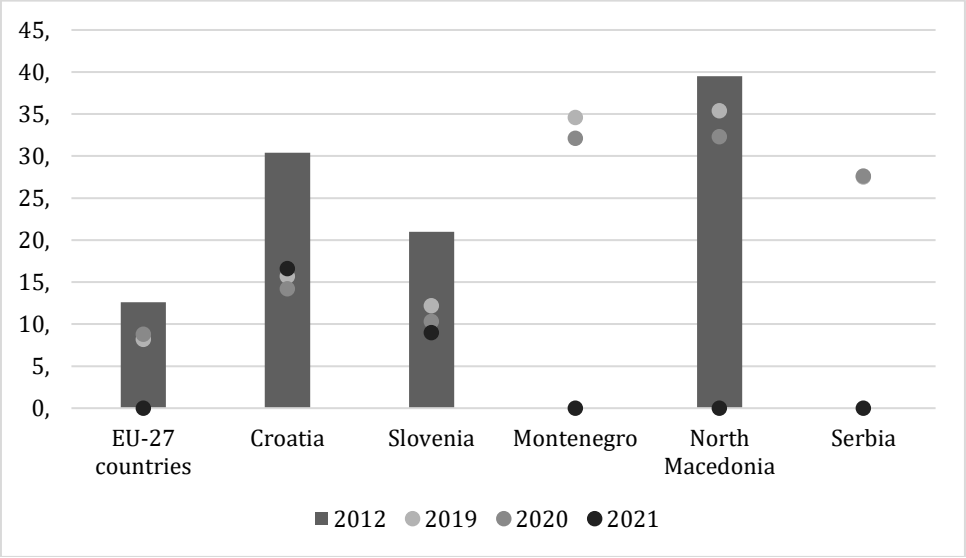
In general, however, it should be noted that this percentage is relatively low, especially in some EU countries. This could be partly related to the low proportion of the total population that has a mortgage or rents at market rates, which limits the proportion of people in arrears with mortgages or rents.

The population in the rest of the countries studied, including the Republic of North Macedonia, is characterized by an even lower proportion of mortgage or rent arrears. This can be explained by the fact that only a very small percentage of the population has the ability to take out a mortgage and pay rent for it, and that those who do so seem to belong to a population that is resistant to financial shocks.

Another indicator of the population's economic security that complements the previous one is arrears, both for payments related to housing (mortgage or rent) and for other items such as utility bills or rent payments, which are usually paid in monthly installments. Less than one-tenth (8.2%) of the EU population had such arrears in 2019. This percentage is higher compared to the EU-27 average in all economies studied and shows a decreasing trend over the years.

This decreasing trend is also observed in 2020, despite it being a pandemic year. (Figure 7)

Figure 7: Population in arrears on mortgage or rent, utility bills or hire purchase (% share)



Source: Prepared by the authors based on data from Eurostat, available at: https://ec.europa.eu/eurostat/databrowser/view/ilc_mdes05/default/table?lang=en

Low income (both in relative and absolute terms) undoubtedly goes a long way toward explaining the proportion of the population that is behind on mortgage or rent payments, utility bills, or installment payments, but there are other factors that can affect individuals' ability to service their debts and other regular expenses. One of these factors is household composition. For example, individuals living in single-person households with dependent children or households with three or more dependent children are more likely to experience economic insecurity than the population as a whole. (Eurostat Statistics Explained) Another factor is the percentage of the population that has no one to turn to for material help when faced with unexpected financial costs. As shown in Table 4, this percentage of the population is higher than the EU average in almost all of the economies studied, with the exception of Serbia.

Table 4: Population who have no one to ask for material help (% share)

	16 years and over	16-24 years	25-34 years	35-49 years	50-64 years	65-74 years	75 years and over
EU countries	19.4	10.6	13.2	17.4	22.4	25.0	24.8
Croatia	20.4	15.6	13.5	17.5	21.3	23.9	26.1
Slovenia	20.6	8.7	11.8	14.6	25.6	26.2	27.9
Montenegro	:	:	:	:	:	:	:
North Macedonia	36.1	33.4	31.4	36.6	38.0	40.7	39.1
Serbia	8.3	8.3	10.1	14.7	20.3	18.3	17.9

Source: Prepared by the authors based on data from Eurostat, available at: https://ec.europa.eu/eurostat/databrowser/view/ilc_mdes04/default/table?lang=en

According to the data, the Republic of North Macedonia has the highest percentage of the population that has no one to ask for material help, compared to the average of the EU countries. This percentage reaches 40.7% among the population aged 65-74, and the percentage of the population in the age group 16-24 is the lowest, at 31.4%. On average, 36% of the population in the Republic of North Macedonia, regardless of age group, have no one to turn to when they need material assistance. This indicates that despite frequent meetings with friends and family, the population of the Republic of North Macedonia still believes that there is not enough material support. Characteristically for all countries, as the age group increases, so does the percentage of the population that has no one to ask for material help. This indicates that it is usually the older people who find it more difficult to get help than the younger ones.

6. CONCLUSION

The SEE -6 countries, especially those that are not members of the EU, lag behind the quality of life in the other EU member countries. This is confirmed by many of the indicators analyzed. For certain indicators the differences are not so striking, but for most they are significantly worse. With the occurrence of the pandemic, there is a tendency for them to deteriorate further or remain at the same level.

Material deprivation in SEE -6 countries is higher in almost all countries except Slovenia. The Republic of North Macedonia has a very high percentage of material deprivation of the population, but the other countries have more moderate values compared to the European average. The indicator of people's difficulties in making ends meet shows a similar condition.

Regarding housing conditions, it can be noted that the indicator of overcrowding of apartments and houses is quite high in all countries of SEE except Slovenia, while the number of those living in normal conditions and without overcrowding is lower, which can be explained by the social habits and changes, especially regarding the importance of family ties and the impossibility of having their own residence.

The percentage of people unable to cope with unexpected financial expenses, analyzed in the context of economic security, shows a continuously decreasing trend over the years in almost all SEE -6 countries. Thereby, the part of the population living below the poverty line and unable to cope with unexpected financial expenditures is larger. The share of the SEE -6 population in arrears with mortgage or rent payments is lower compared to the EU-27 average. This does not testify to a higher quality of life, but rather to the low proportion of the total population that has a mortgage or rents at market rates, limiting the proportion of people who are behind on mortgage or rent payment. Confirming the inadequacy of economic security in the SEE -6 countries is also the higher percentage of the population that is behind on mortgage or rent debt, utility bills, or installment payments, and a population that has no one to turn to for material help when faced with unexpected financial costs. Economic security and the ability to cope with unexpected expenses were lowest among people living in single-person households with dependent children or in households with three or more dependent children.

