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CONTENTS / SADRŽAJ

EDITOR'S LETTER

Respected reader public,
It is our great honor to present you the thirteenth edition of the Journal under the title: BH ECONOMIC FORUM, whose structure is composed of original scientific papers, preliminary communications, review articles, professional article and book reviews. In this issue of the Journal, ten papers were published, focusing on the diversity of proposed topics in line with the demands of new challenges, trends and the market, and offering new ideas, models and concepts. The papers are thematically oriented in four scientific areas: economic theory and politics, marketing, management and finance and accounting.

In this issue, the papers are diversified, which certainly represents a great advantage compared to previous numbers, because there is no deepening of the paper in one scientific field on one hand, and on the other hand, the importance of all scientific areas is almost the same. In this issue we have some papers of colleagues from abroad, more accurate papers of colleagues from Croatia and North Macedonia which gives importance to the Journal on an international dimension.

The paper by colleagues Filip Peovski and Gjorgji Gockov, titled: *Assessing the European Central Banks Unconventional Measures - A Recursive Var Approach*, treats the impact of quantitative easing by the European Central Bank (ECB) on restoring economic growth through reduced borrowing costs all with a view to achieving post-crisis recovery.

In the paper entitled: *Okun's Law and Assessment of Stimulus to the Economy of Bosnia and Herzegovina* a special emphasis is given to the Okun's law as a methodological framework for assessing the effects of the IMF.

Snezana Ristevska - Jovanovska and Ana Dimovska in the paper entitled: *Marketing Activities and Sales of Macedonian Wineries in a Condition of Pandemic Covid-19*, explain the problem faced by Macedonian wineries during the corona crisis in terms of marketing and sales, especially in the international market through an analysis of falling average prices and declining investment in marketing.

Snježana Brkić and Amira Velić in their paper entitled: *Bilateral Trade Trends and Patterns of Bosnia and Herzegovina: Case of Trade with Turkey* investigate the trends, patterns and variations in B&H trade with Turkey over an eleven - year period (2009-2019) with special emphasis on identifying industries with identified comparative advantages and dominated industries. The research results indicated an unfavourable position of B&H in trade with Turkey, with no prominent changes in the observed period.

The paper by colleague Samira Dedić, Amra Nuhanović and Jasenka Đulić, titled: *Research on the Importance of Performance of Business Excellence of Hotel Companies in the Time of Globalization and Regionalization* investigates the importance of business excellence performance in the hotel industry in a time of globalization and regionalization.

In the paper entitled: *The Effect of Materialistic and Nonmaterialistic Motivational Factors to Employees to Work* the authors started from the assumption that material factors are more important than intangible factors for job satisfaction.

Almir Alihodžić in the paper entitled: *Does the Oligopolistic Position of Banks Affect the Performance of the Banking Sector in the Federation of Bosnia and Herzegovina* explains the mutually correlated relationship between the basic measures of the oligopolistic position of banks and their impact on improving or deteriorating the performance of domestic banks.

The paper by colleague Valentina Vinšalek Stipić, titled: *Interaction of Strategic Management Processes and Achieved Corporate Profitability: Evidence from Croatia* treats the importance of adopting long-term strategic plans for the efficiency of the company operations.

The paper by colleagues Vernesa Lavić and Azra Hadžiahmetović, titled: *Corporate Income Tax Burder SMES - THE CASE OF BOSNIA AND HERZEGOVINA*, treats the taxation costs faced by small and medium enterprises in Bosnia and Herzegovina. The focus of their research is income tax and simulation of taxation costs in both the Federation of B&H and the Republika Srpska.

Alaudin Brkić, Suvad Isaković and Dženan Kulović in the paper entitled: *The Role and the Importance of the Competencies for the Employability of University Graduates*, explain the impact of various factors on the employment of University graduates. The results of the research showed that the acquired professional knowledge of graduates, the level of acquired skills, and cooperation with the University has a significant statistical impact on the employment of graduates of the University of Zenica.

In these turbulent times caused by COVID-19 the editorial board of the BH Economic Forum managed to hold all online sessions and with their briliant decisions influence the extraordinary selection of submitted papers and ultimately the publication of the thirteenth edition of the Journal. I would like to take this opportunity to thank all the member of the Journal editorial board.

We are particularly pleased by the fact that the editorial board of the Journal: BH Economic forum selects and chooses to promote papers from different scientific fields, which certainly increases the quality of the Journal.

What we especially consider important to note is that the Journal was included in new database from October to April 2021, such as: ECONBIZ, which will increase visibility in the upcoming period, as well as the number of authors.

On this occasion, I would like to thank Nermin Ahmić for the enormous and selfless technical and graceful help and support, without which we can hardly be able to perform all the activities. Also, I take the opportunity to thank Ilma Dedić-Grabus, the journal secretary for hard work and huge technical support. Also, I would like to thank all the domestic and foreign reviewers who, with their brilliant suggestions and ideas, helped this number to be published.

I am especially grateful to the English language editor, Jasmina Omrašević who, with her great suggestions and detailed proofreading, makes the texts stylish and grammatically correct in order to help the reader's mindset. I warmly thank all members of the editorial board for their successful cooperation and excellent synergy in making crucial decisions. Also, I would like to thank the top management of the Faculty, primarily the dean professor Alaudin Brkic PhD, and the Rector of the University of Zenica professor Damir Kukić PhD, who have provided moral and financial support all the time. The vision of the editorial board and publisher is to develop BH ECONOMIC FORUM as the scientific journal publishing highly relevant articles, with the major objective to be indexed on various journal lists in forthcoming years. On this occasion, we would like to thank all the authors who pointed out the high level of confidence by publishing their works, and we hope that the cooperation will continue continuously in the forthcoming period.

Zenica, autumn/winter, 2020.

Editor-in-Chief

prof.dr. Almir Alihodžić

Filip Peovski[1]

Gjorgji Gockov[2]

ASSESSING THE EUROPEAN CENTRAL BANK'S UNCONVENTIONAL MEASURES - A RECURSIVE VAR APPROACH

ABSTRACT

Unconventional monetary measures utilization has proven to be of great importance in maintaining monetary and economic stability after the Great Recession. However, we aim to test this conclusion through the impact of the quantitative easing implemented by the European Central Bank. Observed through generated shocks in the balance sheet of the Eurosystem as our main variable, we tested whether quantitative easing reestablished economic growth and rose price levels, mainly through lowering borrowing costs for banks, thus helping in the post-crisis recovery. To prove our hypotheses we construct a recursive VAR model estimated in levels using 2014M05-2018M12 data. The model incorporates variables such as the industrial production and the HICP, as output and price level proxies, and financial components such as the EONIA-MRO spread and the CISS index. The results show that the expansion shocks of the consolidated balance sheet have a positive temporary influence on industrial production and the HICP, but the reaction of the former seems to be 2.24 times greater. On the other hand, we find out that quantitative easing has an expected negative impact in widening the EONIA-MRO spread. Furthermore, we could not confirm the theoretically expected accommodative impact on financial stress.

Keywords: *Unconventional monetary measures, price stability, policy interest rates, recursive VAR model*

JEL: *C32, E43, E52, E58*

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1. INTRODUCTION

After the highly distortive economic episodes of the Great Depression and World War II, developed economies never again experienced so potent recessions. The slow buildup of economic tensions mainly on the financial markets in the U.S. eventually produced one of the greatest economic slumps - the Great Recession. One of the financial system flaws was the inadequate prudent supervisory framework (particularly for the banking system) leading to undervalued portfolio risk and the poorly specified credit rating set by the credit rating agencies, as noted by Carlin and Soskice (2015). The emerging housing bubble in the U.S. and the rising popularity of the mortgage-backed securities implicitly held potentially disastrous consequences. Consequently, the financial crisis quickly leaked in the Euro Area progressing into economic and sovereign debt crisis afterward. However, dealing with such kinds of economic shocks can be a real problem regarding a monetary union. When a specific country becomes a monetary union member, such as the Eurozone, it abandons its autonomous monetary policy - a powerful tool in achieving macroeconomic stabilization (Baldwin and Wyplosz, 2009). Furthermore, this raises potential threats from over-extensive fiscal expansion, which correlates with increased government indebtedness. The crisis had its roots deeply into the financial system so the standard monetary channels utterly failed. Since the conventional approach didn't provide enough stimulus, some central banks[3] turned to a new and seemingly unconventional approach.

This paper contains the following structure. In Section 2 we briefly focus on the literature review regarding the topic and the incorporated model. In sections 3 and 4 we explicate the methodology implemented for this research as well as the results and their discussion. In Section 5 we set a series of potential questions and concepts regarding the future usage of the UMP (unconventional monetary policy). In the last section, we conclude the research results as well as establish implicit questions that might inspire future research on the same topic.

2. Literature review

In this section we provide a brief review of the related literature of previous researches regarding the topic of unconventional monetary policy incorporating various VAR, regression, and event study approaches in estimating or studying the dynamics of the UMPs macroeconomic impact. Generally, empirical researches are supporting the thesis that unconventional policies generate positive macroeconomic effects.

3 Such as the Federal Reserve System, the Bank of England, the Swedish Riksbank, the Bank of Japan, and of course, the ECB.

The efficiency of conventional interest rate policy has been analyzed by Peersman (2011), noting that unlike the UMP, its shock transmission spreads swiftly throughout the economy, reaching its peak around 12 months after the initiation. Also, he notes that the unconventional approach positively affects crediting.

Eser and Schwaab (2013) analyze the impact of the Securities Markets Programme (SMP) on the 5-year government bond yields and their volatility through a panel regression with dummy variables indicating the start of the two separate episodes of purchases by this program. The idea behind the SMP was to lower the highly divergent bond yields of those countries that faced sovereign debt crises. According to their results, the Greek bonds reacted with the greatest fall in yields ranging from -17 to -21 b.p. on a €1 billion purchase. Portuguese bonds faced -6 to -9 b.p. yield lowering, -4 to -6 b.p. for the Spanish, -3 b.p. for the Irish bonds, and ranging from -1 to -2 b.p. for the Italian bonds. They also denote that the start of the SMP generated a much greater impact on lowering yields, unlike the reaction when the program was restarted in 2011.

Boeckx, Dossche, and Peersman (2014) estimate the VAR model in levels with monthly data for the 2007M1-2014M12 period with 3 lags to grasp the overall monetary impact during the crisis and the post-crisis period before the quantitative easing begun. For example, the usage of the output and the price level as targeted variables leads to a conclusion that the former reacts significantly reaching its peak in roughly 6 months after the conventional interest rate policy shock. Moreover, the money market spread notably drops and credit expansion is stimulated through unconventional measures.

On the other note, Gambacorta, Hofmann, and Peersman (2014) conclude that the shocks to the central bank's balance sheet (which is the most common proxy for UMP) generate fairly weaker and less persistent, but significant, however, reaction of the inflation. Unlike the previous research, they focus only on the 2008M1-2011M6 period, using monthly data. Their panel VAR approach allows them to further analyze the cross-country economic relations and shock spill-over in 8 developed economies. They include the VIX indicator (implied stock market volatility index) of the respective stock market indices. On that note, the UMP impact on them is negative and lasts for almost a year, after which gradually loses power. Besides the focus on typical macro variables, the usage of components such as the VIX and CISS indicators for stock market volatility and market stress helps in determining their relationship with the UMPs. Sign restricted SVARs can be used to estimate the previously stated, concluding that a negative and significant relationship between these variables and the balance sheet expansion is present in the EA (see Gambacorta, Hofmann and Peersman, 2014; Boeckx, Dossche and Peersman, 2014).

Hálová (2015) on the other hand, focuses on the impact of the UMPs in the EA on the national economies in Central and East European countries, using monthly data from the 2008-2014 period. In her panel VAR model, apart from the balance sheet as an indicator for UMP, she uses the shadow policy rate as an unconventional measure proxy incorporating the balance sheet expansion and the interest rate policy into one variable. We follow this same path, but for a different time frame and simply for robustness check. For the theoretical and practical approach of the shadow rate we kindly recommend the paper published by Wu and Xia (2014). The model indicates that shocks to this variable generate substantial output reaction while the inflation reacts less significantly.

Hafemann and Tillmann (2017) study the effects of monetary policy shocks at the euro level, specifically for the 2002M01-2016M10 timeline. Their estimated SVAR model with sign restrictions consists of four baseline variables such as the log of industrial production, the log of the harmonized index of consumer prices, the corporate bond spread, and the shadow rate. To study shock transmission, they add different fifth variables spanning from the unemployment rate to government bond yields. Their main results suggest a minor, but significant, effect on output and inflation. However, their country-specific models indicate heterogeneous reactions of the targeted variables. The largest reactions of the industrial production are experienced in the large euro members, while the inflation gradually degrades in its shock reaction, which is far different from the previously stated researches.

A similar path is followed by Zabala and Prats (2020) in their four-variable SVAR model. As in a vast number of researches regarding unconventional policy, they focus on the reactions of real GDP and HICP on generated shocks by the ECB's total asset size. The EONIA rate is used as a monetary stance proxy. A larger time interval spanning from 2007-2018 is of interest, but, using quarterly data. As impulse response analysis is the focal point of VAR studies, they find out that the UMPs implemented by the ECB have a positive and significant impact on real GDP reaching its peak in the second quarter. The response of prices to balance sheet expansion is positive and persisting but highly insignificant. Such empirical findings lead us to examine similar system dynamics, but despite this, we are only interested in the effects generated by quantitative easing as the largest and most commonly known unconventional measure.

3. Methodology: Research method and data sources

For the research conducted in this paper, we use a recursive VAR model to grasp the dynamics and significance of UMP shocks to the Eurozone economy. Until the introduction of the VAR models by Professor Sims in 1980, the general macroeconomic

modeling was conducted by linear regressions or autoregressive models, which can be useful in some situations, but fail to grasp the overall system dynamics. Unlike other models, the VARs include only endogenous variables, even though exogenous components can be added. Each variable in the system is modeled on behalf of its own lagged values as well as lagged values of other model variables. These models are useful in analyzing the impact of systemic shocks on specific variables that are closely intertwined and based on the impulse response analysis (Trpkova, 2014). For a broader theoretical explanation, we highly recommend the works of Lütkepohl (2005), Asteriou and Hall (2011), and Trpkova (2014).

Our main objective is testing the following set of hypotheses through the IRF (impulse response functions) analysis to identify the overall system dynamics and not the specific parameters generated by the model.

Hypothesis 1: Unconventional monetary measures generate a positive and significant reaction of the output and the price level in the Eurozone. Having in mind that output fluctuations are key in understanding the economic state, we aim to observe the industrial production's reaction to balance sheet shocks. Depending on the model output we want to test whether the price level reacts vigorously and leads to a permanent rise of inflation, as theoretically expected.

Hypothesis 2: Expansive monetary policy at the zero-lower bound further depresses the negative EONIA-MRO spread and leads to significantly less financial stress perception in the economy. The main generators of economic growth are both relaxed borrowing costs for banks, which eventually spreads throughout the broad economy, and the perception of financial risk. They are specifically targeted by the asset purchase incorporated in the quantitative easing and thus they can be evaluated alongside the program's effectiveness. We propose a five variable model using monthly data ranging from 2014M5 to 2018M12. This timeline is deliberately chosen because:

- up until 2014, the Eurozone was under constant economic shocks and financial threats which radically distort the estimated model's results,
- the quantitative easing is of our main interest as it began just a year later and was discussed openly during 2014 and implemented in 2015 (giving an almost one year of prior system accommodation in our model), and
- we want to check whether the system transmission has persistent dynamics based on similar empirical findings for a different timeline than ours.

Besides, we chose this time interval unlike the previous researches in line with our belief that the usage of the UMP is a continuous process, and thus their true impact should be analyzed taking into account the period after their ending.

That way, taking the balance sheet expansion during the usage of the quantitative easing not only provides a piece of empirical evidence on its impact but incorporates all the previously used measures by the ECB instead.

Data are taken from the ECB Statistical Data Warehouse, Eurostat, and Federal Reserve Bank of St. Louis Economic Research - FRED database. Our recursive VAR model is based on a Cholesky identification of variables, ordering them on behalf of their contemporaneous relationship. This approach restricts these connections into a lower-triangular matrix where the first variable is not influenced by any other on a contemporaneous level, while the last one is under the complete contemporaneous impact of every previous variable in the system. We place the financial stress indicator as last in the model, since we believe that the level of output, inflation, interest rate spread, and balance sheet size are categories that do have a contemporaneous impact on the level of financial stress in the economy. The p-lagged VAR model can be represented in a reduced equation form:

$$y_t = A_0 + A_1 y_{t-p} + e_t \quad (1)$$

where y_t is a (n x 1) vector of endogenous variables, A_0 is a (n x 1) vector of constants, A_1 is a (n x n) matrix of coefficients to be estimated, and is a (n x 1) vector of white noise innovations.

However, we would like to present the complete set of five equations in the model followed by a table of explanation for the measure and abbreviation of each of the included variables:

$$IP_t = \alpha_{10} + \beta_{11}IP_{t-1} + \beta_{12}HICP_{t-1} + \beta_{13}EONIAs_{t-1} + \beta_{14}b_{t-1} + \beta_{15}CISS_{t-1} + e_{1t} \quad (2)$$

$$HICP_t = \alpha_{20} + \beta_{21}IP_{t-1} + \beta_{22}HICP_{t-1} + \beta_{23}EONIAs_{t-1} + \beta_{24}b_{t-1} + \beta_{25}CISS_{t-1} + e_{2t} \quad (3)$$

$$EONIAs_t = \alpha_{30} + \beta_{31}IP_{t-1} + \beta_{32}HICP_{t-1} + \beta_{33}EONIAs_{t-1} + \beta_{34}b_{t-1} + \beta_{35}CISS_{t-1} + e_{3t} \quad (4)$$

$$b_t = \alpha_{40} + \beta_{41}IP_{t-1} + \beta_{42}HICP_{t-1} + \beta_{43}EONIAs_{t-1} + \beta_{44}b_{t-1} + \beta_{45}CISS_{t-1} + e_{4t} \quad (5)$$

$$CISS_t = \alpha_{50} + \beta_{51}IP_{t-1} + \beta_{52}HICP_{t-1} + \beta_{53}EONIAs_{t-1} + \beta_{54}b_{t-1} + \beta_{55}CISS_{t-1} + e_{5t} \quad (6)$$

Table 1: Description of model variables

Variables	Abbreviation	Measurement
Industrial production	IP	Index of industrial production (2015M05=100) transformed in percentage points
Harmonized Index of Consumer Prices	HICP	HICP index (2015M05=100) transformed in percentage points
EONIA-MRO interest rate spread	EONIAs	Interest rate spread in percentage points
Eurosystem consolidated balance sheet total asset size	b	Natural logarithm of the Eurosystem total assets size
Composite Indicator of Systematic Stress	CISS	Index points

** All variables are measured on Eurozone level and they are not country-specific.*

Source: *Authors' depiction*

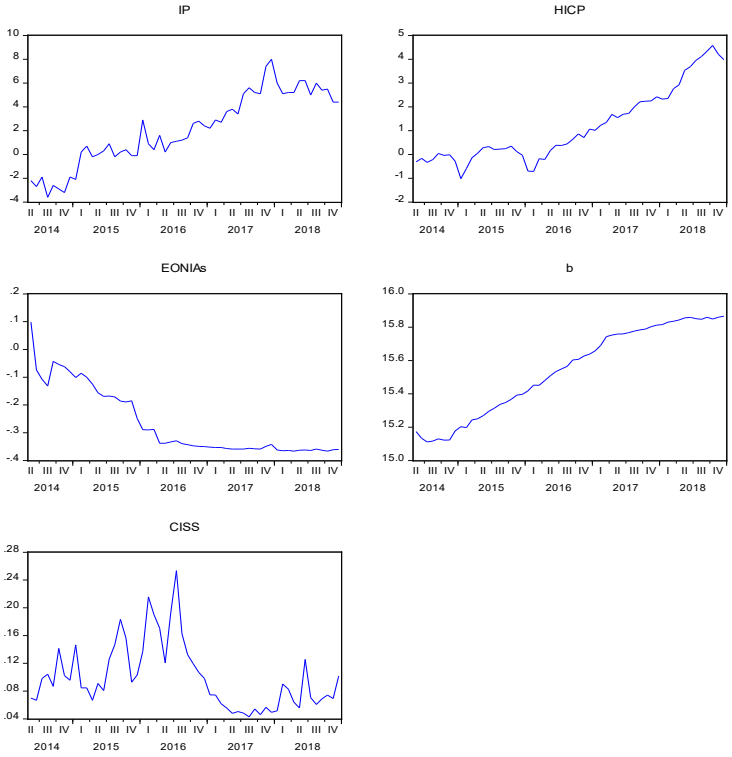
Furthermore, we can express the previously shown equations into the following matrix form:

$$\begin{bmatrix} IP_t \\ HICP_t \\ EONIAs_t \\ b_t \\ CISS_t \end{bmatrix} = \begin{bmatrix} \alpha_{10} \\ \alpha_{20} \\ \alpha_{30} \\ \alpha_{40} \\ \alpha_{50} \end{bmatrix} + \begin{bmatrix} \beta_{11} & \beta_{12} & \beta_{13} & \beta_{14} & \beta_{15} \\ \beta_{21} & \beta_{22} & \beta_{23} & \beta_{24} & \beta_{25} \\ \beta_{31} & \beta_{32} & \beta_{33} & \beta_{34} & \beta_{35} \\ \beta_{42} & \beta_{42} & \beta_{44} & \beta_{44} & \beta_{45} \\ \beta_{51} & \beta_{52} & \beta_{54} & \beta_{54} & \beta_{55} \end{bmatrix} \begin{bmatrix} IP_{t-1} \\ HICP_{t-1} \\ EONIAs_{t-1} \\ b_{t-1} \\ CISS_{t-1} \end{bmatrix} + \begin{bmatrix} e_{1t} \\ e_{2t} \\ e_{3t} \\ e_{4t} \\ e_{5t} \end{bmatrix} \quad (7)$$

Since the main idea is analyzing impulse response functions, it's logical to take into account the long-term relationship between the variables. Even though it's rare, modeling VAR processes with variables containing unit roots is not completely strange. However, it's largely discussed whether to use this particularly 'brave' approach or to differentiate the non-stationary series and how it can generate the problem of spurious regression. According to Sims, Stock, and Watson (1990), it's not necessary to insist on stationarity since differentiating as a form of series transformation severely impairs long-run relationships between the variables in the model, so continuation with data in levels is thus accepted. A similar approach is used by Peersman (2011), Gambacorta, Hofmann, and Peersman (2014) as well as Hálová (2015), all noting that it's intentionally done to preserve the long-run relationship in the system. According to these approaches we continue with five variable recursive VAR in levels as differentiation showed to severely impair the model output based on the suggested lag length.

