INFLUENCE OF LIQUIDITY AND SOLVENCY ON PROFITABILITY OF AGROINDUSTRIAL COMPANIES IN THE CONDITIONS OF COVID-19

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ABSTRACT

Agroindustry is traditionally an unavoidable category in the analysis of any economy. The objectives of the research are to present a summary of the profit and financial positions of agro industrial companies in the period of COVID-19, and to analyze financial vitality in the context of liquidity of manufacture of food products and beverages, in the year 2020 and 2019, as well as its' average five-year parameters. The findings show that the liquidity indicators are below the desirable norms and overall liquidity assessment is unfavorable. Further analysis by subsectors has revealed differences in profit positions by subsectors, due to different effects of the crisis, so the findings can serve as an incentive to review decisions of all stakeholders, including economic creators' policy.

Introduction

The current COVID-19 pandemic has transcended the borders of nation states and regions. Numerous global and national regulators have adopted a series of measures aimed at preserving human health, but also the financial health of the economy. Preserving the vital financial health of the company denotes the strengthening the ability to maintain a dynamic balance in relation to changing external business factors, and at the same time in relation to internal business factors, which traditionally starts from liquidity as the primary measure of survival - financial position and profit as the primary measure of company growth.

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As agroindustry is an unavoidable activity in the development of the economy, the subject of the paper analyzes the short-term impact of the COVID-19 pandemic on the liquidity and solvency of agro-industrial enterprises in the Republic of Serbia. The global agro-industry has a share of 10% in the total world GDP, and more specifically, about six billion dollars is the value of sales in the food industry in the world. It is normal that there are regional differences in the average structural positioning of agro-industry, which are conditioned by the overall level of economic development of individual regions and, naturally, given resources in certain territories. In the developed regions, the share of agro-industry does not exceed 10%, and is lower than the percentage in developing countries (13%). This relationship should not be viewed only from the side of the development of agro-industry in individual countries, but also as an actual development of other industries in those countries. Agribusiness companies from developed countries generate over 60% of total operating revenues and 60% of value added, and employ almost 50% of the total employees in the EU food industry (Eurostat, https://ec.europa.eu/eurostat) Agriculture is an economic branch with a long tradition and great importance for the whole economy, and in GDP of Serbia its share ranges 3.7% to 4.3%, and together with agricultural production this sector participates in the formation of GDP from 10% to 13% in depending on the observed year. In the structure of GDP, the share of food production varies from 3.0% to 3.5%. The share of beverage production ranges between 0.7% and 0.9%. The agro-industry is labor-intensive and employs over 70,000 employees and exports from over EUR 1.5 billion, which represents about 12% of the total exports of the Republic of Serbia. It should be noted that in the group of 100 largest companies in Serbia in terms of operating income and net profit in recent years at least 10% of companies are from the agro-industry (Chamber of Commerce of Serbia, https://pks.rs/).

Therefore objectives of the paper are to provide a summary of the profit and financial position of agro-industrial companies in the period prior to COVID-19 and in times of COVID-19, to clarify the importance of liquidity within the financial position of the companies, by subsectors of food and beverage manufacture, through selected indicators for 2020 compared to the previous year, and a five-year average in the period of 2015-2019. In the next section an overview of the literature is presented. The research method, results and discussion follows the overview of the literature and the last section contains concluding remarks.

Literature review

Strong public support and macro prudential policies have helped maintain stability in Covid 19 pandemic (Echarte Fernández, Náñez Alonso, Jorge-Vázquez, Reier Forradellas, 2021; Vapa Tankosić, Čavlin, Budjevac, 2020; Čavlin, Vapa Tankosić, Egić, 2021; Cipek & Ljutić, 2021). In the Eurozone there is a risk of increased commercial defence , and the risk of permanent adverse results on worlwide supply chains (Welfens, 2020). The countries most affected by the crisis are those that largely depend on tourism, traffic and other economic activities (Marjanović, Đukić, 2020).