All these facts point to the insufficient level of the quality of life of the population in the studied economies and the need for socio-economic changes and the introduction of specific measures to improve the circumstances and general living conditions in these countries, with a view to their healthy and progressive development in the coming years.

Considering that the period since the occurrence of the Covid-19 pandemic is relatively short and there have been few studies on the subject, the contribution of this study lies precisely in the perception of the changes that the pandemic has caused in the quality of life in the economies studied, especially through the prism of the selected indicators. On the other hand, the relatively short period of occurrence of the Covid-19 pandemic can also be considered as a shortcoming of this paper, because in this short period of one to two years we cannot get a real perception and evaluation of the impact that the Covid-19 pandemic really causes in this segment. To draw more realistic conclusions, at least three to five years should have passed since the pandemic occurred. The foregoing points to possible future research.

The practical contribution of the paper is that new knowledge about the quality of life in these countries can help policy makers develop appropriate strategies to improve it, including the necessary socioeconomic changes and concrete measures.

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IMPACT OF COVID-19 PANDEMIC ON INTERNATIONAL TRADE FLOWS IN SERBIA

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Abstract: *The COVID-19 pandemic has had an impact on the global business environment, and these consequences have been heterogeneous across countries. This work contributes to the scarce literature that has been published considering the COVID-19 pandemic's impacts on Serbian foreign trade. We analyzed the structure of Serbian imports and exports over the period 2019-2020, with a particular focus on the manufacturing sector being the most significant contributor to the Serbian international trade flows. The analysis shows that the structure of Serbian imports and exports, after the initial volatility following the outbreak of the pandemic in 2021, has stabilized and remained resilient to the impact of the COVID-19 pandemic, with very few exemptions.*

Keywords*: COVID-19 pandemic, import, export, Serbia*

1. INTRODUCTION

Appearing as an unprecedented global health crisis, the COVID-19 pandemic further contributed to a sharp decline in the world economy, including global trade. In order to mitigate shortages caused by the pandemic, 80 countries and separate customs territories enacted export prohibitions or restrictions by April 2020 (WTO, 2020). Trade barriers and restrictions brought on by an emergency situation sparked by COVID-19 had some negative repercussions. The economy initially experienced a significant shock when imports and exports were temporarily halted, leading to a supply shortage. The financial losses were then exacerbated by enormous layoffs and unprecedented unemployment followed by weak demand. Consistently with a pandemic spreading, the global merchandise trade dropped by 7.4% in 2020, which is the largest year-over-year decrease since 2009 (UNCTAD, 2021a). The developing economies in Africa and America faced the sharpest merchandise exports and imports slowdown. While emerging economies in America had their imports

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fall by 15.2% and exports by 9.5%, developing economies in Africa saw a decline in exports and imports of 19.3% and 13.2%, respectively (UNCTAD, 2021b).

The pandemic's impact on trade in services has been even more acute. The global services trade shrank by 20% year-over-year, which was a far more significant fall and the most prominent service trade decrease since records began to be kept. The key sectors, such as tourism, suffered greatly due to the disruptions brought on by the pandemic. According to UNCTAD (2021c), because of the collapse in travel, tourism, which made up one-fourth of the total and was, therefore, the greatest component of trade in services prior to the pandemic, fell by more than 50% overall and was still significantly below pre-pandemic averages in both 2020 and 2021. The transport sector's trade also decreased, but to a lesser degree. Due to the rise in global demand for air travel and an increase in air freight volumes, the transport sector recovered in the second half of 2021. On the other side, demand for information and communications technology (ICT), electronic commerce (e-commerce) and telecommunications services, as well as trade in these sectors, significantly increased during the lockdown and social distancing measures were applied (UNCTAD, 2022).

Since early 2021, the availability of vaccines and the key governments' economic responses (monetary and fiscal stimulus) have resulted in a fast but uneven recovery across nations and industries. The value of global trade also returned rapidly in 2021 as economic conditions improved, hitting a record high of roughly $28.5 trillion, which is a rise of about 13% from pre-pandemic levels (UNCTAD, 2022). Moreover, all sectors, except for energy products, faced significant growth in trade compared to the pre-epidemic levels. Although global trade had recovered to the pre-pandemic level, there was still a sizable disparity between trade partners and products in 2021, and not all losses from earlier sharp decreases have been entirely overwhelmed (OECD, 2022). Trade effects on certain goods, services, and trading partners were highly diverse, putting strain on some sectors and supply networks.

The Serbian merchandise trade similarly experienced a decline of 3.4% in 2020 before seeing a significant recovery, with a gain of 25.5% in 2021. Despite a recovery and rapid growth rates, Serbian trade nevertheless faces numerous challenges.

The main objective of this work is to discuss the impact of the pandemic on the international trade, with a brief empirical overview of the change in the

structure of Serbian imports and exports. The first section of the work reviews relevant literature that discusses how the pandemic reshaped international trade flows. The second part deals with the empirical analysis of the structure of the Serbian exports and import over the period 2019-2021.

2. LITERATURE REVIEW

International trade is one of the key forces behind economic development that directly and indirectly impacts the agricultural, industrial, and service sectors (Zdravković & Bradić-Martinović, 2021). Participation in international trade flows promotes economic growth and the development of national economies while enhancing their competitiveness. Beyond promoting quicker growth, international trade helps nations raise productivity while providing their inhabitants and businesses with greater opportunities (Cerdeiro & Komaromi, 2017). Generally speaking, international trade enables consumers to benefit from imports' increased competitiveness and product diversification on domestic markets, while firms profit from exports' expansion of domestic production on foreign markets (Schneider, 2005). Busse and Königer (2012) also provide evidence that trade, including trade expansion, have a favourable and substantial effect on growth. International trade is particularly crucial for developing nations since it fosters the realisation of the benefits of economies of scale, enables better capacity utilisation, attracts foreign direct investments, decreases unemployment, and improves technology capacities (Jovičić & Stojanović, 2022).

As Beraha and Jovičić (2021) mention in their research, plenty of empirical works support the idea that trade openness stimulates economic growth. Karras's (2003) findings demonstrate that trade openness has a favourable, long-lasting, statistically significant, and sizeable economic impact on economic growth. Besides, the effect is robust for both data sets employed in the research, as well as for different estimation methods and lag lengths (Karras, 2003). According to Zarra-Nezhad et al. (2014), higher economic growth rates are strongly connected with higher trade rates in a broad sample of developing and developed countries, confirming views that support free trade. The findings of Idris et al. (2016) confirm the endogenous theory that stronger growth stems from expanded openness, which in turn promotes increased openness. Keho (2017) proposes that trade openness has a favourable impact on economic growth in the short and long terms and that trade openness and capital formation have a solid and positive complementary relationship in fostering economic growth. The empirical findings of Huchet-Bourdon et al. (2018) show

that apart from the trade ratio, the quality and variety of the export basket are also important in terms of the relationship between trade openness and growth. In addition, based on evidence of a nonlinear relation between export variety, export ratio, and growth, authors conclude that countries with higher export levels will experience faster growth after they have attained a certain level of extensive margin of exports (Huchet-Bourdon et al., 2018).