The basic correlation analysis indicates a strong positive relationship between the total assets of the Eurosystem with the industrial production and the price level. This immediately signals partial confirmation of the first hypothesis. A strong negative relationship is found between the main variable (b) and the EONIA-MRO spread, while the estimated negative relationship with the CISS indicator is far weaker. The negative correlation between the total assets and the EONIA-MRO spread is understood in terms of widening negative spread which further depress funding costs for banks - a point which we want to confirm and we perceive as crucial in generating economic growth through the lending channel.

Graph 1: Overall variable dynamics, 2014M5-2018M12



Source: *Authors' depiction*

On behalf of VAR modeling, it is a standard procedure to check for possible unit roots in the selected variables. We conduct the Augmented Dickey-Fuller (ADF) and the Phillips-Perron (PP) tests. Every variable in the model is integrated of order one I (1), meaning that the series are non-stationary at levels. An additional Kwiatkowski-Phillips-Schmidt-Shin (KPSS) test was needed to get relevant results for the variable b, where we obtained the previous conclusions of non-stationarity. However, since we focus on the long-run relationship between the variables we decide not to incorporate the first differences of the variables in the model.

Table 2: Correlation coefficients between the variables of interest

	IP	HICP	EONIAs	b	CISS
IP	1.000000				
HICP	0.826940	1.000000			
EONIAs	-0.832466	-0.661822	1.000000		
b	0.941725	0.858183	-0.917920	1.000000	
CISS	-0.424443	-0.489476	0.123751	-0.357429	1.000000

Source: *Authors' calculations*

With the idea for estimating the most parsimonious model, we further conduct basic optimal lag length tests which suggest that p=1 lags are the most appropriate, based on the results of 3 out of 5 tests indicating that lag. Also, the model has been tested with a higher level of lags, each not providing appropriate results for the stability and residual tests. On that note, we represented the equations of the model with one lag.

Table 3: Optimal lag length selection criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	63.40071	NA	8.55e-08	-2.085740	-1.904905	-2.015630
1	347.7908	507.8395	8.13e-12*	-11.34967	-10.26466*	-10.92902*
2	365.8513	29.02574	1.07e-11	-11.10183	-9.112646	-10.33063
3	393.9927	40.20208	1.01e-11	-11.21403	-8.320666	-10.09228
4	414.7983	26.00695	1.31e-11	-11.06422	-7.266690	-9.591928
5	454.4405	42.47376*	9.39e-12	-11.58716	-6.885450	-9.764316
6	491.6239	33.19953	8.32e-12	-12.02228*	-6.416399	-9.848894

** indicates the optimal lag length estimated by the criteria*

Source: *Authors' calculations*

After estimating the recursive VAR (1) in levels we proceed with testing for model stability and conducting some residual tests related to the existence of autocorrelation and heteroscedasticity. The characteristic roots polynomial test shows that each of the inverse roots is within the unit circle which indicates model stability. Testing for autocorrelation is conducted through the popular Portmanteau autocorrelation test and the Autocorrelation LM test. The former indicates no presence of autocorrelation at the 1% level, while the latter fails to find serial correlation on each of the first six lags. Consequently, we conclude that there is no evidence of autocorrelation in the specified model. As a final test, we check for the presence of heteroscedasticity. With the p-value standing at 0.0618, it is observed that there is no heteroscedasticity problem in the model and thus residuals are taken as homoscedastic. With this, we proceed with the IRFs results explication.

Table 4: LM autocorrelation test

Null hypothesis: No serial correlation at lag h						
Lag	**LRE* stat**	**df**	**Prob.**	**Rao F-stat**	**df**	**Prob.**
1	18.91585	25	0.8011	0.745857	(25, 153.8)	0.8026
2	29.10829	25	0.2594	1.184565	(25, 153.8)	0.2618
3	28.43221	25	0.2883	1.154620	(25, 153.8)	0.2908
4	19.58562	25	0.7682	0.773863	(25, 153.8)	0.7698
5	22.22293	25	0.6228	0.885249	(25, 153.8)	0.6251
6	23.57513	25	0.5440	0.943051	(25, 153.8)	0.5465

Table 5: LM autocorrelation test

Null hypothesis: No serial correlation at lags 1 to h						
Lag	**LRE* stat**	**df**	**Prob.**	**Rao F-stat**	**df**	**Prob.**
1	18.91585	25	0.8011	0.745857	(25, 153.8)	0.8026
2	55.49109	50	0.2755	1.126003	(50, 167.5)	0.2857
3	93.57983	75	0.0721	1.302745	(75, 152.7)	0.0862
4	145.5585	100	0.0020	1.630426	(100, 131.5)	0.0043
5	182.4467	125	0.0006	1.670836	(125, 108.3)	0.0032
6	220.8922	150	0.0001	1.706553	(150, 84.2)	0.0038

Source: *Authors' calculations*

4. Results and discussions

Analyzing the impulse response functions is one of the key indicators of shock distribution throughout the model. They provide a helpful explanation of the overall model dynamics as well as the transmission of shocks. Since our two hypotheses are based on the impact generated by the balance sheet expansion on other variables, we decide to include only those IRFs for final result simplicity.

As expected, the balance sheet expansion represented by the total assets of the Eurosystem has a positive impact on the industrial production taken as output proxy as well as the level of inflation. However, the transmission of the shocks is different for these two variables. The industrial production response is estimated to be 2.24 times greater than that of the inflation, reaching its peak four periods after the initial shock with a maximum impact of 15 b.p. After the 5th period, the shock to the industrial production slowly degrades down to zero. Taking the standard deviation intervals into account, this effect is significant after the 3rd period and loses its significance from the 26th period onwards. On the other hand, our findings considerably differ in the periods of transmission compared to the work of Boeckx, Dossche, and Peersman (2014), possibly due to the different output proxies used in the models.

The HICP reaction seems to be much more persistent but weaker in effect, reaching its peak of 6.7 b.p. exactly two years after the initial shock. In the next three periods, the level of impact persists after which begins a slow process of degrading. The confidence intervals indicate an insignificant shock up until the 10th period. The reaction of the total assets on their shock is positive as expected with a downward trend and gradually becomes insignificant after the 28th period. Generally, we can conclude that the inflation response is much more persistent, but much less intensive compared to the output, in line with Gambacorta, Hofmann, and Peersman (2014). As a result, the first hypothesis can be completely accepted by the model.

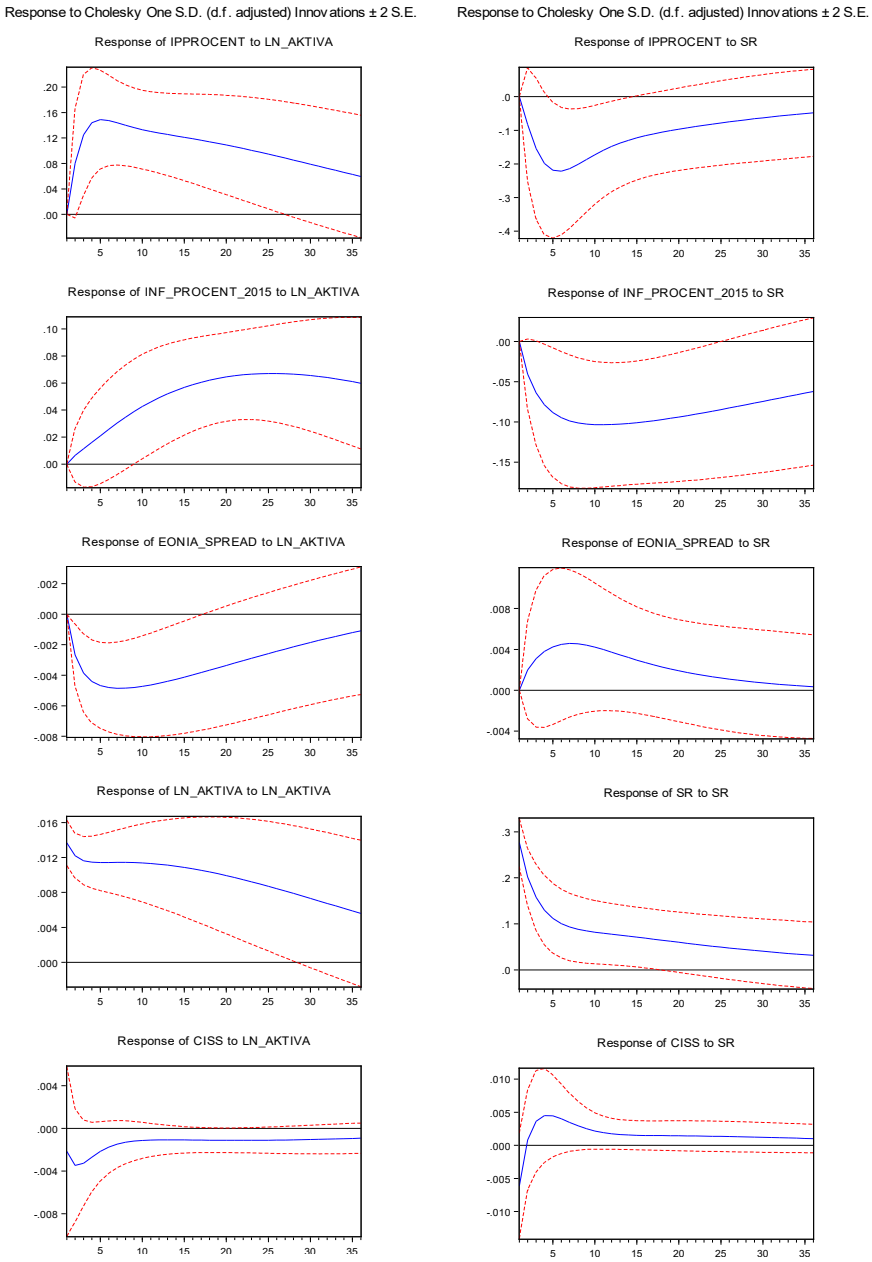
On the other hand, we confirm the expected and empirically proven negative relationship between the balance sheet size and the EONIA-MRO spread and the CISS index. However, if these shocks are compared with the previous two variables, the total assets shock impact on these two seems to be substantially smaller. The spread between the EONIA rate and the MRO rate further depresses into the negative zone, making it wider. It reaches its peak of -0.48 b.p. in the 6th period, keeping that level for the further four periods. On the other side, this effect becomes insignificant after the 17th period onward.

Contrary to the second hypothesis that the total assets of the Eurosystem generate a significant lowering in the level of financial stress in the EA, our model fails to confirm that. Due to the Cholesky decomposition, the first three variables are not under the contemporaneous impact of the balance sheet expansion, unlike the variable CISS. We place the financial stress indicator as last in the model, since we believe that the level of output, inflation, interest rate spread, and balance sheet size are categories that do have a contemporaneous impact on the level of financial stress in the economy. The immediate impact of total assets shocks generates a lowering of the CISS by -0.0022 points, reaching its peak in the next period with -0.0035 points. After this point, the shock gradually loses its impact and slowly degrades towards zero. We conclude that a negative and insignificant relationship is observed. Our model accepts the entire first hypothesis but the second one, regarding financial stress, cannot be completely accepted and thus it is partially denied.

To check for model robustness, we substitute the variable *b* with a SR (shadow policy rate) variable, which can be taken as a proxy for the UMP following the approach of Hálová (2015) and Hafemann and Tillmann (2017). This is not a common approach but it slowly gains ground in model estimation. It incorporates the levels of asset purchases by the central bank into the standard interest rate policy, generating an interest rate that is not restricted by the zero lower bound (the original approach is included in Wu and Xia, 2016). Results show that this model gives a fair explanation of the theoretical expectations of model performance if a negative rate is considered. Additionally, it provides considerably better stability and residual diagnostics test results. The main problems are, however, the especially wide confidence intervals making the IRFs insignificant in most cases. Shocks to the industrial production and inflation can be considered much stronger in response compared to our benchmark model, while the shocks to EONIA-MRO spread and the CISS are not far different from the first estimation. Finally, based on our research we can conclude that the quantitative easing did generate the expected theoretical responses on the focused variables. Their level of response to balance sheet shocks is debatable though. While the implemented measures by the ECB have proven to stimulate economic growth, price level, and further lower borrowing costs for banks, their final result might not

have fulfilled the expectations. However, we must note that the reaction of the targeted variables is not a product of quantitative easing only. The usage of prior measures still affects the Eurozone thanks to the lags in the transmission mechanism.

Graph 2: Impulse response functions; benchmark model - left-hand side, alternative model - right-hand side



** the variables IP, HICP, EONIAs, and b are represented by the abbreviations IPPROCENT, INF_PROCENT, EONIA_SPREAD, and LN_AKTIVA, respectively.*

Source: *Authors' calculations*

5. Unconventional monetary measures as a part of the standard monetary arsenal - thoughts and expectations for the future

When the monetary authorities began losing their power, the usage of UMP in tackling specific market distortions and correcting primary objective achievements was seen as revolutionary. Immediately when the interest rate policy became restricted by the ZLB (zero lower bound), the central banks quickly shifted towards alternative and quick approaches, mainly through liquidity injection in the economy. The usage of this approach for the full 12 years opens the question of whether the UMP might become a part of the standard instruments of the central banks. Friedman (2014) notes that forward guidance probably failed to generate the expected impact mainly because of the lack of empirical evidence. On the other hand, he indicates that asset purchases proved to be highly accommodative. Furthermore, he suggests that quantitative easing can de facto coexist with the traditional interest rate policy, successfully integrating into the standard monetary arsenal over time. Contrary to the previous statement it is believed that inadequately set policy for balance sheet expansion, may not be particularly effective in reviving the pre-crisis level of growth. This sets a series of possible obstacles in the implementation of the monetary policy and guiding the expectations of the economic agents. The central banks should instead focus on alternative and improved communication channels followed by an increase in their credibility (Lombardi, Siklos, and St. Amand, 2018). Belke (2016) focuses on the exit strategies from the highly accommodative monetary policy persisting at the moment, noting that it should be done gradually once the banking sector and the financial markets are back on track isolated from potential instabilities. The main reason behind this is avoiding inflationary pressures emerging from the high levels of excess liquidity which ultimately tackles down the 'almost perfect' results from the implemented inflation targeting regimes.

We reject the belief that the UMP will be abolished in near future nor they would be completely substituted by conventional instruments like the pre-crisis period. They might incorporate them into the conventional monetary arsenal, however, used temporary and non-regularly. Their usage will be strictly targeted towards specific market distortions where they are proven to be much more effective than traditional interest rate policy (see Friedman, 2014). The introduction of digital national values is closer than ever. Their announcement plans and discussions are much louder than a few years back. Unlike the cryptocurrencies present today, institutionally backed digital currency might solve the high risk and uncertainty problems. When there is no physical currency, practically the concept of flight to cash is impossible once the effective lower bound is breached. This means that the implementation of the required stabilization rate is by no means restricted from further lowering.

This phenomenon will leave a much wider space for the central banks to conduct a negative interest rate policy. Even though this concept persists as an idea, larger discussions are present in Russia, China, and Sweden (for similar topics we kindly instruct you to check Hauck and Neyer, 2010; Fischer, 2016; or for dual national currencies check Rogoff, 2017).

6. CONCLUSIONS

After the dramatic monetary shift in the post-crisis period, most of the research papers focus on different aspects and relationships in the macroeconomic and financial system to create a broad picture of how the unconventional measures are implemented, why it is done in a certain way and what the expectations for the future are. Our research aims to grasp these issues through a recursive VAR approach with our focus targeted specifically on the period of the asset purchase programme implemented by the ECB. Since quantitative easing accounts for most of the balance sheet expansion of the Eurosystem, the impact and transmission of UMP shocks in our model can be understood as a result of this monetary approach. However, one must not forget that the real impact of unconventional asset purchases and liquidity providing operations have a prolonged impact and part of the variable responses are due to previous measures incorporated by the ECB.

We found that the usage of quantitative easing, probably as a measure of last resort, impacts the output, proxied by the industrial production, much more than inflation. This relationship correlates with the rather weak inflation persisting in the EA after the sovereign debt crises. Contrary to the level of balance sheet expansion, inflation stays at low levels and this might be a serious issue that ECB needs to tackle quickly amid the COVID-19 pandemic, both quantitatively and qualitatively. The hump-shaped impulse response is something previously observed in studying monetary transmission on output and prices. Our model confirms this persistent behavior while the impact seems to be much smaller. On that note, we conclude that the quantitative easing did provide monetary and economic stimulus in the EA, but much less than expected. With the given model results, we can finally say that the first hypothesis is completely accepted while the second is partially denied. One might think of the UMP as a real non-standard measure and others might talk about it integrating into the conventional monetary arsenal in the future. We firmly believe that this approach in conducting monetary policy is here to stay and is already part of standard monetary policy. Their constant usage for more than a decade means that the monetary policy is already changed and thus they cannot be considered as pure unconventional measures anymore.

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PROCJENA NEKONVENCIONALNIH MJERA EVROPSKE CENTRALNE BANKE - REKURZIVNI VAR PRISTUP

SAŽETAK

Pokazalo se da je korištenje nekonvencionalnih monetarnih mejra od velike važnosti za održavanje monetarne i ekonomske stabilnosti nakon Velike recesije. Međutim, cilj našeg istraživanja je da testiramo ovaj zaključak kroz uticaj kvantitativnog olakšavanja koje je sprovela Evropska Centralna Banka. Posmatrano kroz generisane šokove u bilansu Evrosistema kao našu glavnu promenljivu, testirali smo da li je kvantitativno olakšavanje ponovo uspostavilo ekonomski rast i povećalo nivo cijena, uglavnom preko smanjenja troškova pozajmljivanja za banke, pomažući tako u oporavku nakon krize. Da bismo dokazali svoje hipoteze, koristimo rekurzivni VAR model procenjen u nivoima koristeći podatke za period 2014M05-2018M12. Model uključuje promenljive kao što su industrijska proizvodnja i HICP u evrozoni i finansijske komponente kao što su EONIA-MRO raspon i CISS indeks. Rezultati pokazuju da proširenje konsolidovanog bilansa Evrosistema ima pozitivan i privremeni uticaj na industrijsku proizvodnju i HICP u Evrozoni, ali čini se da je reakcija prethodnih 2,24 puta veća. S druge strane, otkrivamo da kvantitativno olakšavanje ima očekivani negativni uticaj na širenje negativnog EONIA-MRO raspona. Dodatno, nismo mogli da potvrdimo teoretski očekivani prilagodljiv uticaj na pokazatelj finansijskog stresa.

Ključne reči*: Nekonvencionalne monetarne mere, stabilnost cena, kamatne stope, rekurzivni VAR model*

JEL: *C32, E43, E52, E58*

Jasmin Halebic[1]

OKUN'S LAW AND ASSESSMENT OF STIMULUS TO THE ECONOMY OF BOSNIA AND HERZEGOVINA

ABSTRACT

The effects of coronavirus pandemics are omnipresent in the national economy of Bosnia and Herzegovina. Output and unemployment are probably the most important variables for measuring the negative effects of the pandemics from a macroeconomic perspective. Different organizations, both national and international, have announced their autumn and winter prognoses of these variables for 2020. None of them are optimistic. The Bosnian economy is in the worst situation in the last two decades.

