

ECONOMIC IMPACT OF COVID-19 ON THE EUROPEAN AIRLINE INDUSTRY

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Abstract

Business entities from various industries are facing significant challenges since the COVID-19 pandemic outbreak. The airline industry, along with travel, tourism and hospitality, have been the worst affected economic sectors during the coronavirus health crisis. The paper analyzes the economic impact of COVID-19 on the European airline industry. The research is made by measuring the liquidity and profitability of five leading European airline companies before and after the pandemic outbreak (in the period from 2015 to 2020). The aim is to determine the extent of the health crisis consequences on the financial results of the five European companies with the largest number of passengers in 2019. The research is conducted through financial statement analysis and descriptive statistics. The results show that the COVID-19 pandemic had a significantly more detrimental effect on profitability compared to the liquidity of European airlines.

Key words: airline industry, COVID-19, liquidity, profitability, European airline companies.

ЕКОНОМСКИ УТИЦАЈ КОВИД-19 НА ЕВРОПСКУ АВИО-ИНДУСТРИЈУ

Апстракт

Пословни субјекти из различитих индустрија суочавају се са значајним изазовима од избијања пандемије COVID-19. Авио-индустрија, заједно са путовањима, туризмом и угоститељством, били су најтеже погођени економски сектори током здравствене кризе изазване коронавирусом. У раду се анализира економски утицај КОВИД-19 на европску авио-индустрију. Истраживање се врши мерењем ликвидности и профитабилности пет водећих европских авио-компанија пре и након избијања пандемије (у периоду од 2015. до 2020. године). Циљ

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је да се утврде размере последица здравствене кризе на финансијске резултате пет европских компанија са највећим бројем путника у 2019. години. Истраживање је спроведено кроз анализу финансијских извјештаја и дескриптивну статистику. Резултати показују да је пандемија *КОВИД-19* имала знатно штетнији утицај на профитабилност него на ликвидност европских авиопревозника.

Кључне речи: авио-индустрија, *КОВИД-19*, ликвидност, профитабилност, европске авио-компаније.

INTRODUCTION

The COVID-19 pandemic is considered to be the most serious public health crisis in the last hundred years. The first case of pneumonia with an unknown cause was reported by the World Health Organization (WHO) Country Office in China on December 31, 2019 (WHO, 2020). Specifically, a comprehensive analysis found that the cluster of pneumonia patients in the City of Wuhan in the Chinese province of Hubei was connected to the Huanan Seafood Wholesale Market (Alah, Abdeen, & Kehyayan, 2020). The rapid transmission of the novel virus forced the Chinese authorities to lockdown Wuhan on January 23, 2020. However, the coronavirus disease rapidly spread beyond China, causing an unprecedented global health crisis that the WHO characterized as a pandemic on March 11, 2020; while more than 210 countries reported COVID-19 cases in early May 2020.

By mid-August 2021, more than 208 million confirmed cases of COVID-19 infection and more than 4,37 million deaths from the disease have been reported worldwide (WHO, 2021). In addition to human tragedy, the coronavirus outbreak has also produced extensive disruptions to the global economy, trade, and mobility. All social and economic trends have completely shifted from their usual flows, without indication about whether and when they will return to their regular framework. The research of Yeyati and Filippini (2021) proves that the global recession caused by COVID-19 is the deepest since the end of World War II. Specifically, the global economic growth is reduced by 3,2% and world trade volume by 8,1% in 2020, according to the July 2021 World Economic Outlook Report published by The International Monetary Fund (IMF, 2021). Although the IMF's projections for economic growth and world trade in 2021 are more optimistic, the COVID-19 pandemic has left a deep mark in some industries that will have significant difficulties in their recovery.

The airline industry belongs to the economic area which is characterized by particularly harmful consequences of the COVID-19 outbreak. For example, Yimga (2021) points to the effects of the global pandemic on the U.S. airline industry by stating that only about 95,000 passengers were screened across U.S. airports on April 16, 2020, at the start of the pandemic; while that number represents a 96% decline from 2.6 million passengers on the same day the year before. Such statistics on the number

of passengers are similar for other parts of the world. Due to dire economic outcomes of COVID-19, projections indicate that it is unrealistic to expect that the number of passengers in 2019 will return to that level before 2023-2024.