Exports have special significance when it comes to international trade, and export-led growth has been a highly debated topic (Malović & Zdravković, 2017). Export-led growth of a small open economy in the post-globalised world. Review of applied socio-economic research, 30-44.). Many studies have discovered results that support the export-led growth concept. Using data from 11 developing nations, Balassa (1978) found a positive association between exports and economic growth. Hesse (2009) provides convincing empirical evidence that export diversification increases per capita income growth, and also discovers that this effect may be nonlinear, with developing nations benefiting from export diversification in contrast to the most developed nations, which exploit export specialisation. According to Nguyen (2011), exports support higher levels of product specialisation which, apart from higher productivity, encourages stronger economic growth. According to Eberhard-Ruiz and Calabrese (2018), the level of export competitiveness is of great importance for a country's effective participation in international trade, as well as the eventual management of the balance of trade distress. Hagemejer and Mućk (2019) revealed that from 1995 to 2014, exports considerably boosted Central and Eastern Europe countries' economic development. In addition, export-led economic growth is crucial for enhancing economic growth in developing countries (Hakobyan, 2017), and it is particularly vital to relatively small countries (such as Serbia), which are more dependent on cooperation with foreign partners (Jovičić & Marjanović, 2022).

The COVID-19 pandemic gave a new impulse to increase trade-related research since "*trade volumes collapsed at the same time in all nations and almost all products at a pace never seen before*" (Baldwin & di Mauro, 2020, p.17). For instance, Hayakawa and Mukunoki (2021), exploring monthly data on global trade in the period from January 2019 to August 2020, found very detrimental consequences of COVID-19 on both exporting and importing nations' international trade, and they also revealed that there were heterogeneous effects across industries. Using the monthly trade data of 68 countries exporting across 222 destinations between January 2019 and October 2020, Barbero et al. (2021) got threefold conclusions: (I) the negative impact of COVID-19 was more severe for countries participating in regional trade agreements prior to

the pandemic; (II) the impact of COVID -19 was negative and strong when indicators related to governmental actions were considered; (III) detrimental effect is more pronounced when the exporter and importer countries have the same income levels.

Experiences from previous financial crises have shown that trade may be the mechanism through which the effects of the crisis are transmitted between countries (Cravino & Levchenko, 2017; Bräuning & Sheremirov, 2021), where developing and small open economies are more vulnerable (Berkmen et al., 2012; Chor & Manova, 2012). In the case of the COVID-19 pandemic, according to Li & Lin (2021), the three main channels by which COVID-19 affects trade are as follows: (I) reductions in supply and supply capacity; (II) a decline in foreign demand; and (III) trade costs rise.

Di Giovanni et al. (2022) reveal that despite the fact that there was a high demand for products, global trade did not react to the changes in GDP as significantly as it did during the global financial crisis in 2008. Hayakawa and Mukunoki (2021) conclude that even though COVID-19's adverse effects on exporting nations continued until August 2020, their severity gradually diminished. Furthermore, according to Mena et al. (2022), while the challenges posed by the COVID-19 pandemic have had an impact on the global business environment, these consequences have been heterogeneous across countries, which means that some nations experienced severe trade losses, whereas others were quite resilient to COVID-19 effects.

Considering the COVID-19 pandemic's impacts on Serbian foreign trade, it could be concluded that scarce literature has been published on this topic. Nevertheless, the authors mostly consider that Serbian trade, compared to other countries, was not affected so significantly (Kisin et al., 2022; Jovičić & Marjanović, 2021; Lukić, 2021; Ranđelović, 2021). According to Kisin et al. (2022), the COVID-19 pandemic effects on Serbian trade were not prominent in terms of scope or structure and were manifested mainly in stagnation. On the other side, Jovičić and Marjanović (2021) discovered that the sectors that suffered the most in 2020 were those that saw a decline in demand for goods or were intensively involved in the global supply chains. All sectors, however, experienced a robust recovery in 2021. Ranđelović (2021) found that the real decline in global value added of the trade, travel, and tourism sector in 2020 was lower by 58% compared to the decrease seen across the EU-27, which could be explained by the fact that Serbia's tourism industry relies less on foreign visitors than many other European nations, and international tourism receipts as a percentage of total exports, were even less than in some of the

Western Balkan countries (Pavlović et al., 2022). Furthermore, by successfully responding to the crisis brought on by the COVID-19 pandemic, Serbia achieved macroeconomic stability and a recovery of the key macroeconomic indicators, including foreign trade (Jovičić & Marjanović, 2021).

3. EMPIRICAL ANALYSIS

In this paper, we analyze Serbian international trade flows, with a particular focus on the changes in the structure of the imports and exports. We covered the period 2019-2021, i.e. the year before the outbreak of the pandemic and two years in which the impact of the pandemic was the most severe, but still not interfered with the outbreak of the Ukrainian crisis. Data are analyzed on a quarterly basis to get a deeper insight into the volatility of the trade flows structure.

The change in the structure of Serbian exports is displayed in Table 1. As can be noticed, the vast majority of Serbian exports aree made of manufacturing products, followed by the wholesale and retail trade and the mining and quarrying. When the structure of the export is considered, it can be noticed that the share of the mining and quarrying has substantially increased over the considered period. However, this increase cannot be attributed solely to the impact of the pandemic, but rather to investments of Zijin in copper extraction and production, which almost tripled exports from Serbia to China in 2021. When only 2020 is considered, it can be noticed that the share of the manufacturing in total exports significantly dropped by around 5 percentage points. On the other hand, shares of agriculture and wholesale and retail slightly increased in 2020. Eventually, shares of the manufacturing, agriculture and wholesale and retail stabilized in 2021, with somewhat lower shares than in 2019 due to the sharp surge of exports of mining and quarrying products.