International Monetary Fund approved US$ 361 million in urgent support to B&H in 2020 to alleviate the COVID-19 negative economic consequences. This paper aims to investigate the potential economic impact of that financial support with the application of simple arithmetic. In the paper, Okun's law is used as a methodological framework to assessing the effects of the IMF's rapid financial instrument. The relationship between the real economic growth and change in the unemployment rate is estimated for the B&H economy.

Findings of the paper show that the IMF financial support effect amounts to about 3.7% of GDP in B&H. Effects on the unemployment rate are estimated to 2.3 percentage points less than what it would otherwise have been. Since the early estimations of the GDP in B&H indicated a deep recession in 2020 this financial support proved to be an insufficient stimulus to the B&H economy. Decision-makers in the country should be aware of their responsibility for providing larger stimulus packages to avoid bad economic and social outcomes soon.

Keywords: *Okun's law, economic growth, unemployment rate, IMF financial support, Bosnia and Herzegovina*

JEL: *E65*

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1. INTRODUCTION

Macroeconomics is an area of economics with lots of controversies and ongoing debates. Advocates of the same ideas come together and form the school of economic thought. In that way, numerous schools appeared in economics. However, there are some points of consensus among macroeconomists, and Okun's Law is one of those themes that is almost unanimously supported representing a strong empirical relationship (Blinder, 1997). According to Okun's Law, there is a negative relationship between two very important macroeconomic variables, unemployment, and output. The intuition behind this relationship is that growth of output can lead to unemployment decrease. Simply, additional labor is necessary for the production of more goods and services in an economy. Thus, all programs aimed at the reduction of unemployment should be based on boosting output. Put differently, Okun's Law explores how much of a country's output may be expected to be lost if unemployment starts to go beyond the bounds of its natural level. Okun's Law is now built-in forecasters believe even in times of economic downturns.

The economy is a complex interconnected system of markets and Okun's Law describes the relationship between two markets: labour and goods markets. Generally, policymakers should be interested in the responsiveness of labour markets (measured in unemployment rates) to economic policy measures holding inflation to acceptable limits.

Pandemics of the coronavirus caused tremendous negative consequences globally. In terms of economics, those negative consequences are measured in the fall of output. The looming recession in 2020 might be continued with hard depression in those countries that do not design and implement necessary measures to support the economy. Any delay and postponement in the implementation of those economic measures will lead to extended economic hardship. The economy of B&H shrunk in 2020 experiencing the most severe economic downturn in the post-war period. In 2020 IMF approved US$ 361 million as emergency support expecting an economic decline of -5% and gradual recovery in 2021. Recent projection of real GDP reveals an even worse scenario of plummeting off the economy by -5.5% GDP and introducing a substantial short- to mid-term severe economic impact.

This paper is motivated by the fact of an almost unexplored inverse relationship between output and unemployment in the economy of B&H. Arithmetic of the Okun's Law serves as a basis for simple assessment of effects of the IMF financial assistance to B&H. Analysis of Okun's Law provides a starting point for policymakers in B&H and their attempt to create sound economic policy based on specific responsiveness of state labour market to national output change.

The paper aims to estimate a simple relationship between output and unemployment

and based on the results to make some recommendations for economic policy in the B&H economy. The paper hypothesis that will be tested is that the association between output and unemployment in the form of Okun's Law gives valuable insights into the B&H economy. The results obtained provide further support for this hypothesis in the case of the B&H economy for the analysed period.

The paper is organized as follows. Section 2 offers a literature review of Okun's Law. Section 3 introduces the research method and main findings of the paper which are discussed in more details in Section 4. In Section 5 we give some concluding remarks.

2. Literature review

The relationship between unemployment and output was quantified in 1962 by A. Okun for the USA economy. He reported that "for each extra one per cent of GNP, unemployment is 0.3 points lower" (Okun, 1962). He examined quarterly data of the USA economy for the period 1948Q2 to 1960Q4. Similar results have been obtained in other researches of recent formulations of Okun's Law with extended periods to cover 1949Q1-2015Q4, although the correlation coefficient in absolute terms increased from 0.332 to 0.684 (Canarella & Miller, 2017). Economists confirmed the existence of Okun's Law in numerous countries observing different values of the Okun coefficient. In most industrial countries the Okun coefficient is higher than in the US (Neely, 2010). A Higher Okun coefficient indicates less variability of unemployment rate associated with a certain change in GDP. Countries with rigid labour market provisions (stronger trade unions, formal restrictions in hiring and releasing employees) tend to have higher Okun coefficients. This empirical regularity was investigated and confirmed in many instances such as G7 countries (Moosa, 1997), Latin American countries (Pizzo, 2020), OECD and non-OECD countries (Huang & Yeh, 2013), advanced and developing countries (Ball, et al., 2019), etc.

There have been attempts to use Okun's Law study at the sub-national level in countries such as France (Binet & Facchini, 2013) and the USA (Prieto, et al., 2018). Okun coefficient estimated in those studies shows that its value is quite close across sub-national levels. However, some differences in the Okun coefficient across sub-national levels can be explained by distinct and dissimilar industrial structures. In other studies factors such as higher education levels of population, rate of unionization in the labour market and share of non-manufacturing employment found to be of decisive importance in the determination of the Okun coefficient at sub-national levels (Guisingera, et al., 2018).

In the relevant literature, there is also empirical evidence on youth unemployment showing more reaction to changes in economic growth in comparison to older population cohorts. Researchers in those studies confirmed higher unemployment rates' responsiveness of young males and females to changes in output than that of total unemployment of the same gender (Butkus & Seputiene, 2019). This finding of age and gender sensitivity in value of Okun coefficient are recommended to be considered in economic policy formulations aimed at reducing the unemployment rate (Kim & Park, 2018).

Some researchers also investigated changes in the Okun coefficient in times of recession and expansion establishing a sort of asymmetry in the value of the coefficient. In times of recessions, the Okun coefficient tends to be higher than in periods of economic expansion due to decisions of firm owners to escape any hesitation in the layoff of workers during a recession. On the other side, in times of economic expansion firm owners prefer to increase overtime working hours than to increase employment (Lim, et al., 2018). A country-level analysis for EU28 also indicates similar results, higher Okun coefficient values have been observed in the post-crisis period of 2008-2014 than in pre crises period of 2001-2007 in EU28 countries (Novak & Darmo, 2019).

In the literature several factors can be recognized as influential ones to the Okun coefficient:

Shadow economy. In countries with a huge informal economy, the relationship between the unemployment rate and output growth is far from clear. Evidence shows a smaller correlation coefficient between the labour market and change in output growth in those countries with substantial shadow economies (Singh, et al., 2012).

Labour and business regulations. This factor refers to the reaction of labour markets concerning regulations (rules of the game) existing in specific product and labour markets. If regulations regarding hiring and releasing of employees, for instance, are strict then, consequently, changes in unemployment will be less responsive to changes in output. Job security provisions make hiring and laying off workers more difficult for firms and they reluctantly show any sensitivity to output changes such as short-term recessions and expansions (Kaufman, 1988). Similar logic exists behind other sorts of labour and market regulations.[2]

2 Besides hiring and firing provisions there are other aspects of labour and product market regulations such as, unionisation of labour market and centralized collective bargaining, rigidity of working hours, costs related to worker dismissal, etc., or those that can be understood as business regulations manifested in all kinds of costs: bureaucracy costs, start-up costs, bribes and corruption, etc.

Structure of the economy. Countries with the larger agricultural sector are typically more resistant, in terms of unemployment, to output fluctuations. On the other side, a relationship described by Okun's Law is more powerful in countries with salient industry sectors (Farole, et al., 2017).

Service sector contribution to GDP. There are findings in the empirical research literature that indicate higher responsiveness of the unemployment rate to changes in growth in output in countries with larger service sectors in the economy (Crivelli, et al., 2012; Ball, et al., 2019).

Skill mismatch index. When skill mismatch is defined as the difference between demand and supply in skills, that is those embodied in existing jobs (demand) and those in the overall labour force (supply), then a higher skill gap can be linked to a meagre association between changes in unemployment and output (Ball, et al., 2019).

Poverty rate. This aspect of a country may have been an important factor in the relationship between the unemployment rate and output. In the literature, a high poverty rate may be associated with less responding of the unemployment rate to output changes (An, et al., 2017). Hence, in poor countries, low values of the Okun coefficient may be expected.

Quality of institutions. Okun coefficient value can also be influenced by institutions since institutions are generally seen as a strong factor related to economic outcomes such as output and unemployment (Halebic, 2011).

Table 1: Okun coefficient: Explanatory variables and expected relationships

Explanatory variables	Expected relationship
Size of shadow economy	Negative
Labour market regulations (labour market flexibility)	Positive
Business regulation (product market flexibility)	Positive
Structure of the economy	Positive / Negative
Service sector contribution to GDP	Negative
Skill mismatch index	Negative
Poverty rate	Negative
Quality of institutions (rule of law)	Positive

Source: *Author's creation based on Pizzo, 2020 and Ball, 2019.*

3. Research method and data

For analysis of the relationship that is represented by Okun's Law two variables are needed: unemployment and output growth. In this paper we refer to the period from 2009 to 2019, containing 11 intervals. Variables are described in the following table.

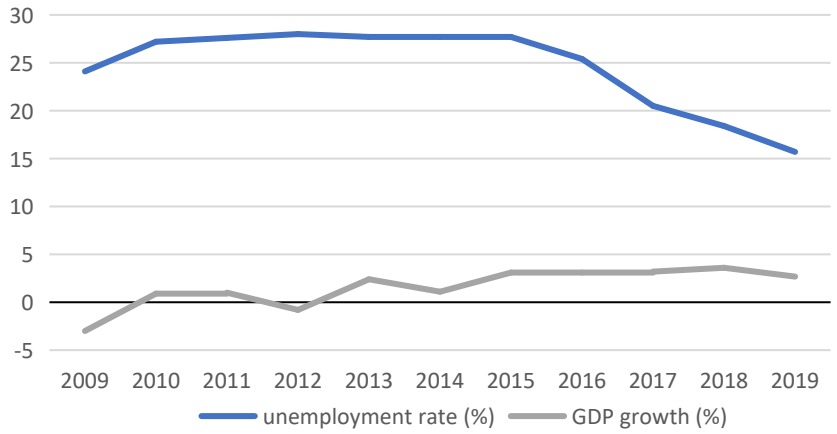
Table 2: Variables for Okun's Law calculation

Variable	Description	Notification	Source
GDP	Change in real GDP (%)	Y	B&H Agency for Statistics
Unemployment rate	Change in unemployment rate (%)	u	

Source: *Author's creation.*

A graphic presentation of two variables related to Okun's Law in B&H is given in the next Figure. In the last few years starting from 2015 relationship between output growth and unemployment is quite clear, output growth is linked to a decline in unemployment. In the first part of the period, the relationship is indistinctive since the period begins with output growth *and* an increase in unemployment. In the years that follow up to 2015, the output varies, rising in some years and falling in others while the unemployment is pretty much stable.

Figure 1: Unemployment rate and output growth in B&H, 2009-2019



Source: *Author's creation.*

3.1. Estimation of Okun's Law in B&H economy

Originally, Okun's Law has two versions: *(i) the difference version*, where Okun's Law captures changes in unemployment and GDP; and *(ii) the gap version*, in which growth in output is measured as a gap between potential output and actual output (Knotek, 2007). The Law usually takes the following form (Ball, et al., 2015):

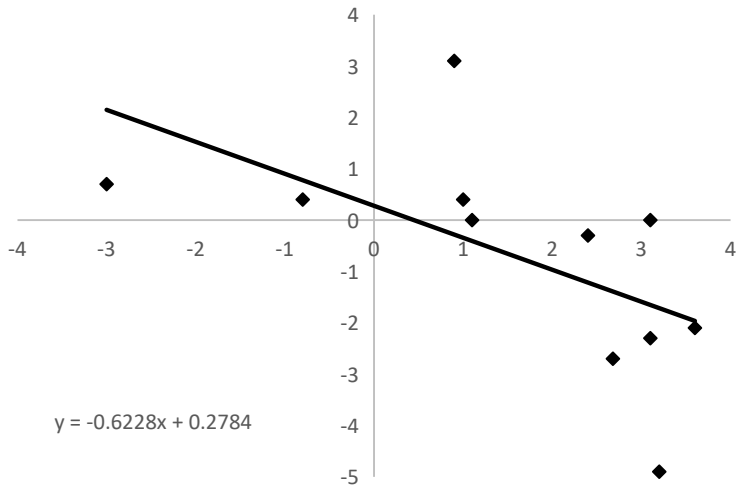
$$u_t - u_t^* = \beta(y_t - y_t^*) + \varepsilon_t, \quad \beta < 0$$

where: *u* and *y* stand for the unemployment rate and the log output, respectively; and mark * designates trend values. Error term, ε, represents all factors that can move the entire relationship of output-unemployment such as an unexpected shift in productivity or labour force participation (Ball, et al., 2019). In this paper, we restrain

from discussions of some authors who question linearity in the above equation. With non-linearity assumption in Okun's Law equation "… effectiveness (and required 'size') of stabilization policy on the real economy would depend in which 'regime' Okun's relationship then lies" (Christopoulos, et al., 2019).

In this paper, we follow the approach from Mankiw (2019) and use a scatterplot tool to illustrate Okun's Law. Each dot in the scatterplot refers to the observed change in the unemployment rate and the growth rate in real GDP, in a particular year. In the horizontal axis of the scatterplot, we put the percentage change in GDP in B&H. In the vertical axis, we put the change in the unemployment rate[3]in B&H calculated from the previous year.

Figure 2: Okun's Law in B&H economy, 2009-2019



Source: *Author's creation.*

From the scatterplot figure we observe that regression line is downward sloping which suggests that there is negative relationship between output growth and unemployment. The figure shows that there has been marked negative association between changes in unemployment and output over time. Estimated equation of Okun's Law is:

$$\Delta u_t = 0.2784 - 0.6228\, y_t \qquad (1)$$

3 The Unemployment rate is taken from Labour Force Survey which uses The International Labour Organization (ILO) definition of unemployment since the official unemployment rate and the ILO rate in case of B&H differ substantially.

From equation (1) several findings follow (Blanchard, et al., 2017):

- Negative relationship between output growth and unemployment rate means that higher output is associated with a decrease in unemployment. The slope of the regression line is - 0.62 suggesting that economic growth of 1% is, on average, associated with a decline in the unemployment rate for 0.62 percentage points. Additionally, a negative sign of the slope confirms economic theory explanation that periods of the economic expansion lead to decreasing unemployment and vice versa.
- Downward sloping regression line crosses the horizontal axis of the scatterplot at the point where the unemployment rate change is zero and output growth is approximated to 0.45%. This value has an economic interpretation. Low economic growth, i.e., $\Delta GDP \approx 0.45\%$, will not cause any change in the unemployment rate in B&H. If policymakers want to combat the high unemployment rate in the B&H economy then they must devise economic policies that result in substantial economic growth rates, higher than 0.45%.

In April 2020 the IMF Executive Board approved US$ 361 million[4] to B&H as emergency assistance with a purpose to alleviate urgent balance-of-payments (BoP) need. B&H is faced with chronic BoP problems in the long-run. The average current account deficit of BoP is about BAM -1,800 million or -6.7% of GDP in the period 2007-2019. The net international investment position of B&H in the same period is also negative. B&H is in the status of the net debtor to the rest of the world. That status brings a financial vulnerability to the B&H economy and it might undermine foreign investors' confidence in a time of financial or economic shocks (Halebic, 2021). IMF financial support of US$ 361 million is about 1.76% of 2019 GDP in B&H.

3.2. Stimulus arithmetic of IMF financial support

According to stimulus arithmetic in Krugman (2020), Okun's Law can be used as a starting point for making simple assessments of impact. Interpretation of the Okun's Law coefficient states that one has to raise real GDP by the value of that coefficient "…from what it would otherwise have been to reduce the unemployment rate 1 percentage point from what it would otherwise have been" (Krugman, 2020, p. 117). It means that the GDP of the B&H economy in 2019 of US$ 20,465 million should be raised for the amount of *GDP growth times the Okun's Law coefficient* (in percent) to calculate potential effects on unemployment (in percentage points).

4 €333 million or SDR265.2 million, that is equal to its 100% SDR quota.

In the next step of analysis, we use a multiplier for spending in order to estimate the overall effect of IMF stimulus on raising GDP in B&H. If we assume a multiplier of 2 then IMF emergency support of US$ 361 million in 2020 can be estimated to US$ 762 million or 3.7% of GDP 2019. Having in mind equation (1) we can calculate the whole effect of the stimulus on unemployment:

$$u_t = -0.6228 \bullet 3.7 \rightarrow u_t = -2.30$$

Thus, IMF financial support implemented in B&H during 2020, with the assumption of the multiplier of spending being 2, might be associated with the reduction of the unemployment rate of -2.3 percentage points from what it would have been without this support. According to the first results[5] from the labour market in B&H, the unemployment rate is estimated to 16.4%. Therefore, without IMF financial support the unemployment rate in 2020 would be, *ceteris paribus*, 18.7%.

4. Discussion

In the last five years, 2015-2019, the B&H economy experienced significant economic growth of more than a cumulative 17% or 3.4%, on average. This positive economic situation was accompanied by a reduction in the unemployment rate from 27.7% in 2015 to 15.7% in 2019. The annual unemployment rate decline was near 2.4%. In 2020, after the outbreak of pandemics of the coronavirus the things have deteriorated. The economic lockdown was imposed lasting for 2.5 months and other measures designated for human health protection were introduced. At the end of 2020, the last forecasts of IMF announce a gloomy scenario of a -5.5% fall in GDP.[6]

In the current economic system setting in B&H conducting an effective economic policy is faced with huge obstacles. The monetary policy framework gives the Central bank of B&H only one instrument of monetary policy, that of required reserve rate determination. This instrument of monetary policy proves to be mostly ineffective since commercial banks in B&H hold deposits over the required reserve rate limit of 10%. The fiscal policy framework is decentralized between state and entity and lower levels of government. This framework is especially over-institutionalized in the entity of FB&H. As an example, illustrating this complexity we can mention the IMF emergency support distribution in B&H. It took about 3.5 months from allocation of financial support to the state level in April 2020, to its final distribution to cantons in mid of August 2020. In this context, IMF emergency support appeared to be ill-managed in terms of timely distribution of the support to the end-users.

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5 The average value of two 3-month periods (Agency for Statistics of B&H).

6 https://www.imf.org/en/News/Articles/2020/12/18/pr20381-bosnia-and-herzegovina-imf-staff-concludes-visit-to-bosnia-and-herzegovina (accessed: 25.12.2012).

Usage of other instruments of fiscal policy on the state level has been heavily burdened with political gridlock over the whole of 2020 and the beginning of 2021. Lower government levels: entity, cantons, cities and municipalities in B&H suffered public revenues reduction since coronavirus pandemics also caused a sharp fall in economic activity, especially in sectors of tourism and transportation resulting in rising unemployment. Those lower levels designed and implemented several economic measures mostly through "corona pieces of legislation." Effects of these measures remain to be assessed in the future.

Implementation of IMF emergency support, when analysed in simple stimulus arithmetic and with assumption of the size of spending multiplier of 2, shows that possible impact of this support can be estimated to about -2.3 percentage points decline of unemployment rate from the level that would otherwise have been. Current disputes on the political scene over the next, even larger, IMF financial support, that have been witnessed during negotiations, might cause further delay in implementation of necessary measures to combating COVID-19 pandemics and defer in giving impetus to fiscal plans in 2021. Alternatives to IMF financial support in 2021 do not look very promising, since monetary policy has been proved largely ineffective and fiscal policy takes too much time for its enacting and implementation. If the current economic downturn is forecasted to last for more than one year then fiscal incentives are also recommended to be used for stimulating a deeply affected economy.

In some countries, similar studies have been conducted at subnational levels too. This sort of analysis at sub-national levels in B&H would also be potentially interesting and useful but it must be postponed until data on the output and the unemployment changes become available at those levels.

5. CONCLUSION

Long-term growth in GDP, as one of the primary macroeconomic goals, is influenced by factors such as technological progress. Economic growth in the long-term is not connected with similar trends in the labour market such as a change in the unemployment rate. The research problem that was addressed in the paper is how to assess macroeconomic consequences of the pandemics COVID-19 in B&H together with IMF financial support and what perspectives are available before economic decision-makers in the future. In the paper, we presented an analysis of changes in GDP. In the analysis relationship between GDP growth and unemployment rate is examined in B&H in the period 2009-2019. Returning to the hypothesis posed at the beginning of this paper, it is now safe to state that there is a relatively strong and negative correlation between changes in GDP and the unemployment rate in the B&H economy.

Based on the findings of this paper it can be recommended that it is very important for B&H to decisively bolster output growth aiming at high economic growth rates in the long-run in to substantially reduce the relatively high unemployment rate. With sluggish economic growth, as in the period 2009-2014, the unemployment rate remains almost untouched. Only with robust economic growth, as in the period 2015-2019, it is possible to significantly bring down the unemployment rate. In that way, other problems in the country that are connected with high unemployment could be mitigated. Among them is the emigration of the working age population, especially young and skilled persons.