This paper examines the impact of COVID-19 on the European airline industry. The purpose of the research is to measure the liquidity and profitability of the five leading airline companies in Europe before and after the pandemic outbreak. The empirical analysis covers the period from 2015 to 2020, i.e. the five years before the COVID-19 pandemic (2015-2019) and the year in which the health crisis had a full impact on the airline industry (2020). The findings of the paper can be useful to the observed airline companies to maintain their expenses and achieve positive financial results in the future, but also to policy makers as a reliable delivery framework that will ensure that the eventual support reaches the companies that need it most.

The paper contains four separate segments. The first segment deals with the theoretical background and literature review on the economic impact of the COVID-19 on the passenger transportation and the global airline industry. Methodology and research questions are defined in the second segment of the paper. The results of the research are presented and discussed in the third segment. The last segment provides the concluding remarks.

LITERATURE REVIEW

The outbreak of COVID-19 has caused a significant economic vulnerability in the airline industry across the Globe, being one of the most affected with this turmoil (Dube et al., 2021; Suau-Sanchez et al., 2020). Even though, there has been hard times that this industry went through in the past, such as those caused by oil crisis, financial crisis, wars and other diseases like SARS, the negative impact of COVID-19 on economic and financial performance of airline industry worldwide is estimated to notably surpass the precedent collapses effect (IATA, 2020).

Such a downturn in the airline industry was induced with a number of forces being triggered by important events and decisions that took place during the most recent collapse. The limitation or/and absolute prohibition of the air traffic followed with country-wide lockdown being one of the governmental measures aimed at preventing further dissemination of illness had a direct and strong impact on the customer demand and, therefore, on the airline industries' operations and performance (Bielecki et al., 2020). The impact on the supply side measured with 56% drop in a number of passenger seats available has been vast as well. Accordingly, the customer revenue per kilometer has experienced a 48% decline compared to 2019 which has induced an estimated loss of \$314 billion in companies' overall revenues (IATA, 2020).

Despite the fact that the volume of flight operations has plunged, the negative pressure on the industry's performance has occurred from the expenditure side as well. In the pursue of cutting their expenses, most of the companies have decided to operate with minimum staff being on strict rotation. In line with that, the employment in civil aviation industry has recorded a drop of 35% (IATA, 2020). As suggested by Sobieralski (2020), the employees being affected the most are those in charge of customer care. While the fuel and labor costs in this sector went down, there have been aircraft maintenance and other fixed costs such as parking costs that preserved and were needed to be handled (Adrienne et al., 2020).

Given that maintaining the airline companies' operations is characterized with high capital cost, the liquidity and survival of these companies has been particularly challenged with the COVID-19 outbreak (Zhang and Zhang, 2018; IATA, 2020). Under these circumstances, financial sustainability of the civil aviation industry has turned to depend markedly on external financing. In this situation, the stock valuation plays a meaningful role for attracting the outside resources. Accordingly, Maneenop and Kotcharin (2020) have investigated the impact of COVID-19 related press releases on the stock prices in the airline industry, providing the empirical evidence of stock price volatility induced by both, their underreaction and overreaction to these announcements. Similarly, having examined the returns to stocks of the travel and leisure companies listed in US, Chen et al. (2020) identified that the most severe negative impact on stock valuation caused by COVID-19 measures was identified in the civil aviation industry. Since with this turmoil the private sector financial injection was lacking due to evident uncertainty on the economic prospects in this industry, the governmental direct and indirect financial support in the form of loans, wage subsidies, tax reliefs, etc., has become an indispensable remedy and to many players the only possible solution for survival (Truxal, 2020).

The enormous decrease in demand being accompanied with sharp capacity reduction and uncertainty have been some of the challenges for the airline industry striving hard to find a path to recover its revenues (Wasterhof, 2020). As suggested by Lange (2020), while the main focus of the airline companies is on survival, identifying the routes of not only avoiding or minimizing the loss but those which still generate some profit is of equal importance. Resolving this puzzle becomes not an easy task in the situation when most of the airline companies struggle hard to sustain their cash flow coverage due to a faster cash burn compared to the times of their normal operations. For many airline operators, prioritizing the cargo transportation over the passenger transportation, which has been recording a growing trend by February 2020, has turned to be the only option for survival (Bielecki et al., 2020).