Table 1: Structure of Serbian export, 2019-2021

	2019				2020				2021			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
AGRICULTURE, FORESTRY AND FISHING	1.75	1.59	1.45	1.67	1.98	2.59	2.23	2.72	2.10	1.52	1.55	1.69
MINING AND QUARRYING	2.72	4.55	6.02	6.01	4.39	5.73	6.22	5.78	4.39	7.17	9.70	10.34
MANUFACTURING	74.73	74.30	72.50	73.02	74.13	69.01	71.47	69.53	74.10	74.10	70.97	71.70
ELECTRICITY, GAS, STEAM AND AIR CONDITIONING SUPPLY	1.61	2.09	1.41	1.25	1.70	1.90	1.93	2.38	1.96	1.81	1.24	1.34
CONSTRUCTION	0.69	0.58	0.53	0.59	0.41	0.37	0.34	0.29	0.45	0.45	0.33	0.42
WHOLESALE AND RETAIL TRADE; REPAIR OF MOTOR VEHICLES AND MOTORCYCLES	14.44	14.34	15.37	15.05	14.98	18.46	16.11	17.23	15.02	13.19	13.78	12.35
TRANSPORTATION AND STORAGE	1.72	0.86	1.31	0.79	0.42	0.26	0.27	0.39	0.59	0.46	1.12	0.53
ACCOMMODATION AND FOOD SERVICE ACTIVITIES	0.01	0.03	0.03	0.06	0.03	0.04	0.06	0.04	0.01	0.02	0.02	0.02
INFORMATION AND COMMUNICATION	0.30	0.32	0.29	0.28	0.22	0.26	0.24	0.26	0.22	0.20	0.46	0.50
OTHER	2.02	1.33	1.09	1.27	1.74	1.38	1.13	1.37	1.13	1.08	0.84	1.11

Source: authors' calculation

On the other hand, the structure of the import (displayed in Table 2) is more diversified than in the case of export. Manufacturing and retail sectors dominate the composition of the import, but the import of energy and mining and quarrying is also considerable. What is particularly interesting to notice is that the share of energy was declining over the considered period, but this trend was interrupted following the global uncertainty in the eve of the Ukrainian crisis. The other major impact of the pandemic on the structure of Serbian imports is steady increase in the share of the manufacturing sector starting following the drop in the first half of 2020, when the pandemic containment measures were at the pick.

Table 2: Structure of Serbian import, 2019-2021

	2019				**2020**				**2021**			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
AGRICULTURE, FORESTRY AND FISHING	0.71	0.79	0.53	0.45	0.50	0.87	0.72	0.51	0.64	0.70	0.62	0.52
MINING AND QUARRYING	5.60	8.24	8.36	8.69	7.16	4.25	6.99	6.48	4.93	7.26	7.84	6.28
MANUFACTURING	38.49	37.86	36.48	34.18	35.45	38.79	38.69	38.26	43.43	41.83	42.80	42.74
ELECTRICITY, GAS, STEAM AND AIR CONDITIONING SUPPLY	5.68	2.90	2.72	3.38	4.86	2.53	1.81	2.52	2.68	2.19	2.64	3.18
CONSTRUCTION	1.79	3.20	5.25	4.09	3.68	2.24	2.74	2.56	2.80	2.79	2.73	2.49
WHOLESALE AND RETAIL TRADE; REPAIR OF MOTOR VEHICLES AND MOTORCYCLES	41.82	41.61	41.38	38.85	40.35	45.54	43.46	42.84	40.47	39.24	37.96	39.49
TRANSPORTATION AND STORAGE	2.09	1.52	1.57	2.68	1.10	1.40	0.97	1.44	1.25	1.43	1.73	1.22
ACCOMMODATION AND FOOD SERVICE ACTIVITIES	0.07	0.08	0.07	0.09	0.07	0.06	0.11	0.11	0.06	0.08	0.07	0.07

	2019				2020				2021			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
INFORMATION AND COMMUNICATION	1.49	1.48	1.46	1.70	1.50	1.58	1.55	1.47	1.16	1.08	0.89	1.06
OTHER	2.26	2.32	2.18	5.89	5.32	2.75	2.95	3.81	2.58	3.40	2.71	2.95

Source: authors' calculation

Eventually, we focused on the structure of the import and export of the manufacturing sector, being the most important one for the Serbian international trade flows. The detailed analysis of the structure of the import and export of the Serbian manufacturing sector over the period 2019-2021 is shown in Tables 3 and 4.

Table 3: Structure of the export of the manufacturing sector, 2019-2021

	2019				2020				2021			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Processing and preserving of meat and production of meat products	0.70	0.81	0.75	0.64	0.76	1.01	0.84	0.69	0.58	0.68	0.61	0.66
Processing and preserving of fish, crustaceans and molluscs	0.03	0.04	0.07	0.05	0.03	0.05	0.08	0.09	0.03	0.03	0.04	0.06
Processing and preserving of fruit and vegetables	3.16	3.01	3.90	3.85	4.25	5.82	5.64	5.59	3.81	3.38	4.82	5.14
Manufacture of vegetable and animal oils and fats	1.65	1.55	1.69	1.82	1.91	2.95	2.35	2.51	2.12	1.75	2.03	2.26

	2019				2020				2021			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Manufacture of dairy products	0.92	1.18	1.11	0.59	0.96	1.59	1.39	0.71	0.77	1.27	1.09	0.56
Manufacture of grain mill products, starches and starch products	0.57	0.65	0.77	0.72	0.63	1.38	0.98	0.91	0.57	0.70	0.66	0.60
Manufacture of bakery and farinaceous products	0.86	0.88	0.93	1.03	1.08	1.71	1.43	1.42	0.98	1.05	0.94	1.06
Manufacture of other food products	2.05	2.22	2.08	2.04	1.91	2.81	2.45	3.02	2.31	2.11	2.14	2.38
Manufacture of prepared animal feeds	1.33	1.42	1.41	1.36	1.67	2.82	2.04	2.28	1.65	1.72	1.72	1.81
Manufacture of beverages	1.18	1.76	1.99	1.29	1.20	1.45	1.69	1.51	1.29	1.79	2.01	1.32
Manufacture of tobacco products	0.61	0.81	1.44	1.43	1.30	0.21	0.28	0.30	1.64	1.53	1.44	1.42
Preparation and spinning of textile fibres	0.15	0.15	0.13	0.15	0.14	0.23	0.16	0.18	0.11	0.13	0.10	0.15
Weaving of textiles	0.21	0.19	0.23	0.36	0.31	0.27	0.24	0.31	0.22	0.14	0.17	0.17
Finishing of textiles	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manufacture of other textiles	2.23	2.15	1.85	1.92	2.01	1.59	2.32	2.29	2.05	1.85	1.37	1.46
Manufacture of wearing apparel, except fur apparel	2.14	2.00	2.11	2.06	2.00	1.91	2.23	1.98	1.85	1.77	1.86	2.00
Manufacture of articles of fur	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	2019				2020				2021			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Manufacture of knitted and crocheted apparel	1.56	1.29	1.70	1.92	1.73	0.82	1.31	1.15	1.21	0.92	1.17	1.25
Tanning and dressing of leather; manufacture of luggage, handbags, saddlery and harness; dressing and dyeing of fur	0.89	0.84	0.86	0.83	0.80	0.51	0.90	0.81	0.76	0.77	0.63	0.75
Manufacture of footwear	1.54	1.19	1.34	1.17	1.32	0.56	1.06	0.80	1.21	1.01	1.02	0.79
Sawmilling and planing of wood	0.51	0.50	0.50	0.50	0.49	0.76	0.67	0.73	0.47	0.58	0.51	0.50
Manufacture of products of wood, cork, straw and plaiting materials	0.82	0.84	0.83	0.87	0.86	1.21	1.20	1.18	0.74	0.83	0.79	0.77
Manufacture of pulp, paper and paperboard	1.09	1.02	1.05	0.99	1.29	1.86	1.38	1.22	0.90	0.76	0.63	1.03
Manufacture of articles of paper and paperboard	2.68	2.71	2.69	2.56	2.41	4.34	3.30	2.97	2.32	2.50	2.29	2.42
Printing and service activities related to printing	0.58	0.55	0.61	0.65	0.65	0.90	0.80	0.78	0.49	0.52	0.54	0.60
Reproduction of recorded media	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manufacture of refined petroleum products	0.24	0.25	0.18	0.22	0.20	0.11	0.16	0.20	0.26	0.27	0.32	0.38
Manufacture of basic chemicals, fertilisers and	3.78	2.68	3.75	2.99	3.73	4.25	4.25	4.24	3.66	3.35	4.22	3.21