Being limited in conducting effective monetary policy and with very complex fiscal policy responsiveness to economic shocks, B&H should use financial resources available from international organizations, such as IMF, and direct them to sectors of the economy, health and social security. B&H lacks the necessary resources for massive stimulus measures of its own that can be compared to the size of financial resources provided by developed countries for their economies. The political backlash could be one of the most serious impediments to the realization of B&H growth potential to be beneficial for improvements in macroeconomic management, fully integration of the economy and preserving of its financial stability.

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Jasmin Halebic

OKUNOV ZAKON I OCJENA STIMULANSA ZA EKONOMIJU BOSNE I HERCEGOVINE

SAŽETAK

Efekti pandemije korona virusa su sveprisutni u ekonomiji Bosne i Hercegovine. Proizvodnja i nezaposlenost su vjerovatno najvažnije varijable iz makroekonomske perspektive za mjerenje negativnih efekata pandemije. Različite organizacije, državne i međunarodne, su objavile svoje jesenje i zimske prognoze tih varijabli za 2020. godinu. Nijedna od njih nije optimistična. Ekonomija u BiH se nalazi u najtežoj situaciji u posljednja dva desetljeća.

Međunarodni monetarni fond je odobrio hitnu podršku od 361 mil USD za BiH u 2020. g. radi ublažavanja negativnih ekonomskih posljedica COVID-19. Cilj rada jest istražiti potencijalni ekonomski utjecaj te finansijske podrške primjenom jednostavne aritmetike. U radu se Okunov zakon koristi kao metodološki okvir za ocjenu efekata MMF-ovog brzog finansijskog instrumenta. Estimirana je povezanost između realnog ekonomskog rasta i promjena stope nezaposlenosti u BiH.

Nalazi rada pokazuju da finansijska podrška MMF-a čini oko 3.7% BDP-a u BiH. Efekti na stopu nezaposlenosti su procijenjeni na 2.3 procentna boda manje od nivoa stope nezaposlenosti koja bi, u protivnom, nastala. Budući da rane estimacije BDP-a u BiH ukazuju na duboku recesiju u 2020. g. ova finansijska podrška se pokazala nedovoljnim stimulansom za ekonomiju BiH. Donositelji odluka u zemlji trebaju biti svjesni svoje odgovornosti za osiguranje većih stimulansa kako bi se izbjegli negativni ekonomski i socijalni ishodi u bliskoj budućnosti.

Ključne riječi: *Okunov zakon, ekonomski rast, stopa nezaposlenosti, MMF finansijska podrška, Bosna i Hercegovina*

JEL: E65

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Ana Dimovska[2]

MARKETING ACTIVITIES AND SALES OF MACEDONIAN WINERIES IN A CONDITION OF PANDEMIC COVID-19

ABSTRACT

Covid-19 has implications on the overall operation of Macedonian wineries and directly affected the decline in domestic sales and export to international markets. The HORECA sector stopped working completely or partially in all countries. The crisis affected the partial or total cuts of marketing costs, by postponing or cancelling planned projects. The wineries failed to sell the planned quantities and were forced to make significantly lower purchases for the 2020 harvest than in previous years.

The paper presents a large number of data received from the Association Wines of Macedonia, Customs Office of the Republic of North Macedonia, Ministry of Agriculture, Forestry and Water Economy of the Republic of North Macedonia, State Inspectorate for Agriculture, Internet articles containing topics relevant to the research. The additional data presented were collected from Macedonian wineries through a questionnaire on operations during the corona crisis.

This paper provides an overview of the problems faced by Macedonian wineries during the corona crisis in terms of marketing and sales, primarily in international markets and analyzes the declined average price and reduced investment in marketing.

Keywords*: North Macedonia, Macedonian wineries, Covid-19, implications, marketing, wine*

JEL: *M30*

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1. INTRODUCTION

The crisis caused by Covid-19 affected the normal functioning of all life segments and indirectly influenced the change of wine consumption worldwide. According to ProWein (n.d.), 80% of the wineries in 2020 had to reduce their costs to survive or delay planned innovations and investments. Most of them used state measures to be able to pay their employees. One in five manufacturers had to lay off workers.

Wine is a symbol of North Macedonia where it has been produced since ancient times. Many artefacts on ancient sites testify the 4000 years long tradition of viticulture and winemaking (Wines of Macedonia, 2020b). Further, wine is the second largest exported agricultural product after tobacco and participates with 17 to 20% in the gross domestic product (Wines of Macedonia, 2020c). What is even more important, the wine industry is one of the few Macedonian net export industries, because the raw materials used for production are entirely domestic (Zdravkovska-Stojcevska, 2020).

The wine industry annually buys about 130,000 tons of grapes, depending on the harvest and produces 95-120 million liters of wine, which directly affects the development of agriculture (The Economic Chamber of Macedonia, 2020). Over 85% of the produced Macedonian wine is exported to foreign markets, and about 15% is intended for the domestic market. About 50% of the exported wine is in bottles, and the rest is sold as bulk wine (Zdravkovska-Stojcevska, 2020).

Because of the importance of the Macedonian wine industry for the country, it is of a great interest to mitigate the consequences of the crisis with Covid-19. The pandemic caused big damage to the sales, the harvest and the export of wine and completely endangered the financial liquidity of the wineries. The effects of the "new normality" meant going several years back to the whole category of wine.

Simultaneously, the catering and tourist facilities where wine is consumed were completely or partially closed. This change that occurred globally, not only in Northern Macedonia, reflected in a drastic reduction in sales in these channels. On the other hand, cheaper wines were bought and there was an increase in the consumption of bag-in-box wines (International Organisation of Vine and Wine, 2020). Although the buyers were completely oriented to the trade facilities and towards the lower price segments with wine, large quantities remained unsold, the demand for wine decreased due to the ban on public gathering and the impossibility of organizing celebrations and events. By contrast, the crisis with Covid-19 gave the wineries a chance to reach new customers. During the pandemic, people showed a bigger interest in cooking and experimenting with new recipes, which increased the domestic consumption of wine during meals. Many consumers have shifted their budget to buying premium wines in stores, due to the inability to enjoy them in restaurants. Marketing

activities that were more focused on activities in the HORECA sector (hotels, restaurants and café bars), started to focus on online activities, as well as the cooperation with facilities that offer delivery and direct sales to consumers. The pandemic has boosted traffic to online sales sites, and so, many wineries have acknowledged the importance of digital media not only for connecting with fans, but also for revealing their specific requirements and preferences (The IWSR, n.d.).

Although many consumers spoiled themselves at home during the pandemic, experts still expect it to have a negative impact on the wine industry and lead to more price-sensitive consumers and an increase in sales of the lower price segments. The recovery of world wine sales as a whole is expected after the end of the Covid-19 crisis (ProWein, n.d.).

2. Methodology

This research aimed to explore the challenges which Macedonian wineries faced during the corona crisis in 2020 in terms of marketing and sales, primarily in the international markets. In order to do so, a survey of export managers in the largest Macedonian wineries was conducted in order to see how much and whether the pandemic affected the company's operations, which markets were most affected and what activities they undertook in order to respond to the new market situation. The survey was conducted online in the period from 30.12-2020 to 04.01.2021, and the questionnaire was completed by the export managers of the 10 largest wineries. On the whole, they are representing Macedonian wineries that cover 95% of the total export of bottled wine and 60% of the export of bulk wine.

This paper contains secondary data obtained from relevant and reliable institutions, such as the Customs Office of the Republic of North Macedonia, the association “Wines of Macedonia” and the Ministry of Agriculture, Forestry and Water Economy and Wines of Macedonia. A comparison of wine export in the last 3 years was made in order to see the impact of the crisis in the last year while presenting the data in graphs for better graphical visibility.

Internet articles were also used as secondary data, as well as research papers published by wine organizations and associations around the world.

The data analyses were made through the application of several scientific analytic approaches involving analysis, synthesis and comparison.

3. The impact of Covid-19 on the Macedonian wine market

The global pandemic has completely changed the daily shopping habits of consumers, increasing the use of digital services, online payments and e-commerce. Due to the impossibility of leaving their homes in periods of quarantine, consumers have rapidly started to use digital shopping and communication, and their availability has increased worldwide.

In the first part of 2020, the pandemic caused an 80% loss in the sale of wine on the domestic market during the months when an artificial closure of the market occurred. This huge drop in turnover was caused by the closure and restrictions in the operation of hospitality facilities, where in fact, the largest sale of bottled wine takes place. The biggest wineries present on the Macedonian wine market were the most affected by this situation. After the partial reopening of the market in the summer, the losses decreased, but then again, the wineries operated with reduced sales (Tikves Winery, 2020).

Of course, the time constraints for buying the necessary household groceries from the retail outlets also had an impact. This has led to a complete reduction in sales of HORECA packaging and products on which the profitability of the entire food & beverages industry is based. On the other hand, in the focus of the purchase were: value for money wines that last longer and the creation of stocks for home consumption.

With the market restrictive measures, the most affected were the wineries whose sale is fully or mostly realized through HORECA facilities. This primarily refers to wineries whose portfolio includes premium wines with higher prices such as Bovin, Kamnik, Lazar, etc. But, in 2020, not only the premium wine segment was affected, but also there was an evident decline in the value of the entire wine category. The domestic sales in 2020 were reduced by 18% in quantity and even 30% in value as compared to sales in 2019. Additionally, there was a 10% decrease in the average value of a liter of wine, which decreased from 2.20 euros in 2019 to 2 euros in 2020 (Tikves Winery, 2021).

This situation forced the Macedonian wineries to make a complete transformation in their operations and find new ways to achieve sales and make up for lost sales - home delivery, e-commerce, combo packages with restaurants, the launch of new innovative products and packaging, etc.

In comparison to more developed markets, consumers in emerging markets such as North Macedonia are more receptive to technology because they lack closeness and trust. Despite limited internet access, consumers are reluctant to shop online due to uncertainty about how their personal information will be stored and used. Emerging markets are generally lagging in the adoption of digital products and services, yet

these technologies have become indispensable in everyday life during the pandemic (In Store, 2020).

The closed catering and event facilities, as well as the impossibility of placing premium wines to the consumers through the HORECA channel, led to artificial growth of the cheaper wines which took over a part of the market share of value for money and premium wines. In 2020, compared to 2019 the following changes occurred (Tikves Winery, 2021):

- Growth of the share of the cheap wines by 6%, from 67% to 73%
- Decrease in value for money wines by 4% - a decrease from 26% to 22%
- Decrease in premium wines by 2% - decrease from 7% to 5%

This indicates that the crisis with Covid-19 has not only reduced sales in the domestic market, but also changed the structure of wine sales.

4. The impact of Covid-19 on the export of Macedonian wines

Along with the sale on the domestic market, the pandemic also affected the export of Macedonian wine. According to Ivanovic (2020), the efforts of large producers from Italy, Spain and France to get rid of large stocks of wine, contributed to a reduction in prices by more than 25%, and this indirectly affected the wineries in North Macedonia, that export large quantities of wine to these markets.

The Macedonian wine industry still bears the burden of mass wine production and its sale as bulk, imposed in the time of socialism where the main stimulus was the higher yield of grapes for the production of large quantities of wine. Macedonian wine is exported to 38 countries in the world, which indicates that the industry is highly export dependent and must constantly be aimed at opening new perspectives that mean improving the quality of the wine, experimenting with local varieties, following global trends to maintain the position on the existing markets and, of course, opening up new markets (Pancevska, 2021).

Due to the strategic importance of wine for North Macedonia, the Ministry of Economy has provided measures to support cluster associations through which companies can jointly operate in foreign markets. This will have an additional impetus for the growth of the trade exchange, especially for the increase of Macedonian export (Ministry of Economy, 2020).

Besides the wine events and fairs in the country, the most important wine fairs in the world were also cancelled, such as ProWein in Germany and Vinitaly in Verona. The organization of wine tastings and competitions was also completely disrupted

and they were moved. Digital online editions have been tried for some of the events, but the feedback is unclear (International Organization of Vine and Wine, 2020). Unfortunately, the opportunity to promote Macedonian wine and to make new collaborations at these events is lost. For the wine as a product, it is crucial to represent the country of origin.

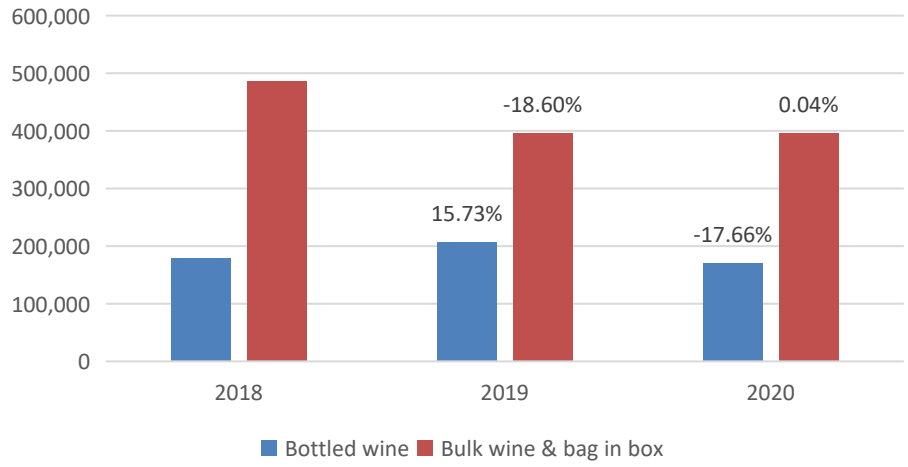
One of the events in North Macedonia that is directly aimed at promoting Macedonian wines is the 'Vranec World Day', which was organized online in 2020 and was held for the second year in a row by the association "Wines of Macedonia". Vranec is the most important and leading variety for red wine production, which participates with 38.4% of the planted vineyards (Wines of Macedonia, 2020a).

This variety is planted on nearly 11,000 hectares, making North Macedonia the largest wine producer of this variety. It is a comparative advantage of Macedonian and Balkans wines, so activities are undertaken to popularize it. By promoting this variety, it indirectly affects the increase of the export of Macedonian wines from other varieties (Inovativnost, 2020).

The Republic of North Macedonia is by far the largest exporter of the countries in the region. Its wines are mostly exported to countries in the region, but in recent years there have been successful examples of exports to Western Europe and China. The largest winery and the largest exporter of wine is Tikves Winery. From the surrounding countries, the only major exporter of wine is Greece (Zdravkovska-Stojcevska, 2020). Most of the exported wine is still bulk, although now the wine is of much better quality and it is produced according to much higher standards than 40 years ago. The process of increasing export in bottles versus the sale of bulk wine is long and laborious, and it requires large investments by wineries, focusing on quality and building a Macedonian wine brand. However, the progress is evident, for comparison, 95% of the wine that was exported in 2005 was bulk, while in 2019, it participated with 57% of the total wine export (Pancevska, 2021).

According to the data from the Customs Office of the Republic of North Macedonia (2020), in terms of exported quantities, in the period from January to November 2020, as compared to the same period in 2019, the export of bulk wine remained the same, but the export of bottled wine had a double-digit decline of 17.66% as is shown in Graph 1.

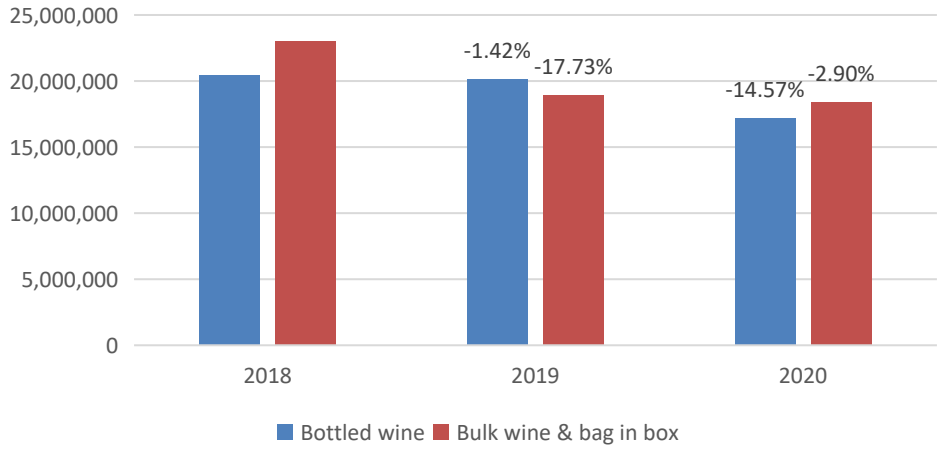
Graph 1: Total export of Macedonian wine in the first 11 months of 2018, 2019 and 2020 (in quantity - HL)



Source: *Customs Office of the Republic of North Macedonia, 2020*

In terms of value, in the same period (January-November 2020) as compared to 2019, there was a decline in export for bulk and bag in box wine of 2.90%, while bottled wine declined for 14.57%, as shown in Graph 2. This confirms that the decline in wine sales was much more felt in the sales of bottled wines, which only confirms the fact that as a result of the pandemic, consumers became oriented towards buying cheaper wine.

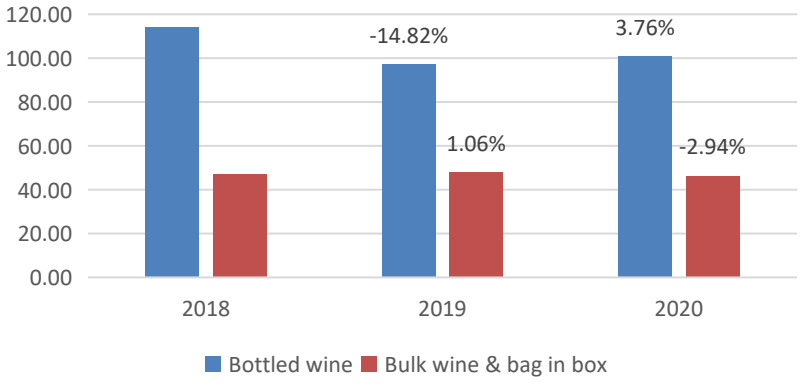
Graph 2: Total export of Macedonian wine in the first 11 months of 2018, 2019 and 2020 (in value - euros)



Source: *Customs Office of the Republic of North Macedonia, 2020*

On the other hand, there were no significant changes in the prices of bulk and bottled wine in the first 11 months of 2020, as can be seen in Graph 3. But in the telephone interview held on December 20, 2020, E. Milosevska from the association "Wines of Macedonia" pointed out that the effects of the price reduction are expected to be felt in 2021, because Germany kept the agreed prices for bulk Macedonian wine for 2020, but in 2021 announced 4-5 euro cents reduction per 1 liter of bulk wine.

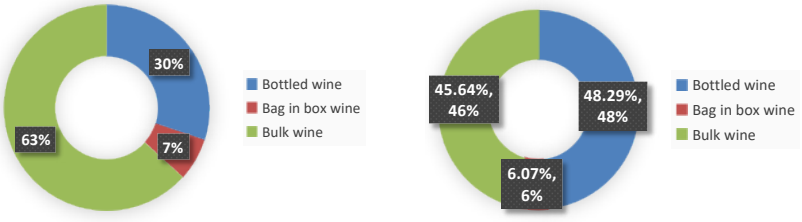
Graph 3: Average export price of Macedonian wine from 2018 to 2020 (January-November period)



Source: *Customs Office of the Republic of North Macedonia, 2020*

In the first 11 months of 2020, the largest share in quantity in the overall wine export of the Macedonian wines, had the bulk wine with 63%, while bottled wines participated with only 30%. On the other hand, in terms of value, the share of sales of bulk and bottled wine was approximately the same. The share in export in quantity and value is shown in Graph 4.

Graph 4: Participation of certain types of wine in the total export of Macedonian wine in the period January-November 2020 in quantity (left) and value (right)



Source: *Customs Office of the Republic of North Macedonia, 2020*

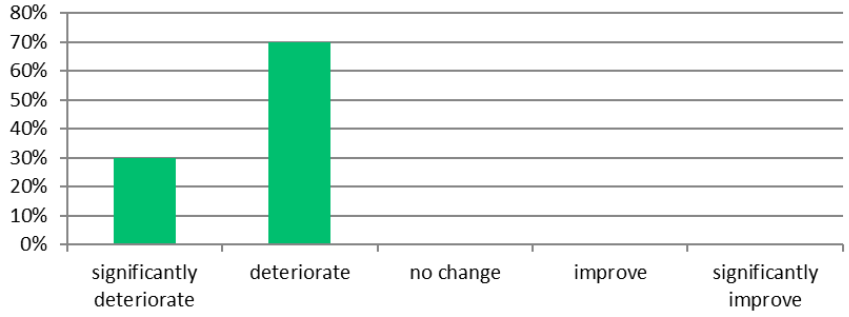
According to the Customs Office of the Republic of North Macedonia (2020), the largest wine exports in the first 11 months of 2020 were achieved in Germany, followed by the countries in the region: Serbia, Croatia, Bulgaria and Slovenia. What they all have in common, is that there is a decline in the export as compared to the first 11 months of 2019, which is certainly due to the new market situation with Covid-19. Moreover, almost all exports to Germany are bulk wine, and the export in the comparable period is almost 18% smaller. Export to Serbia which is the largest export market for Macedonian wines, also fell to 18% in 2020 as compared to 2019. The only market from the TOP five export markets that had an increase compared to 2019 is Bulgaria, where export in the first 11 months of 2020 increased by 22.12%, compared to the same period in 2019.