The empirical evidence of studies that aimed to assess the impact of COVID-19 on the financial performance, and the response that airline companies had to, it is still frugal. Accordingly, as suggested by Agrawal (2020) who analyzed the financial performance of Indian airline operators in the period between 2010-2019, the suspended operations have remarkably impaired the companies' solvency that employed intensively their cash reserves to cover the emerged losses. According to the author's findings resulting from analysis of profitability and Altman Z scores, this sector profitability has been harmed by a strong negative impact of the COVID-19 and its further prospects will depend on variable costs recuperation and loss diminishing.

According to Budd et al. (2020) who investigated the responses to COVID-19 challenges of the airline companies in the period March-May 2020, most commonly the operators attempt to protect their profitability harmed due to enormous flights detraction through modifying their flight operations, staff rationalization and networks reshaping. Assessing the impact of health related upsets on financial performance of airlines in Asia Pacific region, Peoples et al. (2020) suggest that the examined companies are predicted to face enormous challenges to preserve their profitability throughout COVID-19 crisis period. Namely, an effective usage of local workforce, fares increase and creation of unions with other operators may be a good approach towards cutting costs, boosting productivity and having their before the crisis performance back.

In sum, with an exception of the evidence on the cargo transportation performance which has recorded mostly a positive trend, the economic impact of the COVID-19 is assessed to be negative and very harmful in the domain of passenger transportation. The losses that the airline companies have faced are expected to have a long term impact on their future operations, financial results, ability to meet their financial obligations and growth prospects. The speed and magnitude of their recovery will evidently depend on a range of factors including governmental support, revival of customer confidence and demand, general economic conditions and pandemic persistence, as well as on taken measures by single companies for faster recuperation of their operations.

METHODOLOGY AND RESEARCH QUESTIONS

The aim of the research is to assess the economic and financial impact of the COVID-19 pandemics on one of the most affected industries in Europe – airline industry. To that end, liquidity and profitability of the five airline companies in Europe have been analyzed, covering five years before the pandemics, and 2020 as the year representing the peak of COVID-19. The top five airline companies have been chosen according to the biggest number of passengers in 2019: Ryanair, Lufthansa, Inter-

national Airline Groups – IAG, Air France and easyJET (Centre for Aviation, 2021). The liquidity and profitability analysis provide an insight into the companies' ability to meet their short term obligations, as well as to maintain their expenses and perform positive financial results.

For the purpose of research and financial analysis, the information base is the financial statements (balance sheet and income statement) of the selected airline companies, available on their websites for the analyzed period (2015-2020). Methods used in the analyses are financial statement analysis and comparative analysis.

In order to achieve the research aim, the paper is based on the following research questions:

1. Has COVID-19 threatened the companies' ability to meet their short term obligations?
2. Have the airline companies managed to maintain positive financial results in times of the COVID-19 pandemic?
3. Have the top five airline companies in Europe reacted to the pandemics in the same direction regarding their liquidity and profitability?

RESULTS AND DISCUSSION

Liquidity

Liquidity, as one of the most important segment of financial statement analysis, shows the company's ability to convert current assets into cash, aiming to cover current liabilities without raising external funds (Cornett, Adair, Nofsinger, 2012). The most commonly used liquidity ratios, being applied in this research, are the following:

1. Current ratio
2. Quick ratio (acid-test ratio)
3. Cash ratio

1. *Current ratio* measures the number of euro of current assets available to pay each euro of current liabilities (Madushanka, Jathurika, 2018).

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

Table 1 shows results for the current ratio of the five selected airline companies in Europe. All selected companies managed to keep their liquidity in the pandemic-marked 2020 at the similar level compared to the previous period (2015-2019). While in 2020, Air France recorded 0.84 euro of current assets per 1 euro of current liabilities, which is an even better result than in previous years, in 2020 Ryanair recorded the current ratio of 0.82 indicating the liquidity lower around 50% compared to 2015, but 12% lower than in 2019. According to this ratio, IAG and

EasyJet perform the lowest liquidity in 2020, while Lufthansa's current ratio in 2020 is higher compared to 2016 and 2018.