	2019				2020				2021			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
nitrogen compounds, plastics and synthetic rubber in primary forms												
Manufacture of pesticides and other agrochemical products	0.16	0.11	0.04	0.07	0.24	0.30	0.13	0.09	0.23	0.10	0.03	0.06
Manufacture of paints, varnishes and similar coatings, printing ink and mastics	0.26	0.34	0.33	0.26	0.31	0.67	0.54	0.38	0.30	0.39	0.35	0.27
Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations	1.97	1.59	1.89	1.83	2.13	3.12	3.29	3.22	2.52	2.75	2.75	2.77
Manufacture of other chemical products	0.68	0.54	0.61	0.76	0.63	0.98	0.65	0.83	0.58	0.55	0.60	0.66
Manufacture of man-made fibres	0.01	0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.01
Manufacture of basic pharmaceutical products	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01
Manufacture of pharmaceutical preparations	1.70	2.01	2.14	2.37	1.86	3.04	1.87	2.06	1.56	1.91	1.66	1.91

	2019				2020				2021			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Manufacture of rubber products	6.61	5.48	6.20	5.82	5.60	2.34	2.82	2.82	5.71	5.01	5.25	5.37
Manufacture of plastic products	4.72	4.82	4.83	4.33	4.76	5.54	5.32	4.50	4.50	4.77	4.45	4.18
Manufacture of glass and glass products	0.18	0.24	0.29	0.18	0.17	0.22	0.14	0.09	0.18	0.19	0.14	0.12
Manufacture of refractory products	0.01	0.02	0.02	0.04	0.03	0.01	0.02	0.01	0.01	0.01	0.03	0.01
Manufacture of clay building materials	0.41	0.58	0.68	0.50	0.42	0.79	0.90	0.61	0.38	0.54	0.53	0.47
Manufacture of other porcelain and ceramic products	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.03	0.02	0.02	0.02	0.02
Manufacture of cement, lime and plaster	0.08	0.14	0.13	0.12	0.08	0.17	0.15	0.09	0.04	0.08	0.06	0.09
Manufacture of articles of concrete, cement and plaster	0.18	0.27	0.25	0.16	0.23	0.48	0.36	0.25	0.19	0.25	0.23	0.20
Cutting, shaping and finishing of stone	0.03	0.05	0.03	0.03	0.03	0.04	0.04	0.04	0.03	0.04	0.02	0.02
Manufacture of abrasive products and non-metallic mineral products n.e.c.	0.34	0.38	0.45	0.42	0.42	0.71	0.62	0.45	0.38	0.46	0.42	0.41
Manufacture of basic iron and steel and of ferro-alloys	6.30	6.40	4.74	5.28	5.20	6.32	4.56	3.89	3.87	4.28	6.97	6.10

	2019				2020				2021			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Manufacture of tubes, pipes, hollow profiles and related fittings, of steel	0.26	0.24	0.22	0.24	0.24	0.18	0.14	0.17	0.24	0.23	0.21	0.25
Manufacture of other products of first processing of steel	0.07	0.08	0.12	0.14	0.12	0.19	0.20	0.18	0.10	0.14	0.18	0.22
Manufacture of basic precious and other non-ferrous metals	2.16	2.05	2.06	1.95	1.63	0.96	0.83	0.76	2.27	2.45	2.42	2.59
Casting of metals	1.78	2.03	1.63	2.52	2.12	1.20	1.92	2.30	1.73	1.61	1.48	1.42
Manufacture of structural metal products	1.46	1.55	1.69	1.65	1.75	2.38	2.13	2.15	1.52	2.09	2.06	2.07
Manufacture of tanks, reservoirs and containers of metal	0.13	0.17	0.24	0.32	0.20	0.26	0.32	0.34	0.20	0.20	0.24	0.27
Manufacture of steam generators, except central heating hot water boilers	0.03	0.04	0.03	0.03	0.02	0.02	0.03	0.04	0.01	0.05	0.02	0.02
Manufacture of weapons and ammunition	0.95	0.67	0.78	1.20	0.49	1.29	1.10	1.27	0.00	0.00	0.00	0.01
Forging, pressing, stamping and roll-forming of metal; powder metallurgy	0.08	0.06	0.07	0.09	0.09	0.12	0.10	0.12	0.07	0.08	0.07	0.07
Treatment and coating of metals; machining	1.29	1.31	1.44	1.40	1.45	1.51	1.39	1.53	1.68	1.73	1.85	1.74

	2019				2020				2021			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Manufacture of cutlery, tools and general hardware	0.42	0.38	0.39	0.42	0.44	0.48	0.51	0.55	0.36	0.47	0.45	0.42
Manufacture of other fabricated metal products	1.79	2.16	1.99	1.71	1.92	2.70	2.34	2.26	1.76	2.19	2.10	1.84
Manufacture of electronic components and boards	0.38	0.41	0.53	0.53	0.61	0.89	0.73	0.67	0.62	0.64	0.59	0.69
Manufacture of computers and peripheral equipment	0.44	0.36	0.47	0.43	0.26	0.16	0.18	0.23	0.36	0.50	0.40	0.34
Manufacture of communication equipment	0.02	0.02	0.03	0.05	0.05	0.04	0.04	0.02	0.04	0.02	0.02	0.04
Manufacture of consumer electronics	0.01	0.21	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.02	0.02	0.01
Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks	0.20	0.21	0.23	0.19	0.19	0.20	0.21	0.25	0.16	0.19	0.20	0.23
Manufacture of irradiation, electromedical and electrotherapeutic equipment	0.02	0.02	0.03	0.03	0.01	0.00	0.00	0.01	0.03	0.05	0.02	0.03
Manufacture of optical instruments and photographic equipment	0.13	0.13	0.08	0.08	0.10	0.14	0.23	0.16	0.08	0.09	0.11	0.14