This market in 2020 exceeded export to Bosnia and Herzegovina which was one of the five largest export markets by value in 2019 (Trade map, 2021). Export to Bosnia and Herzegovina in the first 11 months of 2020, in comparison to the same period in 2019, decreased by 35.59% which is the largest decline compared to other key export markets for Macedonian wines (Customs Office of the Republic of North Macedonia, 2020).

For this paper, an online survey of export managers in the largest Macedonian wineries was conducted in order to collect primary data.

When asked how Covid-19 affected the economic situation of their company, all of the respondents stated that the virus had a negative impact on the operation of the winery, and 30% said that the pandemic significantly deteriorated the situation, as shown in Graph 5.

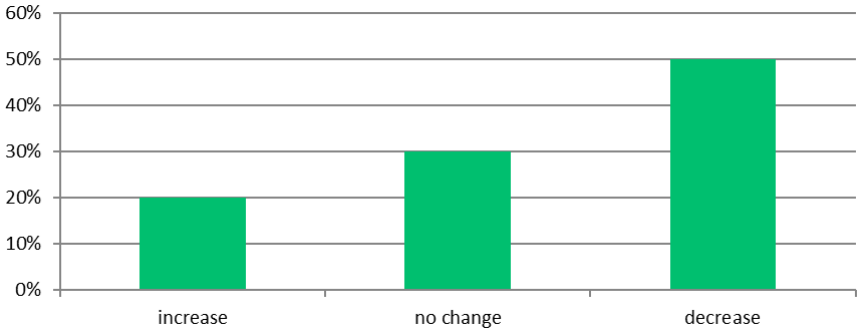
Graph 5: Impact of Covid-19 on the economic situation of Macedonian wineries



Source: *Custom online survey*

The second question referred to how the pandemic affected the export prices. 20% of export managers claimed that prices increased, 30% argued that they remained the same, and even half of the respondents (50%) stated that they have decreased, as shown in Graph 6.

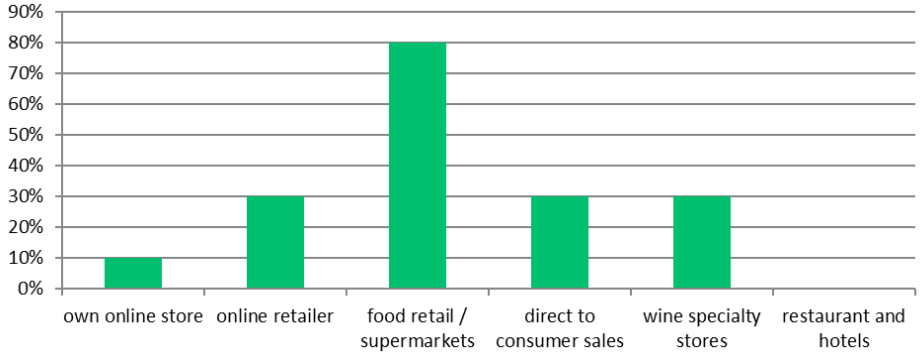
Graph 6: Impact of Covid-19 on the export prices of Macedonian wineries



Source: *Custom online survey*

Restaurants and hotels were the weakest sales channel in the export of Macedonian wines during the pandemic. When asked which sales channels showed the best results in 2020, 80% of export managers stated - food chains and supermarkets and 30% of the respondents pointed out the online merchants, direct sales and speciality wine shops. Only 10% chose their online store, but none of the respondents pointed to the HORECA channel, as shown in Graph 7 below. This only confirms the fact that in 2020, sales were diverted to trade, completely bypassing the HORECA sector.

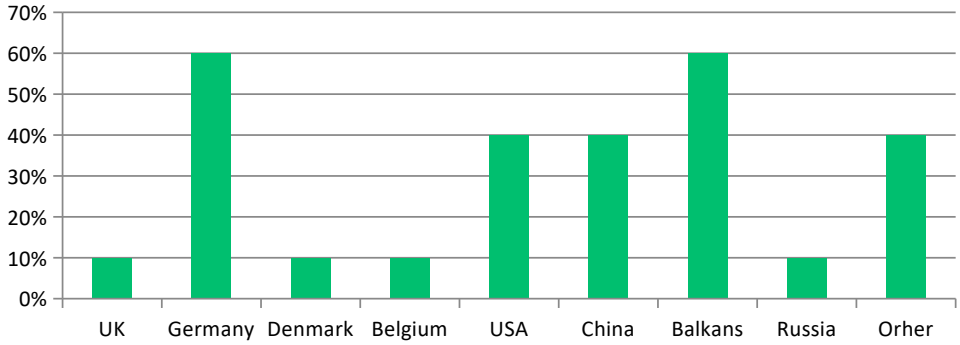
Graph 7: The best sales channels for Macedonian wineries on the international markets for 2020



Source: *Custom online survey*

In the survey, export managers were asked to select 3 export markets that were most affected during the pandemic and 60% of them mentioned Germany and the Balkan countries. They were followed by the United States, China and other countries which were listed by 40% of the answers, while 10% said that it affected sales in the UK, Denmark, Belgium and Russia. The answers to this question are shown in Graph 8 below.

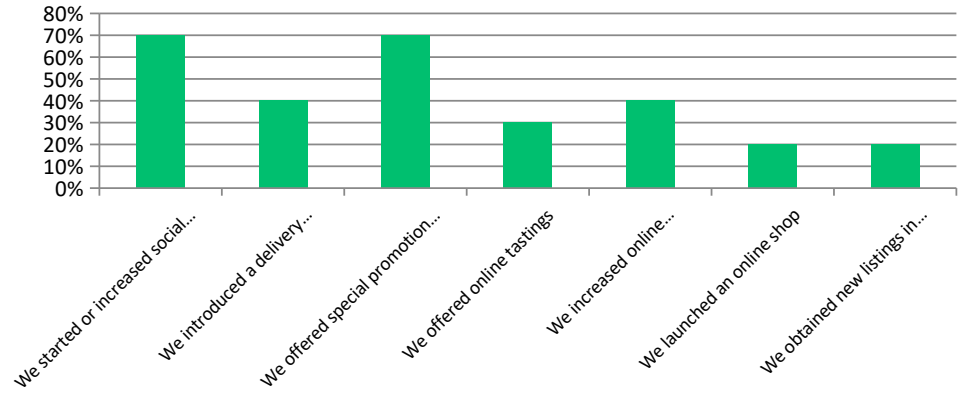
Graph 8: Export markets of Macedonian wines in which Covid-19 had the greatest



Source: *Custom online survey*

Graph 9 summarizes the answers about the impact of Covid-19 on activities in terms of marketing and sales. 70% of export managers stated that they started or increased communication through social media and that they have offered special price discounts. 40% offered a delivery service and increased online advertising, while some of them (30%) offered online tastings. The smallest part (20%) stated that they opened an online store or switched to new shopping or online channels.

Grafikon 9: Marketing activities of Macedonian wineries taken in response to the pandemic



Source: *Custom online survey*

Globally, according to the online survey by Loose & Nelgen (2020), conducted in late 2020 on more than 3,400 wine professionals from 49 countries, the following conclusions were made:

- The majority of the international wine producers stated that they were negatively affected by Covid-19, and only 15% said they had benefited during the pandemic. Small wineries and exporters were mostly affected because they didn't have as much influence in retail chains as the large wineries.
- Online channels, food retailers and direct sales had the best results in 2020. The same sales channels are expected to benefit the most in 2021. The most affected were the sales of restaurants and hotels, followed by export and wine speciality shops, which are expected to partially recover in 2021.
- Globally, the most affected export markets for 2020 were the United States, the Netherlands and China & Hong Kong, while Scandinavia and Sweden remained more robust. Overall, recovery prospects fall short of compensating for the decline experienced in 2020. In comparison to the losses, recovery prospects are particularly large for Sweden.
- Communication and direct sales to consumers were the most prominent reactions from wine producers around the world. They started using new tools such as social media (60%), online tasting (37%) or new online stores (23%). Every second specialized wine store and every third restaurant offered delivery services to their customers. Online communication and online advertising increased when businesses resumed operations after the first lock.

5. State measures to reduce the impact of Covid-19 on the Macedonian wine industry

In all countries, more or less, state measures were introduced to help wineries and growers at least partially overcome the crisis. Some of them were aimed at improving their cash flows, some at paying employees, others at facilitating the harvest for wineries and vine growers, etc (International Organisation of Vine and Wine, 2020).

Without adequate state support, there is a real danger of a complete collapse of the Macedonian wine industry which provides annual export of about 50 million euros and provides work and social security for about 30,000 individual agricultural holding, 12,000 seasonal workers and more than 2,500 employees in 74 registered domestic wineries (Faktor, 2020). The industry also has an additional contribution, because Macedonian wine is the ambassador of the Republic of North Macedonia

in the region and the world, and also, one of the few products that are exported with added value (The Economic Chamber of Macedonia, 2020).

During the purchase of grapes for the 2020 harvest, the large wineries were most affected by the winegrowers because they were expected to buy the most of the grapes. An additional problem was caused by the unfavourable weather conditions - long dry periods during the vegetation of the vines, severe rains during the ripening, as well as the diseases that badly affected the vineyard and the quality of the grapes in 2020 (Lokalno, 2020).

Perceiving the particularly difficult situation, in which the wineries found themselves, a situation where the main channel for selling Macedonian wine became catering facilities and where there is a significant reduction in the frequency of visitors and consumption, the Economic Chamber of Macedonia (2020) appealed to the Ministry of Agriculture, Water Economy and Forestry to consider the possibility of reducing the VAT on the domestic market for Macedonian wine. Although this was expected to contribute in the long run in terms of keeping the consumption of Macedonian products at home, such a proposal was not accepted.

In North Macedonia, a Law on Financial Support was adopted by a short procedure to reduce the consequences caused by Covid-19 on the production, the harvest and the wine industry in general. This law provides for a package of measures to help the wine industry. According to this law, the financial support consists of: support of 6 dinars per kilogram for grapes from harvest 2020 which is handed over to registered producers of wine intended for other grape products (not wine) and wine distillate; and then, 2 dinars per kilogram for grapes intended for wine production or export of wine grapes. The law also provides for a reduction of 30% of transport costs for exported bottled wine and 20% of transport costs for exported bulk wine in the first 10 months of 2020. It also provides support for the export of wine grapes from the 2020 harvest (Dejure, 2020):

- 2 dinars per kilogram for quantities up to 12 million kilograms
- 3 dinars per kilogram for quantities from 12 to 25 million kilograms
- 4 dinars per kilogram for quantities over 25 million kilograms

In the past period, the Government of the Republic of North Macedonia made an effort and intervened with the support of six million euros, which mostly went as direct support for winegrowers, and very little for domestic wineries. The measure to support transport costs for export is the only one that means direct support and amounts to only one million euros. Some wineries sell their wine exclusively on the domestic market in their tourist facilities that in this period didn't work. They are not covered by any measures. (The Economic Chamber of Macedonia, 2020).

6. CONCLUSION

The covid-19 pandemic has seriously affected the Macedonian wine industry. Given the importance of this industry in the Macedonian economy, the insufficient emphasis was put on establishing timely measures to mitigate the decline in sales of Macedonian wines on the domestic market and the export to foreign markets.

As a product that is drunk for enjoyment in a company and whose consumption is primarily aimed at hospitality facilities, the closure of the HORECA sector directly affected the operation of Macedonian wineries. The fear and the inability of people to collect, socialize and drink wine, diverted consumption at home, and shopping in retail or online.

Due to the reduction of sales in the domestic and international markets, it is necessary for the wineries to completely reorganize the work and grab the opportunity to open new sales channels, digitize sales and launch new types of packaging at a cheaper price segments.

Regarding the decline in the export of bottled wine, there will be an increase in stocks of unsold wine, since wineries won't be able to sell on the market due to the pandemic. Hence, there is a need for active involvement of the state with certain packages of measures that will help the most vulnerable entities and the industry in general. All this requires organized and united efforts of Macedonian wineries to take timely measures that will help the industry to "stay on its feet" in this hectic period.

A recommendation for further research is the conduction of a survey that will cover a larger sample, including not only the export managers, but also those responsible for sales in the domestic market, employees in the marketing departments of wineries, as well as vine-growers and employees in relevant state institutions. This kind of survey would give a complete picture of the long-term consequences of the pandemic on the Macedonian wine industry. This could be more than essential for the Macedonian wineries in order to make forecasts and strategies for sales and marketing after the crisis, and to take the most effective measures, which will result in a complete recovery of the wine industry.

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Snezana Ristevka-Jovanovska

Ana Dimovska

MARKETINŠKE AKTIVNOSTI I PRODAJA MAKEDONSKE VINARIJE U USLOVIMA COVID-19

SAŽETAK

Covid-19 je imao utjecaj na cjelokupno poslovanje makedonskih vinarija, a direktna posljedica je pad prodaje na domaćem i izvoza na međunarodno tržište. HORECA sektor je djelomično ili u potpunosti prestao sa radom u svim državama. Kriza je sasvim ili djelomično smanjila marketinške troškove, odlaganjem ili otkazivanjem planiranih projekata. Vinarije nisu uspjele prodati planirane količine te su bile prinuđene značajno smanjiti otkup berbe 2020. godine u odnosu na prethodne godine.

U radu je predstavljen veliki broj podataka dobivenih od Udruženja makedonskih vinarija, Uprave carine Republike Sjeverne Makedonije, Ministarstva poljoprivrede, šumarstva i vodoprivrede Republike Sjeverne Makedonije, Državnog inspektorata poljoprivrede te internet članaka koji sadrže teme relevantne za istraživanje. Predstavljeni su i dodatni podaci prikupljeni od makedonskih vinarija putem upitnika koji se odnosi na poslovanje u vrijeme korona krize.

Ovaj rad predstavlja pregled problema s kojim su se suočile makedonske vinarije tijekom korona krize u pogledu marketinga i prodaje, prevashodno na međunarodnom tržištu kroz analizu pada prosječne cijene i smanjenje ulaganja u marketing.

Ključne riječi: *Sjeverna Makedonija, makedonske vinarije, Covid-19, posljedice, vino*

JEL*:* M30

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RESEARCH ON THE IMPORTANCE OF PERFORMANCE OF BUSINESS EXCELLENCE OF HOTEL COMPANIES IN THE TIME OF GLOBALIZATION AND REGIONALIZATION

ABSTRACT

The focal point of the research in this paper is based on examining and evaluating the role and importance of performance of business excellence in the hotel industry in the time of globalization and regionalization. The research conducted in this paper included the views of hotel managers related to each performance of business excellence in Bosnia and Herzegovina. The situation with the application of the concept of business excellence in the practice of hotel companies in B&H is not particularly favourable, since this issue has not been addressed at all. Although we can see progress in improving the quality of service provision in B&H hotels, the concept of business excellence has not been sufficiently researched, and therefore not represented in the field of hotel business. Taking into account the previous, the authors came to the conclusion that everything points to the need for adoption and business according to the concept of business excellence, and that its application is necessary to ensure good business results, and thus achieve competitive advantage of each hotel company. Within the elaboration of the theoretical starting points of the observed problem, the methods of analysis and synthesis, i.e. induction and deduction, were used, with the necessity of using a systematic approach in the research. In the empirical part of the research, statistical methods of univariate analysis (descriptive statistical analysis), bivariate analysis and multivariate analysis were used. The collected data were processed with the help of SPSS Statistics 20.0

Keywords*: globalization, regionalization, performance, business excellence, hotel enterprises.*

JEL: *F 66, C 19, A 12*

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1. INTRODUCTION

As the environment in which hotel companies operate is very turbulent, dynamic and uncertain, survival in the market and achieving business success are increasingly becoming an imperative. In the last few years, there have been a number of trends in the world market, which have certain impacts on the entire hotel business. The implementation of the concept of business excellence is gaining a crucial role in all this. The application of the concept of business excellence is more recent, but with a tendency of increasing representation in the hotel sector. Today, with the increase of competition in the market, business excellence has become an important area of research, and has been identified as one of the leading factors in achieving comparative advantages over competing hotel companies [Tsai et al (2015), pp. 522]

In the time of globalization and regionalization of the world market, it is crucial to base hotel business on business excellence as a concept of business management, since the process of implementing this concept can be one of the fundamental pillars of hotel development in Bosnia and Herzegovina (B&H).

2. Previous research

Globalization as a concept began to appear at the end of the 20th century. Today, we encounter this word every day, both in private and business segments of life. The very term globalization is derived from the word "global" which means totality, and accordingly we can say that "globalism" is a way of looking at events in the global. [McKinsely Global Institute, (2019), pp. 4]. Globalization would thus imply a social process that strives for the comprehensiveness and uniqueness of the world [Turek, (1999), pp. 159]. As an idea, it refers to the "reduction" of the world, but also to the strengthening of awareness of the world as a whole [Milardović, (1998), pp. 271]. “Shrinking” the world has raised awareness of the interconnectedness and interdependence of its various parts. There is an abandonment of old and acceptance of new, broader identities. [Njavro, (1999), pp. 236]. Globalization can be argued to be one of the consequences of the development of science, modern technology, market economy, democracy and has enabled the free movement of capital, goods, information and people through the expansion and abolition of borders. In which the threads of interdependence — technological, political, economic, and ecological — intertwine at tremendous speed, nullifying geographical distances, universalizing the democratic form of the government, and increasing wealth. It is, therefore, a process that leads to social progress in all its aspects: economic-political, technological and cultural-scientific. Globalization processes are increasingly affecting segments of the tourism market, where the hotel industry is particularly prominent, which has caused the initiation of the process of regionalization of hotels at all levels.

The functioning of the tourist market in the conditions of globalization requires the construction of an international business infrastructure, which is represented by numerous international institutions and agreements. Properly formed international infrastructure provides a favourable climate for regionalization and globalization, overall control and insight into the economic, financial and political aspects of business [Youcheng Yu et al (2015), pp.116] Multinational hotel corporations' play an important role in shaping business conditions, and it is for this reason that horizontal regionalization comes to the fore. It is necessary to point out that on a global scale; a large part of hotel and tourism organizations is conceived on the principle of small family hotels and small and medium-sized hotel companies, according to the concept of a limited liability company. Large hotel and tourism corporations are usually organized as joint stock companies. Modern tendencies in the development of hotel organization and entrepreneurship take place under the influence of scientific and technological achievements, market economy and modern trends in management.

For the hotel industry, globalization has brought with it consolidation, i.e. merging and merging smaller hotels into larger hotel chains. The internationalization of business leads to business connections between bidders, in order to improve business efficiency and achieve the highest possible profit. All integrated holders of the tourist offer strive to satisfy the tourist demand to the maximum, in order to make a possible profit from this form of business. The purpose of integration is to create a whole in which a certain degree of coordination is established among the many entities involved in the provision of complex tourism services. It is an inevitable fact that nowadays, the hotel industry is experiencing growing pressure - on the one hand increasingly demanding guests, and on the other hand, strong competition, as a result of consolidation in the industry. [Newaidomski (2015), pp 5]. Maintaining a successful business of a hotel company today is based on building customer loyalty by creating services that are simple, but also tailored to each user individually. The ability to create such an environment in a hotel is determined by the knowledge and application of information and communication technologies that can enrich the user experience like never before. Today, it is considered a global trend for small and medium-sized hotels in the world to introduce advanced technologies based on a single communication infrastructure - with the aim of laying the foundation for the development of customer-friendly services, increasing customer loyalty and increasing sales revenue. For new hotels, all this is not a problem, but existing hotels often still face the challenge of smart reconstruction and renovation. Otherwise, they are threatened with remaining behind the development of the industry.

By investing in information and communication technologies, hotels get not only new types of services and opportunities for additional earnings, but also opportunities to increase the category, and thus of course the price of services.

In the hotel industry, globalization is most pronounced in the efforts of hotel companies to apply international business standards and to obtain the status of a global economic entity. [Mihajlović Krželj, (2015), pp.108] International hotel chains, i.e. their origin and development, represent the initial capsule, i.e. the driving motive, which paved the way for the expansion and globalization of the hotel industry across the planet. In a very short time, hotel chains became synonymous with the hotel industry and also contributed to its opening and popularization. Thanks to its growth and development and increasing territorial distribution in every part of the planet, hotel chains have directly influenced the diversification of the most modern industry and it is estimated that in the very near future it will become one of the most profitable activities.