Table 1. Current ratio for the selected airline companies, 2015-2020

Current ratio	2020	2019	2018	2017	2016	2015
Ryanair	0.82	0.93	1.23	1.56	1.43	1.72
Lufthansa	0.68	0.71	0.66	0.87	0.46	0.38
IAG	0.68	0.89	0.91	1.05	1.05	0.80
Air France	0.84	0.68	0.63	0.82	0.75	0.63
easyJET	0.67	0.79	0.97	1.04	0.92	0.72

Source: Authors' calculations

2. *Quick ratio (acid-test ratio)* measures the number of euro of more liquid current assets (cash and marketable securities, accounts receivable) available to pay each euro of current liabilities (Cornett, Adair, Nofsinger, 2012).

$$\text{Quick ratio} = \frac{\text{Current assets} - \text{Inventory}}{\text{Current liabilities}}$$

Based on the results of the quick ratio in table 2, excluding the inventory as the least liquid asset does not affect the liquidity of Ryanair and EasyJet. On the other hand, quick ratio as the more precise liquidity ratio shows lower liquidity for the rest of companies indicating the same fluctuations as previously explained for current ratio.

Table 2. Quick ratio (Acid test ratio) for the selected airline companies, 2015-2020

Quick ratio	2020	2019	2018	2017	2016	2015
Ryanair	0.82	0.93	1.23	1.56	1.43	1.72
Lufthansa	0.64	0.64	0.60	0.81	0.45	0.37
IAG	0.65	0.84	0.87	1.01	1.00	0.75
Air France	0.79	0.62	0.58	0.77	0.69	0.58
easyJET	0.67	0.79	0.97	1.04	0.92	0.72

Source: Authors' calculations

3. *Cash ratio* measures the number of euro of cash and marketable securities available to pay each euro of current liabilities (Cornett, Adair, Nofsinger, 2012).

$$\text{Cash ratio} = \frac{\text{Cash and marketable securities}}{\text{Current liabilities}}$$

In case only cash and marketable securities are taken into consideration as the most liquid assets, the companies succeed in covering their current liabilities, although the liquidity is low. Based on this ratio, the

biggest impact on the liquidity level in 2020 is recorded for Lufthansa (cash ratio is lower for around 40% than quick ratio).

Table 3. Cash ratio for the selected airline companies, 2015-2020

Cash ratio	2020	2019	2018	2017	2016	2015
Ryanair	0.69	0.77	1.07	0.41	0.37	0.35
Lufthansa	0.37	0.21	0.20	0.31	0.09	0.06
IAG	0.51	0.52	0.56	0.68	0.00	0.00
Air France	0.57	0.33	0.29	0.44	0.39	0.26
easyJET	0.61	0.59	0.67	0.80	0.45	0.37

Source: Authors' calculations

Liquidity ratio analysis shows that the selected airline companies managed to keep the liquidity in 2020 at the similar level as in previous years. Liquidity ratio above 1, as a sign of a company's ability to deal with short term liabilities, is recorded for Ryanair (2015-2018), IAG (2016-2017) and easyJET (2017) regarding the current and quick ratio, while the cash ratio greater than 1 is noticeable only for Ryanair in 2018.

Profitability

Profitability ratio analysis shows the company's capacity to generate profit from its operations (Andekina, Rakhmetova, 2013). The most often used ratios for measuring the company's profitability are the following:

1. Profit margin ratio (PMR)
2. Basic earnings power ratio (BEP)
3. Return on assets (ROA)
4. Return on equity (ROE)
5. Debt to equity ratio (D/E)

1. *Profit margin ratio* (PMR), also known as the net profit margin ratio, shows the percentage of sales after a company covers all fixed and variable costs (Cornett, Adair, Nofsinger, 2012).

$$\text{Profit margin ratio} = \frac{\text{Net income available to common stockholders}}{\text{Sales}}$$

Based on the profit margin ration results shown in table 4, only Ryanair managed to keep the positive PMR in 2020 and thus overall financial results, even though it was the lowest in the observed period. On the other hand, the rest four airline companies struggled with negative financial results in 2020 caused by their difficulties to cover cost of revenue, while fixed costs additionally worsened the final financial results (AirFrance, 2021, easyJET, 2021, IAG, 2021, Lufthansa, 2021, Rayanair, 2021).