	2019				2020				2021			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Manufacture of electric motors, generators, transformers and electricity distribution and control apparatus	1.21	1.23	1.23	1.19	1.23	1.28	1.15	1.13	1.72	1.68	1.55	1.53
Manufacture of batteries and accumulators	0.06	0.05	0.05	0.05	0.07	0.08	0.10	0.12	0.08	0.05	0.06	0.09
Manufacture of wiring and wiring devices	2.39	2.32	2.34	2.47	2.70	2.04	3.20	4.01	3.72	3.63	2.93	3.43
Manufacture of electric lighting equipment	0.21	0.28	0.49	0.32	0.30	0.40	0.44	0.36	0.28	0.46	0.45	0.44
Manufacture of domestic appliances	1.60	1.97	2.16	2.07	1.44	1.08	1.46	1.27	1.96	2.21	2.06	2.02
Manufacture of other electrical equipment	0.10	0.22	0.31	0.27	0.34	0.40	0.42	0.47	0.37	0.33	0.33	0.36
Manufacture of general-purpose machinery	2.72	2.27	2.48	2.68	2.75	3.18	3.57	3.27	2.58	2.24	2.07	1.96
Manufacture of other general-purpose machinery	1.00	1.13	1.06	1.14	1.06	1.10	1.13	1.31	0.92	1.16	1.31	1.05
Manufacture of agricultural and forestry machinery	0.20	0.25	0.18	0.14	0.23	0.39	0.26	0.26	0.21	0.26	0.18	0.20
Manufacture of metal forming machinery and machine tools	0.63	0.54	0.46	0.52	0.42	0.36	0.33	0.30	0.42	0.40	0.39	0.46

	2019				2020				2021			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Manufacture of other special-purpose machinery	0.47	0.50	0.53	0.56	0.46	0.49	0.43	0.77	0.47	0.54	0.56	0.55
Manufacture of motor vehicles	4.24	5.61	2.59	3.14	3.52	0.01	0.01	0.01	2.47	2.29	1.54	1.57
Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers	0.55	0.52	0.45	0.39	0.40	0.46	0.45	0.41	0.45	0.45	0.47	0.40
Manufacture of parts and accessories for motor vehicles	11.10	10.48	10.15	10.83	10.26	3.99	6.97	8.36	12.97	12.03	10.77	11.04
Building of ships and boats	0.23	0.30	0.29	0.43	0.22	0.01	0.01	0.00	0.21	0.12	0.19	0.19
Manufacture of railway locomotives and rolling stock	0.21	0.20	0.23	0.23	0.19	0.06	0.01	0.01	0.23	0.25	0.27	0.36
Manufacture of air and spacecraft and related machinery	0.04	0.04	0.04	0.04	0.03	0.04	0.02	0.02	0.02	0.03	0.03	0.02
Manufacture of transport equipment n.e.c.	0.13	0.11	0.06	0.03	0.16	0.21	0.15	0.06	0.19	0.21	0.09	0.08
Manufacture of furniture	2.12	2.35	2.54	2.79	2.52	2.10	2.96	3.04	2.31	2.26	2.26	2.35
Manufacture of jewellery, bijouterie and related articles	0.11	0.10	0.12	0.09	0.14	0.10	0.12	0.16	0.07	0.12	0.12	0.11

	2019				2020				2021			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Manufacture of musical instruments	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manufacture of sports goods	0.01	0.02	0.01	0.01	0.02	0.01	0.01	0.02	0.02	0.02	0.01	0.01
Manufacture of games and toys	0.01	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Manufacture of medical and dental instruments and supplies	0.74	0.70	0.76	0.76	0.89	1.12	0.98	1.01	0.69	0.66	0.51	0.64
Manufacturing n.e.c.	0.72	0.68	0.60	0.55	0.80	1.15	0.81	0.84	0.74	0.68	0.58	0.59
Repair of fabricated metal products, machinery and equipment	2.39	2.29	2.14	2.09	2.33	1.22	1.86	2.45	3.06	2.30	2.08	2.63
Installation of industrial machinery and equipment	0.06	0.07	0.07	0.04	0.05	0.08	0.13	0.08	0.04	0.10	0.04	0.06

Source: authors' calculation

Table 4: Structure of the import of the manufacturing sector, 2019-2021

	2019				2020				2021			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Processing and preserving of meat and production of meat products	0.89	1.03	1.18	1.12	1.31	1.28	1.00	0.90	0.66	0.63	0.77	0.96
Processing and preserving of fish, crustaceans and molluscs	0.16	0.18	0.21	0.26	0.15	0.16	0.16	0.19	0.14	0.16	0.14	0.14
Processing and preserving of fruit and vegetables	1.41	1.32	1.58	1.74	1.49	1.70	1.62	1.59	1.30	1.19	1.31	1.31
Manufacture of vegetable and animal oils and fats	0.32	0.30	0.27	0.35	0.31	0.39	0.28	0.45	0.30	0.47	0.44	0.82
Manufacture of dairy products	1.69	1.66	1.23	1.08	1.53	1.82	1.29	1.04	1.01	1.05	0.76	0.68
Manufacture of grain mill products, starches and starch products	0.15	0.13	0.17	0.30	0.17	0.28	0.16	0.22	0.14	0.23	0.12	0.17
Manufacture of bakery and farinaceous products	0.88	0.96	1.09	1.01	0.81	0.92	1.21	1.10	0.82	0.89	0.60	0.59
Manufacture of other food products	2.65	2.80	2.84	2.85	2.80	2.99	2.77	2.90	1.99	2.09	2.26	2.38
Manufacture of prepared animal feeds	1.04	0.93	1.09	1.00	1.12	1.45	1.06	1.16	0.90	0.94	1.08	1.10
Manufacture of beverages	2.79	3.01	2.77	2.22	3.34	2.60	2.65	2.03	2.28	2.68	2.71	1.86
Manufacture of tobacco products	0.88	1.11	1.32	1.30	1.22	1.64	1.07	1.54	2.40	2.20	2.30	2.29