Global marketing has a cosmopolitan aspect, as it focuses on meeting the needs of people around the world. Its basic postulate is Ted Bates' phrase: "Think globally, work locally."[Zaitseva et al (2016), pp. 7178].We can say that it is more adequate to talk about globalization and localization, as alternative strategic approaches, which can be followed when planning and implementing international marketing activities. The global approach seeks similarities in products, markets, marketing and propaganda messages, while the multifocal approach ignores these similarities, making differences between markets. Taking the example of hotel companies that compete in the international market or those that are just planning to do so, they are increasingly facing one enemy - time. A company that appears on the global market before someone else with a new product, service, new technology or significant innovation, makes a decisive impact in maximizing profits. Of course, this is not always possible in everything, but that is exactly what the new strategy consists of, its realistic side: it cannot be acquired on the market through others - on the entire front, but to be realized in its strategic sectors. For such a strategy and philosophy, the reward is definitely the realization of significant profits and advantages over competitors, which is manifested in the speed of market presence, technology and its productivity. Achieving business excellence of a hotel company in the hotel industry is the result of all business functions. In order to establish a stable market position and achieve development goals, it is necessary to intensify marketing efforts. Namely, hotels must set themselves the preconditions for improving the quality of business, which is based on the permanent improvement of labour productivity and knowledge, as well as responding to the requirements of service users. The benefits of hotel companies involved in the process of globalization, which keeps pace with the times, can be reduced to the following: 1) ensuring the long-term success of the hotel company; 2) regionalization expands the spectrum of hotel services; 3) all constant improvements become a reality; 4) observing changes and reacting to them, creativity, innovation and adaptability increase; 5) attracting people who want to succeed and learn, and

keeping them in a hotel company; and 6) ensure that people are equipped to meet the current and future needs of the hotel business.[Zaitseva et al (2016), pp. 7178]

Finally, we can say that by applying globalization and regionalization of business excellence in the hotel industry, benefits are achieved, both for users of hotel services and for employees themselves, that is, the goal of business excellence is achieved. Recall that, business excellence is nothing but a way of doing business that allows organizations to achieve balanced satisfaction of all stakeholders (customers, employees, society and shareholders).

Business excellence performance is the way in which an organization or company creates and develops a differentiated set of activities and capabilities that create / generate optimal products or services. [Žilić, (2011), pp. 88]. In what follows, we will briefly explain each of the business excellence performances used in this research.

Hotel offer (guest value). According to Kandampully (2007), hotel employees should observe their guests from the point of view of customer / guest lawyers. In this way, employees express their role in relationships when providing a service or product in ways of personal connection with customers or guests. This strong commitment of employees towards customers or guests encourages and can ensure the high quality of services of the hotel company even in the conditions of the greatest economic crises. [Kandampully, (2007), pp. 128]

Staff education. In the hotel industry, which employs over 70 million people, Walker (2009) points out that efficient planning cannot be done without human resources. Human resources attract, select, orient, train, teach, advise, mentor and develop the efficiency of evaluating, implementing, supporting and ensuring the quality staff in hotel companies. Based on a 2008 survey, based on a sample of 243 managers, and identified a set of problems that hinder the effectiveness of leaders. More than 60% of managers from six regions of the world stated that human resources have problems in the areas: attraction, retention, training and morale. In addition to them, there were other problems, related to issues in the field of economy and environment, understanding the needs of users, operating costs and strategic thinking about the competitive environment.

Process and resource management. Hotel services consist of a series of processes, which are managed and which need to be constantly maintained and improved, with the aim of eliminating shortcomings and mistakes, in order for the guest to be as satisfied and enthusiastic as possible. For all processes in a hotel, it is crucial that they are efficient and effective.

To achieve business excellence in the strategic management of a hotel business, it is necessary first of all to know its processes.

Mass customization is a holistic approach to bringing products or services to market, keeping the customer at the centre of every aspect of the organization. [Moutinho, (2005), pp. 256]

Quality assurance. For a long time now, the world has been dominated by the trend of globalization, which is necessarily associated with liberalization, but also the acceleration of world economic flows. In the last decade, there has been an extremely sharp expansion of world trade, which has begun to take place according to new rules. With the removal of restrictive laws and regulations, the success of economic entities, and thus hotel companies, has become primarily dependent on their ability to ensure a high level of quality of their services.

Social responsibility. Social responsibility enables companies to take a proactive attitude in the functioning of society, whereby social responsibility refers not only to business ethics but also to social development and the need to improve society. [Enz, (2010), pp. 44.] Corporate social responsibility and its sustainability play a significant role in developing the concept of business excellence. Understanding corporate social responsibility, as an integral part of organizational excellence, responsibility and behaviour towards society and the environment, is extremely important for long-term business success.

Continuous improvement. Quality management in hotel companies is very complex due to the fact that it is necessary not only to ensure a high level of quality of accommodation and food, but also the services provided. This is a difficult task for a hotel company, but also a challenge, as well as with what business organization to achieve the expected results: profit, satisfied workers and partners, satisfied community and most importantly satisfied guest, i.e. consumer of catering services.

Standardization and quality in hotel companies implies standardization at all levels of the hotel company's service program, so that quality can fully support market performance [de Souza Meira et al (2018), pp.2] Therefore, standards in the creation and provision of hotel services are necessary primarily to ensure the quality of services and continuous, effective business.

3. Research methodology

Empirical research was conducted on the basis of primary data collection by field research, using the survey method (written examination technique), using a highly structured survey questionnaire as a form for data collection. The survey questionnaire is divided into five parts. The first part contains questions related to the profile of the respondents, and includes socio-demographic indicators, as well as questions related to the workplace in the hotel.

The second part of the questionnaire included questions related to assessing the importance of performance (dimensions) of business excellence of hotel companies, which means: hotel offer - value for money, staff training, process and resource management, quality assurance, social responsibility and continuous improvement. Third, fourth and five questionnaires related to: 1) assessing the importance of "tourist satisfaction", 2) assessing the importance of implementing various hotel services, 3) assessing the importance of performance indicators of hotel companies. The survey questionnaire used the Likert scale with five levels of agreement, where a score of one indicates that the respondent completely disagrees with the given statement, and a score of five that he completely agrees with.

Primary data were collected by the management of hotel companies from the territory of B&H. The survey questionnaire referred to questions about the attitudes of respondents towards the degree of implementation of the concept of business excellence and its impact on the success of hotel operations. The basis for structuring the sample was data from the register of the Indirect Taxation Authority of B&H (ITA), the Association of Hoteliers and Restaurateurs of B&H, and the Federal Ministry of Environment and Tourism. Data collection was performed on the basis of a proportional stratified sample, since it belongs to the category of random samples and allows assessing the degree of reliability of conclusions about the investigated parameters. Since these are hotel companies, the categorization criterion used the categorization of hotel facilities, which is determined by the number of stars in hotels. The choice of hotel categorization as a stratification criterion is based on the results of examinations by experts from the Association of Hoteliers and Restaurateurs of B&H, and the Federal Ministry of Environment and Tourism.

The empirical research was conducted on a sample of hotels of the first and second category, i.e. it included two strata: four and five star hotels. According to the existing data, the total number of such hotels in B&H is 95. Since this is a concept of business excellence, this research does not include hotels of lower categories. Data collection was performed in the period from April to August 2015. The fraction, i.e. the rate of selection of hotels in the sample was 45.26%. Thus, the selected hotels were classified according to the number of stars in two strata. The structure of the sample according to the number of stars is presented in Table 1.

Table 1: Sample size and structure

Category	Number of asterisks	The basis of choice		Sample		
		Number of hotels	%	%	Number of hotels	Number of hotels in sample
1	5	10	10,53	10,53	4,53	5
2	4	85	89,47	89,47	38,47	38
∑		95	100,00	100,00	43	43
faction of choice: (43/95)*100 = 0,4526*100 = 45,26%						

Source: *author's creation*

Based on the criteria given in Table 1, the list of hotels is classified into two categories according to the number of stars. A random selection was made for each of the categories individually and thus a list of 43 hotels was formed, i.e. a list of 5 five-star hotels and a list of 38 four-star hotels.

4. Results and discussion

In order to establish the impact of business excellence dimensions on business performance indicators of hotel companies in Bosnia and Herzegovina, we first examined and tested the significance of mutual correlations of all observed variables, and then analysed the data relying on simultaneous multiple regression analysis. The Pearson correlation coefficient was used as an indicator of the strength and direction of the two phenomena. Based on the conducted correlation analysis, we can conclude that the positive relationship between the dimensions of business excellence, on the one hand, and the performance indicators of hotel companies, on the other hand, has been confirmed, supported by the final summary correlation table.

Table 2: Statistically significant correlations between the dimensions of business excellence and performance indicators of hotel companies from the aspect of hotel managers

Correlations of the observed variables (p<0,05; N=43)						
Variables	**hotel offer - value for money P1)**	**staff training (P2)**	**process and resource management (P3)**	**quality assurance (P4)**	**social responsibility (P5)**	**continuous improvement (P6)**
performance indicators	0,612**	0,551**	0,593**	0,867**	0,667**	0,816**

Source: *author's creation*

In order to test the defined hypothesis that there is a statistically significant impact of business excellence dimensions on business performance indicators of hotel companies, we calculated the parameters of the model of simultaneous multiple regression analysis, ANOVA and the necessary beta coefficients. In a simultaneous multiple regression analysis, the predictive power of each independent variable is estimated, that is, it is measured to what extent it would improve a model consisting of a series of independent variables. Multiple regression actually shows how much of the variance of the dependent variable is explained by the variance of the independent variables. The following table shows the parameters of the model of simultaneous multiple regression analysis.

Table 3: Simultaneous multiple regression analysis model for the dependent variable ″ hotel business performance indicators″

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,885[a]	,782	,746	,25063440

Source: *author's creation*

The table shows that the coefficient of multiple linear correlation is 0.885, which suggests that there is a very strong positive linear relationship between the observed variables. A specific indicator of the representativeness of simultaneous multiple regression is the coefficient of multiple determination. The coefficient of multiple determination shows the percentage of variation of the dependent variable which is explained by the combined influence of the independent variables included in the model. It can take values in the interval [0,1]. The model is more representative if the coefficient is closer to unity. Based on the parameters in the model, we can conclude that the coefficient of determination R2 = 0.782, which means that the selected model of simultaneous multiple regression analysis interpreted 78.2% of all deviations, which implies the conclusion that the model is very representative. Statistically speaking, it shows what percentage of the variability of the dependent variable is explained by the variability of the independent variables, i.e. in our case this coefficient shows how much of the variance of the dependent variable, processes and resources, social responsibility, staff training and quality assurance (78.2% dependence of the dependent variable on all six independent variables). Thus, the dimensions of business excellence significantly explain more than two-thirds of the variance of the dependent variable. The analysis of variance showed that the presented model of simultaneous multiple regression analysis was statistically significant, since the value of sig. less than 0.05 (p≈0); F (6.36) = 21.571. Thus, the model is suitable for further data processing (Table 4).

Table 4: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8,130	6	1,355	21,571	,000a
	Residual	2,261	36	,063		
	Total	10,392	42			

Furthermore, in order to take the most important step in examining the relationship and testing the impact of business excellence dimensions on hotel performance indicators, we conducted a simultaneous multiple regression analysis and calculated the necessary beta coefficients, which will show the importance of each independent variable in forecasting or influencing the dependent variable and the extent to which all independent variables combined explain the variations of the dependent variable. The obtained results are shown in the table below.

Table 5: Results of simultaneous multiple regression analysis

Model B		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		Std. Error	Beta			
1	constant	1,563	,491		3,185	,003
	Hotel offers	,664	,207	,562	3,205	,000
	Staff training	,335	,099	,346	3,390	,002
	Process and resources management	,490	,108	,477	4,534	,000
	quality assurance	1,022	,332	,827	3,084	,000
	Social responsibility	,586	,147	,509	3,994	,000
	Continuous improvement	,916	,219	,619	4,183	,000

Source: *author's creation*

As the beta coefficients define which independent variables have the greatest influence on the variance of hotel business performance indicators, based on the presented standardized beta coefficients, we can conclude that the highest beta coefficient is 0.827, which is actually the value for variable "quality assurance". As in the previous case, this variable individually contributes the most to the explanation of the dependent variable "performance indicators of hotel companies", followed by the variables "continuous improvement" "hotel offer-value for money" and "social responsibility". Consequently, observing the significance, i.e. p - value from the previous table, we can conclude that all independent variables have a statistically significant impact on the dependent variable, indicators of business performance of hotel companies. In addition, we can draw the following conclusions: the most important predictor is certainly the dimension of business excellence quality assurance ($\beta = 0.827$; $t = 3.084$; $p \approx 0$). Dimension hotel offer - value for money has a statistically significant impact on the performance indicators of hotel enterprises ($\beta = 0.562$; $t = 3.205$; $p \approx 0$). The independent variable “education of staff” proved to be somewhat weaker, but still a statistically significant predictor ($\beta = 0.346$; $t = 3.39$; $p < 0.05$). Important predictors of hotel performance indicators are certainly the variables social responsibility and continuous improvement, while the impact of the independent variable process and resource management on the dependent variable is moderate, but of statistical importance. To summarize, the conducted simultaneous multiple regression analysis showed a statistically significant impact of all six dimensions of business excellence of hotel companies on performance indicators from the managerial aspect. Therefore, finally, based on the results of empirical research, we confirm the research hypothesis that there is a statistically significant impact of business excellence dimensions on business performance indicators of hotel companies, with statistically very significant quality assurance, continuous improvement and hotel value for money.

Based on the results of the research, we can single out ten questions rated with the highest rating by the hotel manager.

Table 6: Ten most important questions from the aspect of hotel managers

	Questions	Average rating
1.	Your hotel is characterized by the claim that the satisfaction of tourists and their loyalty is a significant measure of the quality of hotel service.	4,81
2.	It is important for hotels to modernize their processes and resources.	4,81
3.	It is characteristic of your hotel to attach great importance to the improvement of all dimensions of the quality of hotel service (touch ability, reliability, expertise and trust, friendliness, etc.).	4,79
4.	It is typical for your hotel to take internal measures to reduce the number of consumer complaints, the number of poor services / products, in order to achieve greater satisfaction with the service provided.	4,79
5.	Your hotel is characterized by attaching great importance to regular maintenance of the hotel building and regular maintenance of equipment and devices, and if necessary, worn out and damaged equipment is replaced with new (carpentry, locksmith, furniture, carpets, bedding, table linen, kitchen appliances and equipment, sanitary equipment , heating, air conditioning, etc.).	4,77
6.	It is characteristic of your hotel to attach great importance and a high degree of legal and ethical responsibility.	4,77
7.	Service delivery processes are continuously improved to achieve complete satisfaction and increase value for guests, agencies and tour operators.	4,72
8.	Your hotel is characterized by the use of the Internet (booking.com, tripadvisor.com, travelcity.com, etc.) and other modern information technology as instruments to ensure quality control of hotel services.	4,72
9.	Hotel staff have precisely written instructions (rules, procedures and / or work instructions) for performing certain activities.	4,67
10.	It is characteristic of your hotel to attach great importance to the quality management system.	4,65

Source: *author's creation*

The highest average score was given to two questions: "Your hotel is characterized by the statement that the satisfaction of tourists and their loyalty is a significant measure of the quality of hotel service" and "It is important for hotels to modernize their processes and resources" 4.81. In third and fourth place, respectively, are issues related to the dimensions of the quality of hotel service and taking internal measures to reduce the number of consumer complaints 4.79. It can also be concluded that in these ten issues with the highest average score, there are as many as five in the field of quality assurance, which once again emphasizes the emphasis on this performance crucial in improving the business of hotel companies in Bosnia and Herzegovina. Furthermore, we can note that in these ten issues also participate issues in the field of process and resource management, and relate to the modernization of processes and resources and the application of precisely written instructions, and issues in the field of continuous improvement, which relate to taking internal measures to reduce the number of consumer complaints and the continuous improvement of the service delivery process. Participation in the ten most important issues related to the performance of business excellence was taken by one issue from the performance of social responsibility, and it refers to the attachment of great importance and a high degree of legal and ethical responsibility.

5. CONCLUSION AND RECOMMENDATION

Insight into the current scientific and professional literature, various authors point to the need to create awareness of the concept of business excellence, but also to understand the importance of the performance of this concept for the improvement of hotel business. Many studies point to the need to incorporate key business excellence performance into the hotel business, emphasizing that hotel managers should strive to ensure the optimal combination of business excellence performance (hotel offer - value for money, staff education, process and resource management, quality assurance, social responsibility and continuous improvement) in order to operate more successfully.

The most significant conclusions of the empirical part of the research will be presented below:

- The survey included the views of hotel managers regarding each business excellence performance. Within each performance, we analysed a number of attributes, or claims that described business excellence. Respondents expressed a degree of agreement with each statement, which was the basis for analysing their views on the importance of each of the performances.
- When it comes to assessing the importance of business excellence performance in hotel business, managers expressed the following views: the performance of business excellence "Quality Assurance" was rated collectively with the highest average score of 4.67, followed by "Process and Resource Management" 4.56 , “Continuous Improvement” 4.55. From the point of view of the hotel manager, the performance "Hotel offer - value for money" was rated with the lowest average score of 3.68. All this led us to the conclusion that "inviolability" is more important for managers in the process of improving the business of hotel companies.

It is a notorious fact that the situation with the application of the concept of business excellence in the practice of hotel companies in B&H is not particularly favourable, since this issue has not been addressed at all. Although we can see progress in improving the quality of service delivery in B&H hotels, the very concept of business excellence has not been sufficiently explored, and therefore not represented in the hotel business.

Considering the above, the conclusion is that everything points to the need for adoption and business according to the concept of business excellence, and that its application is necessary to ensure good business results, and thus achieve a competitive advantage of each hotel company. It is evident that hoteliers in B&H have taken the path of quality, but however, they are not yet doing so systemically.

The introduction of international standards, application and business according to the concept of business excellence, use of best practice experiences, monitoring of modern trends, is generally reduced only to the initiatives of individuals. However, this is not enough, since hoteliers today are required to excel in every segment of the business, in all performances, which requires the adoption of new forms and strategies for managing the entire business. It is notorious that Bosnian hoteliers have great prospects, but first and foremost they have to solve many problems and weaknesses, in order to improve all the performance of business excellence. By using a self-assessment of a company's own business excellence based on its performance, very good indicators of the situation can be reached, as well as conclusions about the areas of business that need to be improved.

The contribution of this research is even greater if we take into account the fact that no systematic research on this topic has been conducted so far, and the study of this research problem is not sufficiently represented in the domestic literature.

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ISTRAŽIVANJE VAŽNOSTI PERFORMANSI POSLOVNE IZVRSNOSTI HOTELSKIH PREDUZEĆA U VREMENU GLOBALIZACIJE I REGIONALIZACIJE

SAŽETAK

Fokalna tačka istraživanja u ovom radu temelji se na ispitivanju i ocjenjivanju uloge i značaja perfomansi poslovne izvrsnosti u hotelskoj industiji u vremenu globalizacije i regionalizacije. Istraživanje koje je sprovedeno u radu je obuhvatilo stavove hotelskih menadžera vezane za svaku performansu poslovne izvrsnosti u Bosni i Hercegovini (BiH). Notorna je činjenica, da situacija s primjenom koncepta poslovne izvrsnosti u praksi hotelskih preduzeća u BiH, nije posebno povoljna, budući da ova problematika uopšte nije obrađivana. Iako možemo vidjeti napredak po pitanju poboljšanja kvaliteta u pružanju usluga u hotelima BiH, sam pojam poslovne izvrsnosti nije dovoljno istražen, pa samim tim ni zastupljen u području hotelskog poslovanja. Uvažavajući prethodno, autori su došli do zaključka da sve upućuje na potrebu usvajanja i poslovanja prema konceptu poslovne izvrsnosti, te da je primjena istog nužna za osiguranje dobrih poslovnih rezultata, a samim tim i postizanja konkurentske prednosti svakog hotelskog preduzeća. U okviru razrade teorijskih polazišta promatranog problema korištene su metode analize i sinteze, metode indukcije i dedukcije, uz nuždu sistematskog pristupa u istraživanju. U empirijskom dijelu istraživanja korištene su statističke metode univarijatne analize (deskriptivna statistička analiza), bivarijantna analiza i multivarijantna analiza. Prikupljeni podaci obrađeni su uz pomoć SPSS Statistics 20.0

Ključne riječi: *globalizacija, regionalizacija, performanse, poslovna izvrsnost, hotelska preduzeća*

JEL: *F 66, C 19, A 12*

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BILATERAL TRADE TRENDS AND PATTERNS OF BOSNIA AND HERZEGOVINA: CASE OF TRADE WITH TURKEY

ABSTRACT:

A country's trade pattern reflects its supply (export) and demand (import) specialization indicating national performance and competitiveness in the foreign as well as in the domestic market. By applying two different concepts of trade specialization (one based on traditional trade theories of comparative advantages and the other based on modern trade theories), complemented with the analysis of export-import flows and relations, the paper aims to identify characteristics of the position of Bosnia and Herzegovina (B&H) in its bilateral trade. The paper investigates trends, patterns and variations in the trade of B&H with Turkey during the eleven-year time frame (2009-2019), with special regard to identifying industries with revealed comparative advantages and industries with dominancy of IIT. The analysis employs different indicators such as indices of export composition, sectoral diversification/concentration, IIT intensity and structure, quality of exports and imports based on relative unit values and classification of industries by technological intensity. The research results indicated an unfavourable position of B&H in trade with Turkey, with no prominent changes in the observed period. The trade deficit is constantly present, with low export-import coverage and a declining export trend. The analysis revealed a higher level of export product concentration primarily on low value added products, and comparative advantages of B&H in fewer industries, mainly resource-based or medium-technologically intensive. Trade with Turkey is extremely inter-industry trade, viewed both at an aggregate and industrial level, also pointing to B&H's low competitiveness in analyzed trade relations.