The current financial situation and volatility requires the preservation of the role of "last resort" that support transactions that commercial banks cannot support on their own (Kiss, Tanács, Lippai-Makra, Rácz, 2020; Vapa Tankosić, Vukosavljević, 2021). The IMF analysis of central bank measures and instruments for the effects of Covid 19 pandemic stresses monetary, external, and financial policies for banks and borrowers (IMF, 2020). Monetary policy measures of central banks have been specifically designed to control the quantity of money. Central banks have reduced interest rates (by 50-150 basis points) to stimulate economic activity and reduce the cost of borrowing funds and have supported the liquidity by lowering the mandatory's reserves for banks, softening the terms for collateral, increasing the repo operations to obtain liquidity, and extending the period of such operations, or through a program to provide additional financial support to banks (European Central Bank). Some of the above measures of monetary policy are also adopted by the National Bank of Serbia (NBS). The National Bank of Serbia provided banks with additional 41.1 billion dinars of dinar liquidity and 96.0 million euros of foreign currency liquidity through monetary policy instruments (National Bank of Serbia, www.nbs.co.rs). The ECB and the NBS have reached an agreement to establish a repo line to provide liquidity in euros to Serbian financial institutions should such a need arise in the face of market disruptions caused by the Covid-19 pandemic. Through this repo line, the ECB has provided liquidity in euros to the non-euro central banks in exchange for appropriate collateral in euros. Swap arrangements by central banks, such as arrangements between the American FED and foreign central banks have improved the visibility of the dollar (Aizenman. Ito, Pasricha, 2020; Đorđević et al., 2021). Quantitative easing has increased the money supply and help reduced long-term interest rates as well as the purchase of large amounts of securities, such as government bonds (Central Bank of Japan, European Central Bank).

Several countries have lowered their mandatory foreign exchange reserves (Central bank Indonesia and Turkey) or in-creased the availability of foreign exchange swaps and repo transactions (Central banks of Brazil, Indonesia, Mexico and Russia). Recommendation to use capital and liquidity-absorbing Basel III liquidity, easing specific regulatory requirements, postponing stress tests, limiting the payment of bank dividends, monitoring credit risk status (Yusdika, Purwanti, 2021; Alao, Gbolagade, 2020) have been adopted. Financial policies for borrowers have provided the companies with access to additional capital in the form of state-supported loans or credit guarantees encompassing lower interest rates, moratoriums on principal or interest for up to one year, loans to support the financing of companies with a grace period of two years, coverage of loans with government guarantees (Anderson, Drabancz, Grosz, 2021; Martin, 2020).

The understanding and conceptual definition of a company's liquidity is expressed by a general realtion: short-term assets/short-term liabilities. In the economic literature, there is a plethora of research on the liquidity, Rodić (2003), Malešević (2014), Stevanović et al. (2011) Mikerević et al. (2015) Tintor (2009), Belak (2014) and Žager et al. (2017). The essence is that the starting point for the liquidity analysis is the ratio

of short-term assets/short-term liabilities, which is understood as a general indicator of liquidity. Liquidity analysis is based on the following assumptions (Malešević, Čavlin, 2020) presented in Table 1.

Table 1. Overview of static and dynamic liquidity ratios

Static liquidity indicators	
Effective liquidity ratio	cash + cash short-term equivalents + short-term receivables/short-term liabilities
Current liquidity ratio	(cash + short-term securities)/short-term liabilities
Perspective liquidity ratio	Total current assets/current liabilities
Dynamic liquidity indicators - "cash flow"	
Ratio of coverage of short-term liabilities by cash flow from operations	cash flow from operating activities/average short-term liabilities
Ratio of defensive interval of liquid assets	(current assets - inventories)/average daily cash from operating activities
Cash in hand ratio	Cash and current liquid securities/average daily cash outflows for operating expenses
Ratio of average cash cycle duration	average period of inventory duration + average period of trade receivables - average payment period of suppliers
Ratio of average payout time of suppliers	suppliers x 365/annual procurement
Ratio of average inventory life	inventory x 365/sale
Ratio of average duration of receivables	receivables x 365/sales
Static and dynamic solvency	
Ratio of dynamic solvency-interest coverage	Operating profit/Interest expenses (by third parties)
Indebtedness ratio	(Total liabilities-Capital)/Total assets