Table 4. Profit margin for the selected airline companies, 2015-2020

Profit margin	2020	2019	2018	2017	2016	2015
Ryanair	7.64	11.50	20.28	19.79	23.85	15.33
Lufthansa	-49.49	3.38	6.03	6.64	7.69	6.60
IAG	-88.69	6.72	11.82	8.71	8.65	6.63
Air France	-63.83	1.00	1.40	-1.16	3.19	0.46
easyJet	-12.73	4.28	5.12	5.11	7.76	11.35

Source: Authors' calculations

2. *Basic earnings power ratio* (BEP) measures the operating income generated per euro of the company's total assets (Cornett, Adair, Nofsinger, 2012).

$$\text{Basic earnings power ratio} = \frac{\text{EBIT}}{\text{Total assets}}$$

The results of the basic earnings power ratio in table 5 are similar as the PMR results. Ryanair is again the only analyzed company with the positive result in 2020, indicating 7.64 euro of operating income earned per euro of total assets and this result is similar or not much below results in previous years. Lufthansa, IAG, Air France and easyJET did not manage to earn any euro of operating profit per euro of assets in 2020 due to the same reason as previously elaborated for negative PMR. In the previous analyzed years, these four companies have relatively stable BEP.

Table 5. Basic earnings power ratio for the selected airline companies, 2015-2020

Basic earnings power ratio	2020	2019	2018	2017	2016	2015
Ryanair	7.64	7.67	13.49	12.27	12.54	8.10
Lufthansa	-13.72	3.55	6.91	7.80	3.39	2.76
IAG	-21.49	7.31	13.38	10.05	9.07	8.21
Air France	-15.37	3.51	4.62	6.07	4.87	4.63
easyJet	-9.17	5.71	6.58	6.77	9.05	14.25

Source: Authors' calculations

3. *Return on assets (ROA)* measures the total return on the company's assets, showing net income generated per each euro of total assets (Cornett, Adair, Nofsinger, 2012).

$$\text{Return on assets} = \frac{\text{Net income available to common stockholders}}{\text{Total assets}}$$

Ryanair recorded 4.4 euro of net income earned per euro of total assets in 2020, but these results are 34% lower than in 2019 and 62% compared to 2018 (table 6). ROAs for another four airline companies are negative in 2020 considering their loss in this year.

Table 6. Return on assets for the selected airline companies, 2015-2020

Return on assets	2020	2019	2018	2017	2016	2015
Ryanair	4.40	6.68	11.73	10.98	13.90	7.11
Lufthansa	-17.03	2.89	5.66	6.52	4.67	4.65
IAG	-22.88	4.81	10.29	7.34	7.13	5.37
Air France	-23.43	0.89	1.28	-1.23	3.45	0.51
easyJet	-12.73	4.28	5.12	5.11	7.76	11.35

Source: Authors' calculations

4. *Return on equity (ROE)* measures the return on the company's common stockholders' investment in the company's assets (Cornett, Adair, Nofsinger, 2012).

$$\text{Return on equity} = \frac{\text{Net income available to common stockholders}}{\text{Common stockholders' equity}}$$

Based on the results in table 7, return on equity can be considered as the most challenging indicator for the selected companies. Except Ryanair with a positive ROE in 2020, but lower than in the previous years, other companies have extremely low ROE in 2020 indicating no net income earned per euro of common stockholders' equity.