	2019				2020				2021			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Preparation and spinning of textile fibres	0.24	0.25	0.18	0.22	0.21	0.22	0.17	0.20	0.14	0.14	0.12	0.13
Weaving of textiles	0.32	0.31	0.36	0.37	0.43	0.31	0.20	0.38	0.21	0.34	0.20	0.21
Finishing of textiles	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00
Manufacture of other textiles	2.31	2.61	2.40	2.40	2.27	1.54	2.08	2.47	2.30	1.93	1.51	1.32
Manufacture of wearing apparel, except fur apparel	1.82	1.84	1.76	1.87	1.70	1.49	1.41	1.72	1.78	1.93	1.62	1.79
Manufacture of articles of fur	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manufacture of knitted and crocheted apparel	0.83	0.77	0.90	0.98	1.04	0.79	0.80	0.75	0.69	0.78	1.11	0.63
Tanning and dressing of leather; manufacture of luggage, handbags, saddlery and harness; dressing and dyeing of fur	0.80	0.76	0.75	0.72	0.81	0.40	0.58	0.62	0.64	0.61	0.58	0.60
Manufacture of footwear	0.96	0.82	0.84	0.88	0.85	0.55	0.60	0.72	1.30	1.33	1.06	1.16
Sawmilling and planing of wood	0.18	0.23	0.28	0.24	0.20	0.28	0.28	0.26	0.18	0.24	0.19	0.20
Manufacture of products of wood, cork, straw and plaiting materials	0.75	0.75	0.81	0.77	0.66	0.71	0.85	0.72	0.63	0.71	0.81	0.80
Manufacture of pulp, paper and paperboard	0.85	0.99	1.11	0.82	1.00	1.45	0.77	0.81	0.74	1.09	0.48	0.79

	2019				2020				2021			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Manufacture of articles of paper and paperboard	4.62	4.45	4.50	4.57	3.95	5.77	4.19	3.59	3.51	3.89	3.38	3.47
Printing and service activities related to printing	0.94	1.07	0.98	1.30	0.97	1.55	0.96	0.90	0.70	0.76	0.68	0.76
Reproduction of recorded media	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Manufacture of refined petroleum products	0.35	0.45	0.48	0.42	0.36	0.51	0.55	0.60	0.75	0.77	1.01	0.91
Manufacture of basic chemicals, fertilisers and nitrogen compounds, plastics and synthetic rubber in primary forms	2.50	1.95	2.20	2.26	2.70	2.60	2.13	2.42	2.21	1.98	1.84	2.36
Manufacture of pesticides and other agrochemical products	0.98	0.45	0.33	0.78	0.84	0.34	0.42	0.79	0.77	0.27	0.27	0.51
Manufacture of paints, varnishes and similar coatings, printing ink and mastics	0.66	0.77	0.80	0.55	0.68	0.86	0.79	0.60	0.53	0.70	0.67	0.50
Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations	2.30	2.35	2.38	2.22	2.67	3.32	4.19	3.86	2.90	2.93	2.63	2.54
Manufacture of other chemical products	0.81	0.72	0.69	0.74	0.63	0.74	0.53	0.68	0.66	0.54	0.57	0.55

	2019				2020				2021			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Manufacture of man-made fibres	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01
Manufacture of basic pharmaceutical products	0.02	0.01	0.02	0.02	0.01	0.02	0.02	0.02	0.01	0.02	0.02	0.01
Manufacture of pharmaceutical preparations	2.45	1.94	2.42	2.30	2.47	2.81	2.16	1.92	1.81	1.40	1.59	1.24
Manufacture of rubber products	2.72	2.83	2.97	3.41	3.13	2.37	2.86	3.07	3.76	4.25	7.56	5.36
Manufacture of plastic products	6.02	5.45	5.04	4.56	5.45	5.60	5.18	4.30	4.78	5.06	5.19	4.86
Manufacture of glass and glass products	0.24	0.26	0.28	0.32	0.28	0.29	0.30	0.33	0.31	0.22	0.25	0.25
Manufacture of refractory products	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00
Manufacture of clay building materials	0.23	0.36	0.32	0.26	0.39	0.32	0.32	0.57	0.37	0.33	0.33	0.32
Manufacture of other porcelain and ceramic products	0.02	0.01	0.01	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.01	0.02
Manufacture of cement, lime and plaster	0.45	0.50	0.27	0.24	0.22	0.15	0.27	0.20	0.30	0.24	0.32	0.33
Manufacture of articles of concrete, cement and plaster	0.69	0.86	0.93	0.81	0.90	0.94	0.97	0.93	0.68	0.80	0.71	0.67
Cutting, shaping and finishing of stone	0.24	0.35	0.37	0.37	0.25	0.39	0.43	0.34	0.27	0.33	0.32	0.32

	2019				2020				2021			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Manufacture of abrasive products and non-metallic mineral products n.e.c.	0.48	0.49	0.57	0.48	0.48	0.53	0.52	0.41	0.46	0.52	0.59	0.62
Manufacture of basic iron and steel and of ferro-alloys	10.44	10.30	8.13	7.14	6.49	4.53	5.18	3.86	4.17	4.90	7.10	6.39
Manufacture of tubes, pipes, hollow profiles and related fittings, of steel	0.04	0.05	0.07	0.04	0.06	0.09	0.05	0.06	0.15	0.21	0.11	0.14
Manufacture of other products of first processing of steel	0.27	0.38	0.49	0.41	0.48	0.58	0.54	0.48	0.31	0.51	0.60	0.51
Manufacture of basic precious and other non-ferrous metals	0.42	0.38	0.40	0.48	0.46	0.40	0.32	0.27	0.36	0.40	0.35	0.50
Casting of metals	1.99	1.49	1.21	2.10	1.05	2.57	1.74	1.16	1.11	1.20	0.68	1.76
Manufacture of structural metal products	1.67	1.83	1.87	1.85	1.76	1.99	2.00	2.15	1.72	2.07	2.19	2.59
Manufacture of tanks, reservoirs and containers of metal	0.09	0.15	0.15	0.14	0.09	0.08	0.11	0.11	0.09	0.08	0.08	0.08
Manufacture of steam generators, except central heating hot water boilers	0.01	0.03	0.05	0.05	0.01	0.04	0.09	0.02	0.05	0.06	0.02	0.01
Manufacture of weapons and ammunition	0.32	0.45	0.29	0.37	0.26	0.22	0.19	0.26	0.19	0.18	0.18	0.16

	2019				2020				2021			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Forging, pressing, stamping and roll-forming of metal; powder metallurgy	0.08	0.12	0.07	0.07	0.06	0.08	0.06	0.07	0.07	0.10	0.10	0.06
Treatment and coating of metals; machining	1.18	1.11	1.21	1.14	1.00	1.28	1.04	1.24	1.78	1.93	1.91	1.38
Manufacture of cutlery, tools and general hardware	0.56	0.51	0.42	0.47	0.42	0.34	0.41	0.39	0.35	0.39	0.32	0.38
Manufacture of other fabricated metal products	2.99	3.20	3.52	3.02	3.35	3.67	3.45	3.10	2.73	3.00	3.00	2.75
Manufacture of electronic components and boards	0.54	0.54	0.69	0.79	0.79	0.89	0.74	0.74	0.65	0.70	0.75	0.74
Manufacture of computers and peripheral equipment	3.54	3.43	3.86	4.19	3.44	4.45	4.31	4.30	3.05	2.88	2.74	2.99
Manufacture of communication equipment	0.09	0.10	0.19	0.14	0.13	0.18	0.16	0.09	0.06	0.09	0.09	0.09
Manufacture of consumer electronics	0.20	0.14	0.25	0.28	0.12	0.22	0.21	0.17	0.20	0.16	0.16	0.06
Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks	0.25	0.33	0.30	0.31	0.27	0.26	0.31	0.36	0.26	0.25	0.30	0.28
Manufacture of irradiation, electromedical and electrotherapeutic equipment	0.01	0.00	0.01	0.01	0.01	0.05	0.05	0.02	0.03	0.05	0.03	0.03