Source: Authors' elaboration

Materials and methods

Since different approaches in the classification and definition of agro-industrial activities are present the authors have decided on the most typical classification which includes two areas of sector C – Manufacturing, namely: 10 - Manufacture of food products and 11 - Manufacture of beverages, defined in the national system of classification of activities stipulated by the Decree on Classification of Activities, which taken from the European standard classification of activities in the Regulation (EC) No 1893/2006. The research includes the analysis of key parameters of company liquidity in the Republic of Serbia for the period from 2019 to 2020 and the period of 2015-2019 for Sector C Manufacturing and its subsectors. For the needs of the research, a representative of companies was formed, according to the statistics of the Republic Statistical Office of Serbia and from publicly available information, i.e. official financial reports, which the companies have submitted to the Business Registers Agency of the Republic of Serbia, and from direct insight into the company's reports. The sample has included the data for 47000 companies from the sector with the majority of micro companies prevailing in the sample (84,38%). The sample size has proven to be satisfactory. The paper has the following research objectives:

1. a descriptive analysis of the profit and liquidity position based on the ratio analysis of liquidity, solvency and profitability of the sector C Manufacturing and its subsectors 10 - Manufacture of food products; 11 -Manufacture of beverages;

2. an empirical analysis of the impact of liquidity and solvency on Return on Assets (ROA) before and after COVID-19, based on traditional ratios, of the sector C Manufacturing and all its subsectors. The second research objective has been analyzed by a regression analysis of the profit and financial position of manufacturing activity (Sector C) in the period prior to COVID-19 and in times of COVID-19. The regression analysis has been using variables of current profit positions and liquidity indicators of the sector C - Manufacturing and subsectors: 10 - Manufacture of food products; 11 -Manufacture of beverages; 12 - Manufacture of tobacco products; 13 - Manufacture of textiles; 14 - Manufacture of wearing apparel; 15 - Manufacture of leather and leather products; 16 -Processing of wood and articles of wood, cork, straw and plaiting materials, except furniture; 17 - Manufacture of paper and paper products; 18 - Printing and reproduction of audio and video recordings; 19 - Manufacture of coke and refined petroleum products; 20 - Manufacture of chemicals and chemical products; 21-Manufacture of basic pharmaceutical products and preparations; 22 - Manufacture of rubber and plastic products; 23 - Manufacture of other non-metallic mineral products; 24 - Manufacture of basic metals; 25 - Manufacture of fabricated metal products, except machinery and equipment; 26 - Manufacture of computers, electronic and optical products; 27 -Manufacture of electrical equipment; 28 - Manufacture of other machinery and equipment nec; 29- Manufacture of motor vehicles, trailers and semi-trailers; 30-Manufacture of other transport equipment; 31 - Manufacture of furniture; 32 - Other manufacturing and 33 - Repair and installation of machinery and equipment.

Results and discussion

By analyzing the results obtained from Table 2 of the profit and liquidity position based on the ratio analysis of liquidity, solvency and profitability of the sector C Manufacturing and its subsectors 10 - Manufacture of food products and 11 -Manufacture of beverages, it is possible to highlight the following:

- that at the sector level, the trend of declining revenues in 2020-2019 by 15% has been accompanied by a marked increase in operating and net profit, but also a marked increase in operating and net losses, and especially unfavorable profit position when comparing the trends with the average growth rate of operating and net profit or loss for 2015- 2019.

- that the sector has a tendency to decrease revenues which has been accompanied by a lower decrease in operating and net profits compared to the decrease in operating and net losses, which implies a decrease in profitability indicators.

- that the sub-sectors have also registered a decline in operating revenues in 2020 compared to 2019, with sub-sector “10” declining at the sector level and sub-sector “11” declining by ¼;

- that in the subsector "10" the income decline trend has been accompanied by an increase in operating profit and a decrease in operating losses, while there was a decrease in net profit and an increase in net losses, which resulted in no decrease in profitability of assets but capital;

- that in subsector "11" the income decline trend has been accompanied by a smaller decrease in operating profit compared to operating loss, while there was an increase in net profit and a decrease in net losses, which resulted in no increase in asset profitability, and a slight decrease in profitability capital.

We can summarize that the profit position in the subsector as well as at the level of Sector C is unfavorable, especially when considering the trends in relation to the analyzed five-year period.