Table 7. Return on equity for the selected airline companies, 2015-2020

Return on equity	2020	2019	2018	2017	2016	2015
Ryanair	13.20	16.97	32.45	29.75	43.35	21.48
Lufthansa	-484.86	12.00	22.59	24.63	21.17	22.78
IAG	-526.06	25.11	42.93	27.06	34.46	27.39
Air France	-130.64	11.87	19.95	-9.92	61.11	43.22
easyJet	-56.82	11.69	10.98	10.89	15.74	24.37

Source: Authors' calculations

5. *Debt to equity ratio (D/E)* shows the relationship between the stockholders' equity and overall liabilities. While D/E below 1 is preferable, D/E above 1 indicates the increased financial risk (Anuar, Chin, 2016).

$$\text{Debt to equity} = \frac{\text{Total liabilities}}{\text{Common stockholders' equity}}$$

Debt to equity ratio results (table 8) show that all analyzed companies in this period (2015-2020) have a certain financial risk, reflected in debts several times bigger than equity. While Ryanair has D/E in 2020 with the similar value as in the previous years (e.g. in 2020 total debt was twice higher than total equity), other companies deteriorated the financial structure in 2020 by increasing total liabilities over total equity (e.g. in 2020 Lufthansa recorded total debt 27.47 higher than total equity). Air

France is the only analyzed company with negative equity in 2020 showing the company's insufficient assets for overall liabilities.

Table 8. Debt to equity ratio for the selected airline companies, 2015-2020

Debt to equity ratio	2020	2019	2018	2017	2016	2015
Ryanair	2.00	1.54	1.77	1.71	2.12	2.02
Lufthansa	27.47	3.16	2.99	2.78	3.54	3.90
IAG	22.00	4.22	3.17	2.69	3.83	4.10
Air France	- 6.58	12.37	14.58	7.10	16.69	84.48
easyJet	3.46	1.73	1.15	1.13	1.03	1.15

Source: Authors' calculations

The liquidity and profitability ratio analysis have provided an insight into the ability of the observed five European airline companies to be liquid and profitable in 2020 as the year marked with the COVID-19 pandemics. The overall liquidity of the selected airline companies was not much changed and affected in 2020 compared to the previous year, showing that companies managed to keep relatively enough liquid assets for their operations. On the other hand, the profitability ratio analysis shows that not all companies managed to be profitable in 2020. Ryanair is the only one out of five analyzed companies with positive net income available to common stockholders in 2020, and therefore the company has all profitability ratios with a positive sign. However, the profitability ratio analysis of Lufthansa, IAG, Air France and easyJET shows the companies' difficulties to cover costs of operations in 2020 and therefore their negative financial result.

Table 9. Descriptive statistics for the selected airline companies, 2015-2020

	N	Minimum	Maximum	Mean	Std. Deviation
Current ratio	30	0.38	1.72	0.8763	0.29641
Quick ratio	30	0.37	1.72	0.8487	0.30698
Cash ratio	30	0.00	1.07	0.4313	0.24740
PMR	30	-88.69	23.85	-0.1657	24.35125
BEP	30	-21.49	14.25	4.6817	8.57267
ROA	30	-23.43	13.90	2.5527	9.39486
ROE	30	-526.06	130.64	-10.6627	137.50015
D/E	30	-6.58	84.48	7.7767	16.03977

Source: Authors' calculations

Based on the previous analysis, the minimum value of current ratio is recorded in Lufthansa in 2015, while the maximum value has Ryanair in the same year. The same explanation applies for the quick ratio. Rya-

nair also has the highest value for the cash ratio in 2018, and this' indicator minimum values has IAG in 2015/16. The minimum value for the rest of profitability and liquidity indicators (PMR, BEP, ROA, ROE, D/E) is negative in 2020 and except D/E for Air France, all others are recorded for IAG. This confirms the negative impact that the COVID-19 had on the economic performance of the selected airline companies lowering their liquidity and profitability below the level they have achieved in the previous period. On the other hand, maximum value of PMR, BEP, ROA, ROE and D/E has been recorded for almost all selected companies, but in 2015 and 2016.

CONCLUSION

Market survival has become a business imperative in almost all industries around the world during the COVID-19 pandemic. Such a business model puts the ability of companies to maintain liquidity and profitability in the center of attention, without which it could not be reached the continuity of a business. These important performance indicators determine business potential for sustainability and growth.

Financial statement analysis of the five leading European companies in the airline industry provides clear answers to all research questions defined in the second segment of the paper. A general conclusion that can be recognized in this empirical research is that the COVID-19 pandemic had a significantly more detrimental effect on profitability compared to the liquidity of European airline companies. Specifically, the overall impact of the pandemic on liquidity can be interpreted as moderately detrimental, while its impact on profitability is significantly detrimental.