Keywords: *trade patterns, inter-industry trade specialization, intra-industry trade specialization, Bosnia and Herzegovina, Turkey*

JEL: *F10, F14, L60, O52*

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1. INTRODUCTION

The paper focuses on the analysis of the trade pattern of Bosnia and Herzegovina (B&H) in its trade with Turkey, particularly concerning inter-and intra-industry trade specialization. The results derived from the analysis should point out the export/import structure and level of their diversification, prevailing trade component - inter- or intra-industry trade - and its trend, a dominant IIT type by product differentiation (vertical or horizontal), industries with comparative advantage and industries with high IIT intensity in trade with Turkey. The responses will contribute to the insight into the overall trade performance of B&H and its individual industries' competitive ability in the country's important bilateral trade relations.

The timeframe of the research encompasses the period between two revisions of the free trade agreement with Turkey - from 2009 to 2019. Trade relations between the two countries were significantly improved after the signing of the mutual free trade agreement on 3rd July 2002[3] within the trade liberalization process spurred by the regional cooperation initiative Stability Pact for South-Eastern Europe. The agreement was asymmetric in favour of B&H for mutual rights and obligations over the first few years. In the meantime, the free trade agreement was revised twice - the first time, by the Protocol on amendments to the free trade agreement with Turkey, signed in May 2009, which was accompanied by the amended protocol on the origin of goods (November 2011)[4], and later on, in May 2019.

This paper analyses trends and patterns of B&H trade with Turkey within the context of a many years-long mutual liberalised trade regime. The paper is structured as follows: The introduction is followed by a section on theoretical considerations of trade specialization. The third section describes the methodology used, i.e. the employed indicators and data. The fourth section presents and discusses the results of the research. The paper ends with concluding considerations.

2. Literature review

International trade specialization can be viewed both as geographical (structure by countries) and commodity (structure by products) and, according to Glejser, Gossens and Eede (1982, p. 363), both can be further differentiated into export specialization (specialization of supply) and import specialization (specialization of demand). International trade specialization can also be classified as inter-industry or intra-industry trade specialization.

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3 The Agreement was a step forward compared to the originally signed trade and economic cooperation agreement of November 1995.

4 Other international documents signed by B&H and related to the trade with Turkey are available at: http://mvteo.gov.ba/Content/Read/bilateralni-trgovinski-odnosi-drugi-akti-propisi?lang=en

The classification into inter-and intra-industry specialization and trade is related to different theoretical concepts on the product structure of international trade. Comparative advantages based on traditional trade theory indicate a country's inter-industry specialization and export performance, while intensity and structure of intra-industry trade (IIT) indicates specialization and performance both in exports and in the domestic market. Inter-industry trade pertains to international trade in products of different industries and with different factor requirements (Carbaugh, 2015). It is based on inter-industry specialization, which in turn implies export specialization in the entire industries where the country has a comparative advantage. As a result of specialization, there is a dissimilarity between the products that a country exports and the products that it imports. Theoretical explanations of inter-industry specialization and trade derive from the classical and neoclassical theories, from Ricardo's theory of comparative advantages to Heckscher-Ohlin's factor endowment theory.

On the other hand, intra-industry trade is a two-way trade in the same or similar products which are classified within the same industry according to one of the following three criteria: substitution in production, substitution in consumption or identical technological intensity (Grimwade, 2000, p. 73). Intra-industry specialization is a narrower variant of specialization since the production is limited to a single or a small number of varieties of a given product, to keep the average costs at a low level. Based on greater specialization and internal economy of scale, IIT leads to an increase in production and allows a greater choice of differentiated products' varieties at lower prices for consumers (Melitz and Trefler, 2012; Yazdani and Pirpour, 2020). Although it can occur in homogenous products as well, IIT is typically related to trade in differentiated products, whether they are horizontally or vertically differentiated. Horizontally differentiated products are varieties of a single product, while vertically differentiated products reflect a different quality of the same variety (Greenway and Milner, 2003).

The explanation of IIT is based on several theoretical concepts. The vertical IIT (VIIT), as well as the inter-industry trade, is more affected by differences in factor endowment and differences in the level of income; consequently, its explanation is also related to traditional theories of comparative advantages. In the horizontal IIT (HIIT) a more significant role is played by similarity in income, the economy of scale and the number of varieties, and it is therefore far more based on the modern international trade theories which attach a particular significance to increasing returns, imperfect competition and consumers' preferences (Brkić, 2012).

Two basic approaches to modelling horizontal differentiation can be singled out in theoretical literature: the core-attributes approach, which starts from the assumption that consumers demand a particular combination of characteristics in the preferred

variety (Lancaster, 1981; Eaton and Kierzkowski, 1984), and the love-for-varieties approach, which is based on the assumption that consumers will use as many different varieties of the same product as possible (Dixit and Norman, 1980; Krugman, 1981; Helpman and Krugman, 1985).

The theoretical basis of vertical IIT was developed in papers by Falvey (1981), Falvey and Kierzkowski (1984), and Shaked and Sutton (1984). Products that belong to the same industry but are of different quality can be manufactured using a different mix of production factors and different technologies. A higher quality of a variety is related to higher requirements for capital and more advanced technology. The empirical literature provides significant proofs of the fact that the vertical IIT is the dominant type of IIT in world trade, particularly if it is the trade between countries at different levels of economic development (Mardas and Nikas, 2008; Boyrie and Kreinin, 2011).

Trade specialization in terms of distinction of the inter-industry from the intra-industry trade, either vertical or horizontal, has never been investigated in relations between B&H and Turkey before. Although the trade between the two countries has mostly proceeded freely for almost two decades, which should have yielded significant effects and caused a greater interest of researchers, according to our knowledge, some general trends of that trade have been analysed only in a small number of studies, primarily within a broader analysis of the trade between Turkey and Balkan countries. Çakir (2014) analysed economic flows (trade and investment) between Turkey and Balkan countries, including B&H, in the period 2006-2013, and concluded that Turkey's trade and investment have increased significantly in the region. Using the gravity model with exports and imports as dependent variables, Yaşar and Korkmaz (2017) analysed Turkey's trade with ten Balkan countries in the period 2006-2016 and established that there is unused trade potential especially between Bulgaria, Slovenia, B&H and Turkey. Mulalić (2019) analysed prospects for trilateral relations between Turkey, Serbia and B&H, including, besides others, effects on trade between the three countries. The described papers did not analyse the trade between B&H and Turkey in detail, unlike this paper, which is aimed at providing a deeper insight into the characteristics of that trade.

1. Research methodology

To assess the country's trade performance and specialization more fully, this analysis employs several indicators and methods. To analyse the inter-industry trade specialization and identify the product groups where B&H has comparative advantages in trade with Turkey, one of the most popular indices in the empirical literature - revealed comparative advantage index (RCA index) created by Balassa (1965, p. 106),

was employed. The index is also called the "export index of revealed comparative advantages" since all variables in the formula pertaining to exports. For the needs of this research, the original Balassa RCA index was modified for use in bilateral trade and is expressed by the following formula:

$$BI_{ijk} = \frac{\frac{X_{ijk}}{\sum_i X_{ijk}}}{\frac{X_{ij}}{\sum_i X_{ij}}} \qquad BI \in (0, \infty) \qquad (1)$$

Legend: BI_{ijk} - RCA index of country *j* in the product *i* in the trade with country *k*; X_{ijk} - exports of product *i* of country *j* to country *k*; $\sum_i X_{ijk}$ - exports of country *j* to country *k*; X_{ij} total exports of product *i* of country *j*; $\sum_i X_{ij}$ - total exports of country *j*.

The value of the BI index higher than 1 indicates that the country has the comparative advantage in the given product group (the higher the value, the more pronounced the advantage), while the index value between 0 and 1 indicates the comparative disadvantage. Industries where B&H comparative advantages were identified in the first and the last year of the observed period were classified according to their technological intensity into five categories in line with Lall's classification (Lall, 2000), to obtain the information on the quality of export flows' structure.

The analysis of the sectoral concentration of B&H exports and imports employed the concentration ratio (CR) and Herfindal-Hirschman index (HHI). Export sectoral concentration ratio has been calculated as follows:

$$CR_{jk} = \sum_{i=1}^{n} \frac{X_{ijk}}{X_{jk}} \qquad (2)$$

Legend: CR_{jk} - the sum of shares of the largest (four) exporting industries *i* from the country *j* (B&H) to the target market *k* (Turkey); X_{ijk} - exports of the industry *i* of the country *j* to the country *k*; X_{jk} - the total exports of the country *j* to the country *k*; *n* - number of industries *(n*= 1,…,4).

Export sectoral concentration/diversification has been measured by HHI as well, using the following formula (Mejía, 2011)[5]:

$$HHI_{jk} = \sum_{i=1}^{n} \left(\frac{X_{ijk}}{X_{jk}}\right)^2 \qquad (3)$$

Legend: HH_{ljk} - degree of export sectoral concentration/diversification; X_{ijk} - value of exports of industry *i* of the country *j* to the country *k*; X_{jk} - value of total exports of the country *j* to the country *k*; *n* - number of industries i.e. SITC product groups (*n* = 1,…, 262).

5 Import sectoral concentration measured by CR and HHI has been calculated applying similar formulas, but with import instead export variables.

If HHI value is lower than 0.15, it indicates low export concentration and specialization, i.e. a higher level of export diversification.[6]

Intra-industry trade and specialization were analysed using Grubel-Lloyd index (Grubel and Llyod, 1975, p. 21) at the sectoral and aggregate level. For measuring IIT intensity inside an individual industry, we used the following formula:

$$GL_{ijk} = 1 - \frac{|X_{ijk} - M_{ijk}|}{(X_{ijk} + M_{ijk})} \qquad 0 \leq GL_{ij} \leq 1 \quad (4)$$

Legend: GL_{ijk} - IIT intensity in industry *i* of country *j* in its trade with country *k*; X_{ijk} - exports of industry *i* of country *j* to country *k*; M_{ijk} - imports of industry *i* of country *j* from country *k*.

To obtain the average level of IIT for a country (for a set of industries), GL index is calculated according to the following formula (Grimwade, 2000, p. 74):

$$GL_{jk} = 1 - \frac{\sum_{i=1}^{n} |X_{ijk} - M_{ijk}|}{\sum_{i=1}^{n} (X_{ijk} + M_{ijk})} \qquad 0 \leq GL_{j} \leq 1 \quad (5)$$

Legend: GL_{jk} - aggregate GL index, i.e. IIT intensity for all industries *i* of country *j* in its trade with country *k*; *n* - number of industries i.e. SITC product groups (*n* = 1,…, 262).

To analyse the IIT structure, which means to separate industries with the dominant horizontal from those with the dominant vertical IIT, we used the so-called GHM methodology (Greenway, Hine and Milner, 1995). GHM methodology is based on the assumption that the relative difference between unit values of exports and imports reflects the difference in the quality of export and import product groups. Horizontal differentiation does not result in the variation in prices[7], while vertical differentiation is defined in terms of varieties of different quality levels, which in turn results in differences in prices. GHM methodology uses the relative unit value index (RUV), which is calculated as the ratio of exports unit value to imports unit value:

$$RUV_{ijk} = \frac{UV_{ijk}^{X}}{UV_{ijk}^{M}} \quad (6)$$

Legend: RUV_{ijk} - ratio between exports and imports unit value for industry *i* in trade of the country *j* with the country *k*; UV^{X}_{ijk} - unit value of exports for industry *i* in trade of the country *j* with the country *k*; UV^{M}_{ijk} - unit value of imports for industry *i* in trade of the country *j* with the country *k*.

6 Federal Trade Commission & U.S. Department of Justice (2010).

7 Therefore, horizontal IIT exists when export unit values are close to the given products' import unit values.

Horizontal IIT exists when the RUV of the given product group ranges in the interval from 0.85 to 1.15. Trade in products whose RUV are beyond this interval is vertical IIT; if RUV<0.85, there is the dominance of VIIT with lower-quality exports, while RUV>1.15 indicates the dominance of VIIT with higher-quality exports.

For the purpose of this research, an industry is defined as a three-digit level product group of the Standard International Trade Classification (SITC). The analysis encompassed the industries which show B&H exports and/or imports in its trade with Turkey, which is 249 each year, out of the total of 262 at the given aggregation level.

3. Research results

Within the framework of an already largely liberalised mutual trade regime, trade trends and patterns will significantly depend, *inter alia*, on trading countries' characteristics such as their size, economic performances and, more specifically, trade performances. In this particular case, Turkey is a much larger country than B&H in terms of its geographic, demographic and economic dimensions of size: it covers a 15 times bigger area with 25 times larger population and has a 38 times higher level of GDP[8]. Significant differences between the two countries also exist in terms of their trade performance and competitiveness in the world market, with advantages on the Turkish side[9]. It is expected that an impact of country-specific characteristics will be more prominent if countries trade more with each other as it is the case in bilateral relations between B&H and Turkey.

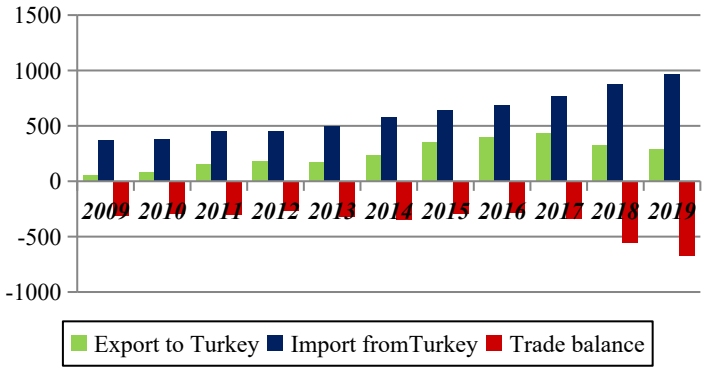
Turkey has been among the important trade partners of B&H for years. According to data from the Ministry of Foreign Trade and Economic Relations of B&H (MOFTER, 2009-2020), Turkey mostly ranked seven or eight by the share in B&H exports, and it ranked eight by the share in B&H imports, except in 2019, when it reached rank six. In the observed period, Turkey's average share in B&H exports amounted to 2.58%, and its average share in B&H imports 3.68% (Table 2).

8 The area of Turkey amounts to 785,347 km2, while the area of B&H only 51,209 km2 (Britannica, 2021); population of Turkey is 83,155 million and population of B&H is 3,301 million; GDP of Turkey amounts to 760.94 bil. USD and GDP of B&H amounts to 19.86 bil. USD (IMF, 2019).

9 Turkey is significantly better ranked by the Global Competitiveness Index (GCI) than B&H - at 61st place among 141 countries (WEF, 2019), and by share in the world exports - at 29th place (WTO, 2019), while B&H ranks 92 and 104 respectively. The country also has a higher value of the Economic Complexity Index (ECI) - 0.60 (rank 39) compared to 0.52 of B&H (rank 43) (OEC, 2018). For a detailed insight into trade performance and efficiency of Turkey, especially in trade with its main partners, some studies such as Demir, Utkulu and Bilik (2019), the EC trade analysis etc. should be consulted (see the list of references).

Trade in goods between B&H and Turkey continuously increased in the observed period and, upon reaching the value of around 1.2 bil. BAM in 2019, was three times greater than in the beginning of the period. The increase in trade resulted both from the increase in exports and imports of B&H, with exports increasing faster. Compared to 2009, the value of exports grew five times, while the value of imports grew three times. Export-import coverage in B&H increased from the level of 14% to the level of 58% in 2016 (Table 2). However, the difference between imports and exports is still great, which generates a prominent B&H trade deficit.

Graph 1: Trends of B&H Trade Flows with Turkey, in mil BAM (2009-2019)



Source: *Prepared by authors on the basis of trade data from BHAS*

Due to the change in the export trend after 2017, which began to decrease while imports continued to rise (Graph 1), the B&H trade deficit with Turkey entered the growth zone again, while export-import coverage decreased to around 30% in 2019. According to data from the MOFTER, Turkey's share in B&H trade deficit increased from 4.50% on average to 7.48% in 2018 and 8.39% in 2019 and was mostly made up of industrial products.

Table 1: Trade Performances of B&H in Trade with Turkey, 2009-2019

Description	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Average
Export to Turkey, mil BAM	51.85	81.66	150.05	182.87	174.69	234.39	354.63	401.05	431.10	323.22	292.55	243.46
Export to Turkey, %	0.94	1.15	1.83	2.33	2.08	2.70	3.95	4.26	3.90	2.72	2.55	2.58
Import fromTurkey, mil BAM	366.82	379.08	450.11	449.51	493.28	582.10	644.61	687.18	766.58	874.33	964.62	605.29
Import fromTurkey, %	2.97	2.78	2.90	2.95	3.25	3.59	4.07	4.26	4.23	4.54	4.95	3.68
Trade balance, mil BAM	-314.97	-297.42	-300.06	-266.63	-318.60	-347.71	-289.98	-286.14	-335.48	-551.10	-672.07	-361.83
Total bilateral trade,mil BAM	418.67	460.74	600.16	632.38	667.97	816.49	999.24	1.088.23	1.197.67	1.197.55	1.257.18	848.75
Export-import coverage, %	14.14	21.54	33.34	40.68	35.41	40.27	55.01	58.36	56.24	36.97	30.33	38.39

Source: *Authors' own calculation based on trade data from BHAS*

Table 2: Product Export and Import Concentration of B&H in Trade with Turkey

Index	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Change 2009/2019
$CR_{X(4),}$ %	58.67	61.74	75.87	68.21	64.27	51.47	63.87	59.32	63.50	65.62	67.19	↑ concentration
$CR_{M(4),}$ %	21.12	22.18	19.15	18.25	17.61	17.49	17.00	17.67	17.74	17.48	17.63	↓ concentration
HHI_X	0.12	0.13	0.29	0.19	0.10	0.11	0.14	0.14	0.16	0.14	0.17	↑ concentration
HHI_M	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	↓ concentration

Source: *Authors' own calculation based on trade data from BHAS*

Table 3: Revealed Comparative Advantages (BI) of B&H in Trade with Turkey

BI	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Max BI index (SITC product group)	102.55 (223)	85.46 (268)	54.01 (896)	26.75 (612)	40.74 (686)	36.04 (041)	25.34 (011)	23.32 (041)	25.47 (011)	36.67 (011)	35.49 (041)
Number of BI>1 items	33	36	26	25	26	30	26	27	28	33	35
Number of BI>4 items	17	14	17	14	13	16	15	15	15	16	16
Export of top 4 BI, %	13.63	28.97	1.40	53.06	27.14	17.02	57.69	49.91	48.52	41.17	37.23

Source: *Authors' own calculation based on trade data from BHAS*

Concerning the product structure of exports, the following five product groups had the greatest average export share: 421 Fixed vegetable fats and oils (17.76%), 282 Ferrous waste and scrap (14.69%), 641 Paper and paperboard (8.90%), 011 Meat of bovine animals, fresh, chilled or frozen (5.72%) and 041 Wheat (including spelt) and meslin, unmilled (5.19%). The export structure changed compared to the beginning of the period in favor of the lower value-added products.

The import sectoral structure was relatively stable in the observed period[10]. Most of products on the top 10 list pertain to textile. The following five product groups had the greatest average share in B&H imports: 775 Household-type, electrical and non-electrical equipment, n.e.s. (5.53%), 845 Articles of apparel, of textile fabrics, n.e.s. (5.29%), 893 Articles of plastics, n.e.s. (4.00%), 842 Women's or girls' clothing of textile fabrics, other than knitted or crocheted goods (3.35%) and 542 Medicaments, including veterinary medicaments (2.78%).

The total share of top four export product groups (export concentration ratio - CR) varied in the interval between 51.47% and 75.87%. Comparison of the CR in 2009, when it amounted to around 58.7% to 2019, when it amounted to 67.2%, reveals the increase in the export product concentration in B&H's trade with Turkey. HHI also indicates an increase in export product concentration, from the level of 0.12 to that of 0.17. However, HHI varied from 0.29 in 2009 to only 0.10 in 2013, when it began to rise again. (Table 3) The import share of the top four product groups amounted to 21.1% in 2009 and 17.6% in 2019, while HHI in imports amounted to 0.02 almost during the whole period. Both indices - CR and HHI - indicate a significantly lower degree of product concentration in imports compared to exports and a decreasing trend.

Bilateral RCA index revealed comparative advantages of B&H in more than seven times smaller number of industries compared to the number of industries with comparative disadvantages - on average, in only 30 out of 249 industries where trade with Turkey was registered. The number of industries with B&H's comparative advantages varied within the interval 25-36 in the observed period, reaching the second largest number in 2019 - 35 (Table 4). On average, 15 industries have a prominent comparative advantage (BI>4). The highest average values of BI were observed in the following groups: wheat and meslin, wool and other animal hair, oil seeds and oleaginous fruits, maize, zink, meat of bovine animals, and fixed vegetable fats and oils[11] (Graph 2).