Table 2. Dynamics of operating income, operating and net profit/loss for the Sector C and subsectors 10 and 11 in the Republic of Serbia for 2019-2020 and 2015-2019

Categories	Operating income	Operating profit	Operating loss	Net income	Net loss	ROA	ROE
Sector C - 2019	3.176.463.973,00	222.013.336,00	46.182.018,00	189.749.010,00	65.599.443,00	0.06	0.12
Sector C - 2020	2.712.613.597,00	216.312.527,00	38.188.165,00	176.604.989,00	54.120.227,00	0.05	0.11
Rate +/- 2019/2020	-0.15	-0.03	-0.17	-0.07	-0.17	-0.04	-0.07
Average rate 2015 /2019	0.07	0.06	-0.03	0.09	-0.18	0.07	0.23
Subsector 10 - 2019	753.876.674,00	45.651.748,00	8.770.284,00	37.331.631,00	12.761.155,00	0.05	0.12
Subsector 10 -2020	643.194.870,00	47.785.645,00	5.509.040,00	35.957.215,00	14.320.017,00	0.05	0.11
Rate +/- 2019/2020	-0.15	0.05	-0.37	-0.04	0.12	0.01	-0.06
Average rate 2015 /2019	0.04	0.03	0.07	0.07	-0.19	0.05	0.11
Subsector 11 - 2019	115.765.340,00	11.731.406,00	1.770.091,00	10.191.143,00	3.552.960,00	0.05	0.09
Subsector 11 - 2020	86.798.058,00	9.716.870,00	984.901,00	11.009.626,00	1.593.751,00	0.06	0.08
Rate +/- 2019/2020	-0.25	-0.17	-0.44	0.08	-0.55	0.04	-0.03
Average rate 2015 /2019	0.02	0.07	0.09	0.13	-0.04	0.05	0.09

Source: Authors' calculations

By analyzing the results obtained from Table 3, of the liquidity and solvency indicators of the sector C Manufacturing and its subsectors 10 - Manufacture of food products and 11 -Manufacture of beverages it is possible to highlight the following:

- the average values of the company's liquidity ratio at the level of Sector C are far from desirable theoretical norms, which implies a threat to liquidity conditions.

- average values of the general liquidity ratio of companies in the analyzed subsectors show that they are below the preferred analytical standard (≥2).

- average values of the quick liquidity ratio of companies in the subsector "10" and "11", show that they are lower than the desired theoretical norm (≥1).

- average values of the current liquidity ratio of companies in the context of the given values of general and accelerated liquidity ratios imply that companies do not have sufficiently liquid assets to settle short-term liabilities.

- further development of the analysis, we supplement the findings on the dynamic liquidity indicators for more complete conclusions on the liquidity of the analyzed subsectors, and it is possible to note that there was a shortening of the cash cycle in the subsector "10". The shortening of the cash cycle period was mainly influenced by the extension of the payout period of suppliers;

- the extension of the cash cycle period in the subsectors in subsector "11" was mostly influenced by the extension of the period of inventories;

- the value of indebtedness indicators tends to decrease in 2020 compared to 2019, while the subsector "10" has a value higher than the desired norm, which indicates the predominance of own financing in relation to foreign sources and acquiring conditions for a favorable assessment of the debt position.

Table 3. Overview of liquidity and solvency indicators for the sector C and subsectors 10 and 11 in the Republic of Serbia for 2019-2020 and 2015-2019

Categories	Sector C - 2019	Sector C-2020	Rate +/- 2019/2020	Average rate 2015/2019	Subsector 10 –2019	Subsector 10 –2020	Rate +/- 2019/2020	Average rate 2015/2019	Subsector 11-2019	Subsector 11-2020	Rate +/- 2019/2020	Average rate 2015/2019
Current liquidity ratio	1.05	1.1	0.05	0.93	1.14	1.16	0.02	1.05	0.91	0.85	-0.06	0.76
Cash liquidity ratio	0.12	0.15	0.24	0.10	0.12	0.15	0.24	0.09	0.16	0.17	0.09	0.09
Quick liquidity ratio	0.64	0.67	0.05	0.57	0.68	0.69	0.01	0.64	0.61	0.55	-0.10	0.51