According to all three applied liquidity ratios, Air France is the only one of the observed companies that increased its liquidity in 2020 compared to 2019. The remaining four companies reduced liquidity in 2020 compared to 2019 in at least one of the applied ratios. This points to the general conclusion that the leading European airlines managed to maintain their liquidity to a greater extent in 2020 as a crisis year. Namely, the ability of the observed companies to convert current assets into cash in the year of global health crisis has remained almost unchanged compared to the pre-crisis period (it is moderately reduced).

The analysis finds that the situation is far more serious when it comes to profitability of European airlines after the COVID-19 outbreak. All five profitability ratios indicate the devastating effects of the health crisis on the financial results of all observed companies except Ryanair, which also recorded a decline in profit, but not to the same extent as other airlines. The negative effect of the pandemic on airline profitability is most visible in ROE indicator. For example, Lufthansa had a positive ROE of 12.00 in 2019, while in 2020 it reached negative value of -

484.86. Similarly, IAG had a positive ROE of 25.11 in 2019, while in 2020 it reached negative value of -526.06. Also, the proportions of the financial shock were clearly shown in D/E indicator. For example, the same companies, Lufthansa and IAG, achieved an increase of D/E in the period 2019-2020 from 3.16 to 27.47 and from 4.22 to 22.00, respectively. That means that these companies recorded total debt 27.47 and 22.00 higher than total equity in 2020.

The conclusions of the research are limited to the group of companies and the period of time covered by analysis – the five leading airline companies in Europe according to the number of passengers in the period from 2015 to 2020. However, it can reasonably be assumed that the COVID-19 pandemic had a similar (or even stronger) negative impact on smaller airlines in the Euro region. Therefore, the study emphasizes the importance of active observation and supporting airline industry in the times of crisis, both company management and policy makers.

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ЕКОНОМСКИ УТИЦАЈ *КОВИД-19* НА ЕВРОПСКУ АВИО-ИНДУСТРИЈУ

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Резиме

Опстанак на тржишту постао је пословни императив у готово свим индустријама широм света током пандемије *КОВИД-19*. Такав пословни модел у среднотежне пажње ставља способност предузећа да одржавају ликвидност и профитабилност, без којих се не би могао постићи континуитет пословања.

Авио-индустрија, заједно са путовањима, туризмом и угоститељством, били су најтеже погођени економски сектори током здравствене кризе изазване коронавирусом. Иако је авио-индустрија прошла кроз тешка времена, попут оних узрокованих нафтном кризом, финансијском кризом, ратовима и другим заразним болестима, процењује се да ће негативне последице пандемије *КОВИД-19* на економске и финансијске перформансе авио-индустрије широм света бити далеко озбиљније.

У овом раду се анализира економски утицај пандемије *КОВИД-19* на европску авио-индустрију. Истраживање се врши мерењем профитабилности и ликвидности пет европских авио-компанија са највећим бројем путника у 2019. Години: *Ryanair*, *Lufthansa*, *International Airline Groups – IAG*, *Air France* и *easyJET*. Циљ рада је да се утврде размере последица здравствене кризе на финансијске резултате анализираних авио-компанија. Истраживање је спроведено кроз упоредну анализу и анализу финансијских извјештаја за период од 2015. до 2020. Године.

Општи закључак који се може препознати у овом емпиријском истраживању је да је пандемија *КОВИД-19* имала знатно штетнији утицај на профитабилност него на ликвидност европских авио-компанија. Прецизније, укупан утицај пандемије на ликвидност може се тумачити као умерено штетан, док је њен утицај на профитабилност значајно штетан.

Закључци истраживања ограничени су на групу компанија и временски период обухваћен анализом. Међутим, с разлогом се може претпоставити да је пандемија *КОВИД-19* имала сличан (или још јачи) негативан утицај на мање авио-компаније у Европи. Стога, рад наглашава потребу активног посматрања и подршке авио-индустрији у кризним временима, како од стране менаџмента самих компанија, тако и од стране креатора економске политике.