	2019				2020				2021			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Manufacture of optical instruments and photographic equipment	0.19	0.15	0.19	0.17	0.19	0.20	0.22	0.22	0.15	0.17	0.20	0.18
Manufacture of electric motors, generators, transformers and electricity distribution and control apparatus	1.16	1.01	1.18	1.17	1.13	1.16	1.18	1.27	1.37	1.45	1.73	1.44
Manufacture of batteries and accumulators	0.05	0.06	0.06	0.07	0.07	0.09	0.11	0.16	0.11	0.08	0.11	0.10
Manufacture of wiring and wiring devices	3.38	3.35	3.62	3.66	3.61	2.42	3.72	4.02	4.54	4.03	3.39	3.55
Manufacture of electric lighting equipment	0.27	0.47	0.66	0.65	0.43	0.42	0.46	0.39	0.55	0.55	0.60	0.68
Manufacture of domestic appliances	1.72	1.26	1.37	1.36	1.36	1.43	1.67	1.66	2.12	2.17	1.88	1.79
Manufacture of other electrical equipment	0.32	0.55	0.57	0.48	0.61	0.66	0.66	0.67	0.51	0.48	0.51	0.46
Manufacture of general-purpose machinery	3.03	3.00	2.78	3.07	2.87	2.80	2.70	3.07	2.49	2.35	2.04	1.98
Manufacture of other general-purpose machinery	1.22	1.35	1.56	1.86	1.57	1.57	1.32	1.40	1.11	1.21	1.19	1.29
Manufacture of agricultural and forestry machinery	0.40	0.55	0.31	0.36	0.49	0.59	0.34	0.28	0.31	0.36	0.30	0.32
Manufacture of metal forming machinery and machine tools	0.26	0.27	0.27	0.21	0.23	0.26	0.33	0.25	0.19	0.21	0.17	0.21

	2019				2020				2021			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Manufacture of other special-purpose machinery	0.29	0.41	0.35	0.37	0.32	0.37	0.32	0.40	0.37	0.36	0.42	0.33
Manufacture of motor vehicles	0.72	1.38	1.09	0.61	0.69	0.39	0.73	0.66	0.64	0.95	0.49	0.60
Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers	0.37	0.38	0.30	0.29	0.27	0.27	0.23	0.27	0.30	0.34	0.31	0.25
Manufacture of parts and accessories for motor vehicles	6.75	6.80	7.39	7.93	8.99	5.34	9.53	11.72	14.93	12.55	11.92	13.67
Building of ships and boats	0.05	0.05	0.05	0.04	0.03	0.01	0.02	0.02	0.30	0.23	0.16	0.21
Manufacture of railway locomotives and rolling stock	0.04	0.05	0.03	0.08	0.04	0.09	0.05	0.05	0.28	0.25	0.22	0.21
Manufacture of air and spacecraft and related machinery	0.03	0.02	0.01	0.02	0.02	0.01	0.02	0.02	0.03	0.04	0.02	0.02
Manufacture of transport equipment n.e.c.	0.30	0.17	0.15	0.26	0.30	0.25	0.25	0.28	0.33	0.25	0.25	0.31
Manufacture of furniture	1.94	2.05	2.09	2.21	1.99	1.79	2.52	2.33	2.03	1.97	1.86	1.93
Manufacture of jewellery, bijouterie and related articles	0.12	0.13	0.16	0.17	0.20	0.31	0.71	0.46	0.30	0.37	0.23	0.43
Manufacture of musical instruments	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manufacture of sports goods	0.01	0.04	0.04	0.03	0.03	0.03	0.03	0.02	0.01	0.02	0.02	0.02
Manufacture of games and toys	0.03	0.06	0.05	0.03	0.03	0.03	0.06	0.05	0.03	0.04	0.03	0.04

	2019				2020				2021			
	Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Manufacture of medical and dental instruments and supplies	1.06	1.13	1.25	1.21	1.29	3.29	1.33	1.19	0.78	0.90	0.68	0.72
Manufacturing n.e.c.	0.49	0.42	0.38	0.41	0.47	0.54	0.57	0.43	0.38	0.42	0.36	0.35
Repair of fabricated metal products, machinery and equipment	2.33	2.13	2.06	2.04	2.51	1.44	1.93	2.41	3.01	2.31	2.03	2.36
Installation of industrial machinery and equipment	0.11	0.13	0.15	0.13	0.15	0.20	0.18	0.13	0.12	0.10	0.08	0.10

Source: authors' calculation

4. CONCLUSIONS

The COVID-19 pandemic has had an impact on the global business environment and these consequences have been heterogeneous across countries, which means that some nations experienced severe trade losses, whereas others were quite resilient to COVID-19 effects. Nevertheless, the existing literature on the impact of the pandemic on Serbian trade flows indicates that Serbian trade compared to other countries, was not affected so significantly (Kisin et al., 2022; Jovičić & Marjanović, 2021; Lukić, 2021; Ranđelović, 2021). The empirical evidence presented in this paper supports the previous finding that the pandemic has not had a substantial impact on the Serbian international trade flows at the aggregate level, in particular on the structure of the aggregate level of export and import. When manufacturing sector, being the most significant contributor to both import and export, is solely considered, some slight changes in the composition of trade flows are identified. For instance, the export of Processing and preserving of fruit and vegetables and Manufacture of plastic products increased over the observed period, while Manufacture of rubber products dropped. Nevertheless, shares of the majority of the divisions within manufacturing sector remained stable, so it can be concluded that the COVID-19 pandemic did not substantially influence Serbian international trade.

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CIP - Каталогизација у публикацији
Народна библиотека Србије, Београд

616.98:578.834]:338(082)(0.034.2)
339.9(082)(0.034.2)

EUROPEAN economies after COVID-19 [Elektronski izvor] : challenges and implications for the macroeconomic policy / editor Aleksandar Zdravković. - Belgrade : Institute of Economic Sciences, 2023 (Belgrade : Institute of Economic Sciences). - 1 elektronski optički disk (CD-ROM) ; 12 cm

Tiraž 30. - Bibliografija uz svaki rad.

ISBN 978-86-89465-75-4

1. Zdravković, Aleksandar, 1982- [уредник]
а) Међународна економија -- Зборници б) Ковид 19 -- Пандемија -- Економски аспект -- Зборници

COBISS.SR-ID 131440905