Categories	Sector C - 2019	Sector C-2020	Rate +/- 2019/2020	Average rate 2015/2019	Subsector 10 –2019	Subsector 10 –2020	Rate +/- 2019/2020	Average rate 2015/2019	Subsector 11-2019	Subsector 11-2020	Rate +/- 2019/2020	Average rate 2015/2019
Average "cash cycle" period (in days)	67.98	75.61	0.11	70.35	88.13	86.00	-0.02	87.62	43.89	54.08	0.23	21.37
Average time of collection of receivables (in days)	67.98	75.61	0.11	70.35	65.14	69.72	0.07	71.08	67.70	77.99	0.15	70.95
Average payment time to suppliers (in days)	111.56	123.40	0.11	117.47	84.99	92.35	0.09	90.85	163.39	196.01	0.20	164.22
Stock turnover time (in days)	122.10	131.16	0.07	118.83	107.98	108.63	0.01	107.40	139.58	172.10	0.23	114.64
Solvency (dynamic indicator)	12.62	17.55	0.39	8.36	7.16	12.57	0.76	6.48	13.48	13.82	0.03	12.27
Indebtedness	0.53	0.51	-0.03	0.57	0.58	0.55	-0.05	0.59	0.32	0.31	-0.05	0.42

Source: Authors' calculations

The analysis by sub-sectors of the agro-industry highlights noticeable differences in the analysis of the profit and financial position, which indicates the need to develop a deeper analysis in terms of the impact of liquidity on profitability done by linear regression (Rosner, 2011; Radović Marković, Hanić, 2018).

a) Linear regression- Impact on ROA before Covid-19

Independent variables in the regression are: Current liquidity ratio, Cash liquidity ratio, Quick liquidity ratio, Solvency (dynamic ratio) and Debt ratio. The dependent variable is Return on Assets (ROA).

Table 4. Model evaluation

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,626[a]	,392	,366	,02433

Source: Authors' calculations

In the Table 4, a value of 0.62 represents a good level of prediction and 39.2% of the variability of the dependent variable can be explained by the independent variables.

Table 5. Regression model test

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,045	5	,009	15,333	,000
	Residual	,070	119	,001		
	Total	,116	124			

Source: Authors' calculations

F-value in the Table 5, shows that our regression model is good F = 15.333, p <0.05. From the Table 6 for the period 2016-2019 quick liquidity ratio (β= ,048, p= ,044), dynamic solvency (β= ,000, Sig.= ,003) and debt ratio (β= -,109, Sig.= ,001) have provided statistically significant predictions of the variable „Return on assets before Covid-19".

Table 6. Estimates of model coefficients

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,089	,026		3,463	,001
	Current liquidity ratio	,008	,018	,070	,433	,666
	Cash liquidity ratio	-,084	,058	-,147	-1,452	,149
	Quick liquidity ratio	,048	,024	,308	2,034	,044
	Solvency (dynamic ratio)	,000	,000	,241	3,002	,003
	Debt ratio	-,109	,032	-,315	-3,359	,001

Source: Authors' calculations

a) Linear regression- Impact on ROA in times of Covid-19

In the Table 7, "R" a value of 0.83 represents a good level of prediction and 69.9% of the variability of the dependent variable can be explained by the independent variables.

Table 7. Model evaluation

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,836[a]	,699	,616	,01888

Source: Authors' calculations

F-value, in the Table 8, shows that the independent variables statistically predict the dependent variable well (Sig. = .000) and our regression model is good F =8.369, p <0.05.

Table 8. Regression model test

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,015	5	,003	8,369	,000
	Residual	,006	18	,000		
	Total	,021	23			

Source: Authors' calculations

From the Table 9 in times of Covid-19 the variable solvency (β= ,001, Sig.= ,020) and debt ratio (β= -,131, Sig.= ,010) are statistically significant predictions of the variable "Return on assets in times Covid-19".

Table 9. Estimates of model coefficients

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,098	,036		2,769	,013
	Current liquidity ratio	-,034	,026	-,444	-1,276	,218
	Cash liquidity ratio	,011	,088	,024	,130	,898
	Quick liquidity ratio	,060	,040	,505	1,500	,151
	Solvency (dynamic ratio)	,001	,000	,472	2,541	,020
	Debt ratio	-,131	,046	-,469	-2,857	,010

Source: Authors' calculations

Conclusions

Financial vitality in the context of liquidity is the ability to provide sustainable liquidity in crisis business conditions that will not endanger the survival of the company. This research has analyzed the financial vitality in the context of the liquidity of agro industrial companies in the Republic of Serbia on the basis of balance sheet data, and in the period and business conditions affected by the COVID-19 pandemic. The findings summarize that in the short run, the otherwise fragile financial vitality in the context of liquidity has deteriorated to a in the manufacture of food products and beverages. Further analysis revealed differences in the profit and financial position of the sub-

sectors, which show that the impact of the pandemic did not affect all sub-sectors equally. The recent analysis of the meat processing activity in the Republic of Serbia shows a positive impact of the solvency ratio on the ROA which is in line with the findings of this paper (Čavlin, Vapa Tankosić, Miletić, Ivaniš, 2021). The COVID-19 pandemic is a completely new type of crisis, and it is not possible to expect that the problems that have affected the economy and society as a whole will be known and solved in a short period of time. In that sense, it is necessary to continue the research by analyzing the impact on subsectors, branches and groups of activities, and the interdependence of profit and financial position categories, taking into account a number of other economic determinants, primarily the character and typology of companies. It is certain that the analysis of the impact of the COVID-19 pandemic will be the subject of research attention and that the research in question represents the beginning, and in that sense, the limitation of the research can be pointed out.

Conflict of interests

The authors declare no conflict of interest.

References

1. Agencija za privredne registre (APR). Retrieved from http://www.apr.gov.rs (03.08.2021.).[in English: Business Registers Agency (BRA)]
2. Aizenman, J., Ito, H., & Pasricha, G.K. (2021). *Central Bank Swap Arrangements in the COVID-19 Crisis*. National Bureau of Economic Research, Cambridge, MA.
3. Alao, B.B., & Gbolagade, O.L. (2020). *Coronavirus Pandemic and Business Disruption: The Consideration of Accounting Roles in Business Revival*. Social Science Research Network, Rochester, NY.
4. Anderson, J., Papadia, F., & Veron, N. (2021). *COVID-19 Credit Support Programs in Europe's Five Largest Economies*. Social Science Research Network, Rochester, NY.
5. Belak, V. (2014). Analiza poslovne uspješnosti – 130 ključnih pokazatelja performanse i mjerila za kontroling. RRIF Plus, Zagreb.
6. Cipek, K., & Ljutić, I. B. (2021). The influence of digitalization on tax audit. *Oditor*, *7*(1), 37-69. https://doi.org/10.5937/Oditor2101037C
7. Čavlin, M., Vapa-Tankosić, J., & Egić, S. (2021). *Perspectives of the financial stability protection and banking risk prevention*. Economics - Theory and Practice, XIV (3), 109-126.
8. Čavlin, M., Vapa Tankosić, J., Miletić, V., & Ivaniš, M. (2021). Analysis of the impact of liquidity on the profitability of assets of medium and large enterprises in the meat production activity of the Republic of Serbia, *Economics of Agriculture* , 68, (3), 789-803

9. Chamber of Commerce of Serbia, Retrieved from https://pks.rs/, (26.12.2021.).
10. Decree on Classification of Activities (Official Gazette of RS, no. 54/10)
11. Drabancz, Á., Grosz, G, Palicz, A., & Varga, B. (2021). Experiences with the Introduction of a Payment Moratorium in Hungary. *Financial and Economic Review*, 20, 5–42, doi:10.33893/FER.20.1.542.
12. Đorđević, N., Podovac, M., & Milićević, S. (2021). Researching the local community's satisfaction with the manifestation, International Carnival of Vrnjci. *Oditor*, *7*(1), 101-130. https://doi.org/10.5937/Oditor2101101D
13. Echarte Fernández, M.Á., Náñez Alonso, S.L., Jorge-Vázquez, J., & Reier Forradellas, R.F.(2021). Central Banks' Monetary Policy in the Face of the COVID-19 Economic Crisis: Monetary Stimulus and the Emergence of CBDCs. *Sustainability,* 13, 4242, doi:10.3390/su13084242.
14. Eurostat, Retrieved from https://ec.europa.eu/eurostat, (18.01.2022.).
15. International Monetary Fund (2020). Global Financial Stability Report. Intl. Monetary Fund, Washington, ISBN 978-1-5135-2919-6.
16. Kiss, G.D., Tanács, G.Z, Lippai-Makra, E., & Rácz, T (2020). Last Resort: European Central Bank's Permanent Engagement in Tackling Foreign Exchange Liquidity Disruptions in the Euro Area Banking System. *Financial and Economic Review*, 19(4), 83–106, doi:10.33893/FER.19.4.83106.
17. Malešević, Đ. (2014). *Konkurentnost, kapital i profit – ključni faktori poslovno-ekonomskog preduzetništva*. Tematski zbornik SRRRS, 73-89. Banja Luka.[in English: Malesevic, D. (2014). Competitiveness, capital and profit - key factors of business and economic entrepreneurship. Thematic proceedings FAARS, 73-89, Banja Luka]
18. Malešević, Čavlin, (2020). *Poslovna analiza*, 2 izdanje. FIMEK, Novi Sad.
19. Marjanović, D., & Đukić, M. (2020). Ekonomske mere za ublažavanje posledica COVID-19 (str. 91-105). In: Mitić P.; Marjanović D. [ur.] *Black swan in the world economy 2020*, Beograd: Institut ekonomskih nauka, ISBN 978-86-89465-54-9
20. Martin, V. (2020). The Response of the Monetary and Fiscal Policies on COVID 19 in Serbia. *Bankarstvo* 49, 70–114, doi:10.5937/bankarstvo2002070M.
21. Mikerević, Dr., & Mikerević, Dr. (2015). Likvidnost kao poluga ostvarivanja vrhunskog cilja preduzeća. *Acta Economica*, 13 (23), 87-119. .[in English: Mikerević, Dr., & Mikerević, De. (2015). Liquidity as a lever to achieve the ultimate goal of the company. *Acta Economica*, 13 (23), 87-119.]
22. Narodna banka Srbije, Retrieved from https://nbs.co.rs/, (12.01.2022.).
23. Regulation (EC) No 1893/2006 of the European Parliament and of the Council of 20 December 2006 establishing the statistical classification of economic activities NACE Revision 2 and amending Council Regulation (EEC) No 3037/90 as well as certain EC Regulations on specific statistical domains Text with EEA relevance, OJ L 393, 30.12.2006, p. 1–39

24. Rodić, J. & Vukelić, G., (2003). *Teorija i analiza bilansa*. Poljoprivredni fakultet, Zemun. .[in English: Rodić, J. & Vukelić, G., (2003). Balance sheet theory and analysis. Faculty of Agriculture, Zemun]
25. Rosner, B. (2011). *Fundamentals of Biostatistics*, 7th Edition. Brooks/Cole, Boston.
26. Stevanović, N., Malinić D., & Milićević, V. (2011). *Upravljačko računovodstvo*. Ekonomski fakultet, Beograd. .[in English: Stevanović, N., Malinić D., & Milićević, V. (2011). Managerial accounting, Faculty of Economics, Beograd]
27. Tintor, J. (2009). *Poslovna analiza*. Masmedia, Zagreb. .[in English: Tintor, J. (2009). Business analysis, Masmedia, Zagreb]
28. Vapa Tankosić, J., Čavlin, M., & Buđevac, Đ. (2020). *Analysis of central bank measures for mitigation of monetary and financial risks caused by Covid-19*. Transition in the 21st century (134-146). Kragujevac: Institut primenjenih nauka Beograd, Centar za održivi razvoj Beograd, Visoka škola za menadžment i ekonomiju Kragujevac, Univerzitet za Poslovne Studije Banja Luka.
29. Vapa-Tankosić, J., & Vukosavljević, D. (2021). Analysis of structured financial transactions as alternative sources of financing. *Pravo teorija i praksa*, 38(1), 13-24. UDK: 336.717
30. Welfens, P.J.J. (2020). Trump's Trade Policy, BREXIT, Corona Dynamics, EU Crisis and Declining Multilateralism. *Int Econ Econ Policy*, 17, 563–634, doi:10.1007/s10368-020-00479-x.
31. Yusdika, A.I., & Purwanti, D.(2021). Implementation Of PSAK 71 Financial Instruments In The Banking Sector During The Covid-19 Pandemic. *Riset*, 3, 402–416, doi:10.35212/riset.v3i1.72.
32. Žager, K.,Mamić Sačer, I., Sever Mališ, S., Ježovita, A., & Žager, L. (2017). *Analiza financijskih izvještaja: načela, postupci, slučajevi;* treće izmijenjeno i dopunjeno izdanje. Hrvatska zajednica računovođa i financijskih djelatnika. Zagreb. .[in English: Žager, K.,Mamić Sačer, I., Sever Mališ, S., Ježovita, A., & Žager, L. (2017). *Analysis of financial statements: principles, procedures, cases*; third amended edition. Croatian Association of Accountants and Financial Professionals. Zagreb]