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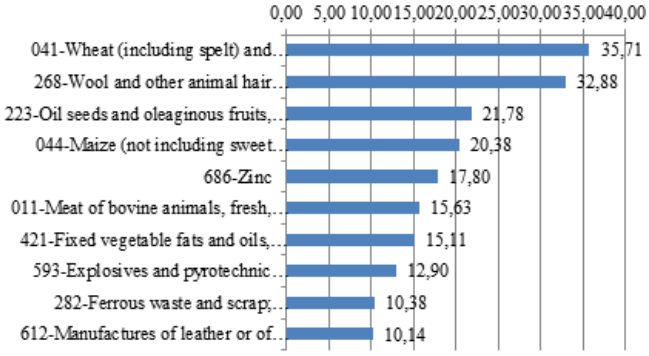
10 Seven product groups among the top ten ranked by import share appeared in almost all years: 893, 775, 845, 842, 542, 057 and 659.

11 Among the listed groups, the greatest significance for exports to Turkey, on average, was observed in fixed vegetable fats and oils (17.76%).

Graph 2: Top 10 Industries with Comparative Advantage of B&H (Average BI, 2009-2019)

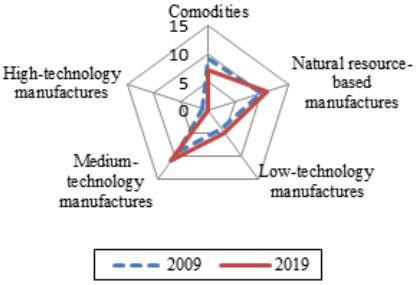


Source: *Authors' own calculation on the basis of trade data from BHAS*

Compared to 2009, in 2019 B&H gained the comparative advantage with the value of BI>4 in 12 new product groups but at the same time lost or significantly decreased the comparative advantage in 11 product groups. Only 5 product groups (041, 268, 593, 671, 742) kept comparative advantages on the list of top BI values.

Comparative advantages of B&H on the Turkish market are mostly seen in natural resources based manufactures and medium technology manufactures industries (11 groups in each category), followed by primary products/commodities12 (9). In principle, the situation has not significantly changed with respect to the classification of industries compared to the beginning of the past decade. (Graph 3)

Graph 3: Industries with Advantage of B&H by Technological Intensity (2009, 2019)



Source: *Authors' own calculation on the basis of trade data from BHAS*

Trade with Turkey is almost completely inter-industry and ranged around 0.06 on average. It is almost seven times less than the share of IIT in B&H's total trade with the world, which amounted to 0.40 on average (Table 5). There were no significant changes in IIT share at the aggregate level in the observed period.

12 "Commodities" refers to primary products and resource-based (agro-based) products other than resource-based manufactures.

Table 4: IIT Intensity (GL Index) in B&H's Trade with the World and with Turkey

Description	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Average
GL index in total B&H trade	0.38	0.39	0.39	0.40	0.40	0.39	0.41	0.42	0.44	0.43	0.43	0.41
GL index in trade with Turkey	0.08	0.06	0.04	0.04	0.04	0.06	0.06	0.06	0.06	0.07	0.08	0.06

Source: *Authors' own calculation based on trade data from BHAS*

Table 5: Number of Product Groups by IIT Categories in Trade of B&H with Turkey

Number of items with specified GL index value	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Strong IIT (0.75<GL≤1.00)	7	4	5	3	3	7	2	4	4	2	6
Moderate IIT (0.50<GL≤0.75)	4	4	6	4	2	2	6	4	6	5	4
Potential IIT (0.25<GL≤0.50)	4	8	9	7	8	7	8	10	5	8	9
Very low IIT (0.00<GL≤0.25)	62	61	61	59	70	62	79	94	79	76	79
OWT (GL=0.00)	125	126	127	131	123	136	112	101	126	128	116

Legend: GL - Grubel-Lloyd index of IIT; OWT - one-way trade i.e. completely inter-industry trade;

Source: *Authors' own calculation based on trade data from BHAS, following interpretation of IIT intensity developed by Qasmi and Fausti (2001)*

Table 6: Number of Product Groups with Horizontal and Vertical IIT in Trade of B&H with Turkey

Number of GL>0.50 items	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Items with HIIT	3	0	0	1	0	0	0	1	2	2	1
Items with VIITh	2	5	5	2	4	3	5	3	4	4	4
Items with VIITl	7	8	6	4	2	7	3	4	4	1	5
Total number of items	12	13	11	7	6	10	8	8	10	7	10

Legend: HIIT - number of product groups with horizontal IIT; VIITh - number of product groups with vertical IIT of high quality; VIITl - number of product groups with vertical IIT of lower quality;

Source: *Authors' own calculation based on trade data from BHAS*

Out of the 249 product groups where exports and/or imports between B&H and Turkey was recorded, in as many as 125 groups only the one-way trade was observed in 2009. The number decreased to a certain degree and was 116 at the end of the period. The number of product groups where IIT dominated (either strong or moderate), i.e. where the value of GL>0.50, was extremely small and ranged between min. 6 (2013) and max. 13 (2010). (Table 6) Relative unit value indices point out the dominance of product groups with vertical IIT of lower-quality B&H exports (Table 7). Besides, the structure of the list of product groups with the highest GL indices is almost different in the beginning from that at the end of the analyzed period (Table 8)[13].

Table 7: The Highest IIT Intensity, by Product Groups (2009, 2019)

SITC Product Group, 2009	GL	SITC Product Group, 2019	GL
792-Aircraft and associated equipment; parts thereof	0.98	269-Worn clothing and other worn textile articles	1.00
057-Fruit and nuts, fresh or dried	0.91	058-Fruit, preserved, and fruit preparations (excluding fruit juices)	0.95
695-Tools for use in the hand or in machines	0.91	612-Manufactures of leather or of composition leather, n.e.s.	0.87
742-Pumps for liquids, liquid elevators; parts thereof	0.84	811-Prefabricated buildings	0.87
522-Inorganic chemical elements, oxides and halogen salts	0.84	098-Edible products and preparations, n.e.s.	0.83
292-Crude vegetable materials, n.e.s	0.81	821-Furniture and parts there of	0.77
515-Organo-inorganic compounds, nucleic acids and their salts	0.78	248-Wood, simply worked, and railway sleepers of wood	0.56
512-Alcohols, phenols, phenol-alcohols, and their derivatives	0.57	725-Paper mill and pulp mill machinery, paper cutting machines; parts thereof	0.56
058-Fruit, preserved, and fruit preparations (excluding fruit juices)	0.55	746-Ball- or roller bearings	0.52
598-Miscellaneous chemical products, n.e.s.	0.55	743-Other pumps; compressors, fans, ventilating or recycling hoods; parts thereof	0.51

Source: *Authors' own calculation based on trade data from BHAS*

13 However, four product groups in the top 10 list of GL index value in 2019 are also on the list of groups with revealed comparative advantages in the same year.

The highest average shares of IIT in B&H's trade with Turkey are in the following product groups: 058 Fruit, preserved, and fruit preparations (excluding fruit juices), 695 Tools for use in the hand or in machines, and 743 Other pumps; compressors, fans, ventilating or recycling hoods; parts thereof.

4. CONCLUDING REMARKS

In the past decade, B&H improved its performances in trade with Turkey to a certain degree, but the present country's position is still unsatisfactory. In most of the observed period, the trade between the two countries increased, with faster growth of B&H exports than imports, and an increase in the export-import coverage. However, the trade deficit with Turkey is still significant, and it has been increasing again over the past few years due to a negative change in B&H's export trend. Besides, the export structure reveals a high degree of concentration, based on a significant export share of several product groups, mostly low value-added.

Comparative advantages of B&H were revealed in a small number of industries (an eighth of the total number of industries where trade with Turkey was registered). The pattern of comparative advantages still reflects the traditional product structure based on the natural resource-based product groups and medium technology manufactures, B&H has no comparative advantages in the sophisticated technology-intensive industries.

The pattern of intra-industry specialization and trade, which is considered a measure of diversification and technological sophistication of a given country's industries, points to similar conclusions as to the pattern of the revealed comparative advantages. B&H's trade with Turkey reveals the extreme dominance of the inter-industry trade, particularly the one-way trade. The intra-industry trade prevails in a small number of industries and is mostly of the vertical type, with exports of lower-quality products from B&H. The correspondence between some product groups with the highest IIT intensity and some product groups with comparative advantages of B&H was also observed, which implies that B&H conceded a significant part of the local market to Turkish exporters even in the products where the country has comparative advantages. The characteristics of the patterns of B&H's intra-industry trade flows to support the non-convergence of the country's industry structure with the structure of its trade partner, and insufficient competitive ability of a large number of industries.

The findings of the research lead to the conclusion that B&H has not made use of the trade potential of the free trade agreement which allows B&H free access to the huge Turkish market. On the contrary, the findings confirmed the theoretical thesis on trade liberalization effects, according to which the liberalization in the trade between

asymmetric countries in terms of the market size and efficiency will result in the benefit for a larger and more efficient country.

Results of this insight into these bilateral trade patterns could be used for strategic planning of the development of individual B&H industries. If complemented with an analysis of the degree of correspondence between Turkey's total import demand and B&H's export supply, results could also contribute to identifying B&H's industries with the potential to improve their export performance on the Turkish market.

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Amira Velić

BILATERALNI TRGOVINSKI TRENDOVI I OBRASCI BOSNE I HERCEGOVINE: SLUČAJ TRGOVINE SA TURSKOM

SAŽETAK:

Trgovinski obrazac zemlje odražava specijalizaciju ponude (izvoza) i potražnje (uvoza), što ukazuje na nacionalne performanse i konkurentnost na stranom, kao i na domaćem tržištu. Uz primjenu dva različita koncepta trgovinske specijalizacije (jednog zasnovanog na tradicionalnoj teoriji komparativnih prednosti i drugog zasnovanog na modernim teorijama međunarodne trgovine), upotpunjenu analizom izvozno-uvoznih tokova i odnosa, rad ima za cilj identifikovanje karakteristika položaja Bosne i Hercegovine (BiH) u njenoj bilateralnoj trgovini. U radu se istraženi trendovi, obrasci i varijacije u trgovini B&H sa Turskom tokom jedanaestogodišnjeg vremenskog perioda (2009-2019.), sa posebnim naglaskom na identifikovanje industrija s otkrivenim komparativnim prednostima i industrija sa dominacijom IIT. U analizi su korišteni različiti pokazatelji kao što su indeksi kompozicije izvoza, sektorske diverzifikacije/koncentracije, intenziteta i strukture IIT, te kvaliteta izvoza i uvoza na osnovu relativnih jediničnih vrijednosti i klasifikacije djelatnosti prema tehnološkom intenzitetu. Rezultati istraživanja ukazali su na nepovoljan položaj BiH u trgovini sa Turskom, bez bitnijih promjena u posmatranom periodu. Permanentno je prisutan trgovinski deficit BiH, uz nisku pokrivenost uvoza izvozom, te pojavu opadajućeg izvoznog trenda. Analiza je utvrdila viši stepen izvozne robne koncentracije prevashodno na proizvode male dodate vrijednosti, te komparativne prednosti BiH u manjem broju industrija, uglavnom resursno zasnovanih ili srednje-tehnološki intenzivnih. Trgovina sa Turskom izrazito je inter-industrijska, posmatrano na agregatnom i industrijskom nivou, što takođe upućuje na nedovoljnu konkurentnost BiH u analiziranim trgovinskim odnosima.

Ključne riječi: *trgovinski obrazac, inter-industrijska trgovinska specijalizacija, intra-industrijska trgovinska specijalizacija, Bosna i Hercegovina, Turska*

JEL: *F10, F14, L60, O52*

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THE EFFECT OF MATERIALISTIC AND NONMATERIALISTIC MOTIVATIONAL FACTORS TO EMPLOYEES' COMMITMENT TO WORK

ABSTRACT

The success of each business relies on the employees' commitment to work, i.e., how and in which way employees perform their work. When consumers are offered the same or similar products produced by different companies and at different prices, and when the company's business result greatly depends on the quality of the work done, company management is more interested in securing its employees' full dedication to work. The generally accepted phrase "you get what you pay for" encouraged this research, whose purpose is to determine the strength of the relationship between materialistic and nonmaterialistic motivational factors to employees' commitment to work.

This research starts with the assumption that materialistic factors of motivation are more important motivational factors for employees when compared to nonmaterialistic ones. Listed indicators of motivational factors represent independent variables, while the dependent variable represents the indicator 'work satisfaction', which determines the level of employees' commitment to work.

The research had 147 participants who work in companies from different industries and different sizes. According to the Likert scale, a structured questionnaire was used to measure the employees' attitudes. Various methods for data processing in Statistical Package for the Social Sciences (SPSS) and Smart PLS3 program were used: Descriptive statistics of the sample (SPSS); Exploratory factor analysis - PCA analysis of principal components (SPSS): Factor analysis - a test of validity and confidence of the instruments (SmartPLS3); Bootstrapping analysis - testing of the hypothesis (SmartPLS3).

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The conducted research shows that nonmaterialistic motivational factors, including Interpersonal relations and advancement, statistically significantly influence satisfaction at work, i.e., employees' commitment to the work.

Key words: *Motivation, commitment to work, employees, materialistic factors, nonmaterialistic factors.*

JEL: *M12, M14.*

1. INTRODUCTION

The company business results depend on various factors of which business cost-effectiveness holds the most significant one. It results from the fact that each company tends to focus on profit maximization and to minimize invested resources that make the expenses. The company can achieve such an approach through the effective and efficient human resources work involved in the production process. A generally accepted view among numerous authors is that human resources represent the key generator of success or failure of a company, so great attention is devoted to human resources' motivation in the last decade.

Although numerous books were written regarding employees' motivation and various researches conducted, there is no consensus among the authors regarding the factors that hold the most important place in the employees' perception.

Motivation as a term is defined as a psychological state that results from the influence of internal and external factors that stimulate, direct, and maintain the behavior (Sikavica et al., 2000) of employees and other people, at which the effect of motivational factors is directed.

Motivational factors that influence employees' behavior are divided into external, i.e., materialistic factors, including salary and reward, and nonmaterialistic factors, including interpersonal relations, professional advancement, supervisor approach, career development, and job satisfaction.

Interaction of different motivational factors is divided into three groups: 1) Individual characteristics, including needs, attitudes, and employees' interests; 2) Characteristics of a job, including the complexity of the job, autonomy in job performance, and complexity of job performance; 3) Organisational characteristics including rules, procedures, politics, management's practice and reward system (Buble, 2009).

Numerous researches conducted on the topic of the influence of motivation on the results of employees' work confirm the existence of a significant relationship between employee satisfaction and financial results companies achieve, which is why motivation and employee satisfaction represent an inexhaustible topic of various types of research (Freeman, 1997).

There are numerous definitions of the term 'motivation' available in the literature, and each of them characterizes this term in its way. They all have in common that motivation represents a 'process' where employees face different factors, which in most cases are divided into internal motivational factors and external motivational factors.

Thus, the process of employee motivation represents the most efficient manager's tool, but whether it will be efficient depends primarily on the manager's estimations. The process of employee motivation represents a significant challenge for managers because motivational factors do not have the same strength on the positive employee's job perception. In fact, each employee represents an individual who, in different ways, perceives stimulus from the environment. Thus, it is up to company managers to create and continuously improve motivational processes, keeping in mind its adaptiveness to employees as individuals.

The purpose of this paper is to determine the existence of differences between external, i.e., materialistic motivational factors and internal, i.e., nonmaterialistic motivational factors regarding their effect on employees' commitment to work.

2. Literature review

The term 'motivation' comes from the Latin word 'movere,' which means 'moving.' It refers to an individual's readiness to act (Rahimić, Resić, and Kožo, 2012). So, in the case of employee motivation, the term mentioned above indicates a process which due to exposure of employees to certain factors, changes their existing perception regarding the job, depending on whether these factors are motivational or demotivational to employees; this perception regarding a job could represent a positive or a negative moving.

Employee motivation has always been at the center of attention when it comes to analyzing a company's performance, organizational behavior, and leadership because motivated employees mean a successful company. It is generally recognized that an organization's competitive advantage depends on a skilled workforce, advanced technology proficiency, exemplary customer service, and higher quality products (O'Reilly III and Pfeffer, 2000, according to Stajkovic and Luthans, 2003). Since all of these activities depend much on employee motivation, one concludes that human resources represent a critical factor in having a distinct competitive advantage (Argyris, 1993, according to Stajkovic and Luthans, 2003). Several authors concluded that even talented people cannot deliver to their potential without motivation and that people who are motivated tend to perform way above the level expected of their intelligence and academic ability (Bateman and Snell,1999; Germann, 2004; Snell, 1999; Woodall et al., 1997 according to Seiler, Lent, Pinkowska and Pinazza, 2012).

Thus, many research types have been conducted on employee motivation, trying to identify and establish a relationship between motivation and its initiators.

As a result of the development of interdisciplinary studies - biology, psychology, neuroscience, and others, researchers have closely investigated the human brain and developed different theories regarding human motivation.

As employee motivation has been a fruitful topic for research and as the world started to develop, numerous other authors further developed and improved the 'traditional' theories supporting their empirical research findings. Norhia, Groysberg, and Lee (2008) concluded that a company could improve overall employee motivation by satisfying four drives: drive to acquire (food, housing, social status, money), drive to bond (causing positive emotions like love and caring, making employees proud of being a part of a company), drive to comprehend (employees are motivated when their jobs are challenging), and drive to defend (when met leads to the feeling of security and confidence, and when not leads to negative emotions). These drives are independent, cannot be put in hierarchical order, and met by distinct organizational leavers, such as reward system, culture, job design, performance management, resource allocation processes, and the direct manager's role. On the other side, a great deal of attention was devoted to finding out which of the following two factors motivates employees: intrinsic or extrinsic factors. Intrinsic motivation entails doing something out of pure interest and enjoyment, while extrinsic motivation represents doing something to avoid negative results or obtain rewards (Levesque, Copeland and Pattie 2010).

Since materialism has been propagated to us by almost every media outlet, it is only natural to believe that materialistic factors, such as salary and reward, influence motivation. The idea that financial incentives motivate employees has both its opponents and proponents. Baker et al. (1988) conclude that pay-for-performance systems are even too effective in motivating people to do as they are told. These incentives satisfy at the same time several objectives: they support social status and provide recognition, they help people meet their basic needs, and serve multiple functions (Opsahl and Dunnette,1966; Steers, Porter, and Bigley, 1996, according to Jenkins, Mitra, Gupta and Shaw, 1998). Thus, many managers tend to focus solely on money as a means of motivation, which in the last years seems to have less importance than employees, especially in developed economies.

Studies revealed that apart from being positively related to performance, financial incentives need to be carefully designed and integrated into organizational behavior to avoid undesirable outcomes (Jenkins, Mitra, Gupta, and Shaw, 1998). These outcomes entail encouraging unethical and counterproductive employee behavior, poor performance because these incentives do not improve employee's skills, knowledge, or abilities unless invested in training, and unchanged quality of the job (Dierdorff

and Surface, 2008; Grant and Parker, 2009; Kerr, 1975, according to Aguinis, Joo and Gottfredson, 2013). Other studies find that the rewards are useful for achieving temporary compliance since they merely and temporarily change what we do. Therefore, managers should not use rewards to motivate people but use nonmaterialistic factors, such as interpersonal relations and supervisor approach. By embracing these factors, employers enable their employees to participate in decision-making, assure them that they will not be punished for unpopular ideas (Stewart et al., 1993). Besides, financial incentives can only reduce job dissatisfaction but not motivate employees (Herzberg, 1968, according to Jenkins, Mitra, Gupta, and Shaw, 1998). Apart from being good motivators, they encourage job functions and their long-term relationship with employers (Dewhurst, Guthridge, and Mohr, 2009). Therefore, contemporary managers should shift their focus from materialistic factors to introducing the nonmaterialistic ones to improve the overall job satisfaction and company culture, and the quality of the work done.

3. Methodology

3.1. Definition of the problem and the subject of the research

Technological achievements in the world move the boundaries towards the ideal every day and become an inexhaustible source for improving its performance. Plants and technological equipment are available to each company, based on which one can assume that the companies are equally competitive. However, in the real world, a company's competitiveness is not attained by acquiring the equipment and plant because both of them have a value based on the value-added they have for the company. Without human resources' knowledge and abilities, both plants and equipment are just a pile of useless and expensive things.

Thus, the key driving force of each business's success is the knowledge, abilities, and skills that human resources employed by the company have. Unlike the plants and equipment, human resources are social human beings who have their needs, which move to unimaginable proportions in time. Thus, it is imperative to establish a balance between the needs of employees and companies' business objectives.

Numerous researchers identify the factors that have a motivational role in establishing balance and company business goals. All authors usually agree that motivational factors can be divided into internal and external ones, i.e., nonmaterialistic and materialistic factors.

The subject of this research, in an operational sense, represents employees' attitudes regarding the influence of materialistic and nonmaterialistic motivational factors on job satisfaction, i.e., employees' dedication to the performed work.

3.2. Research objectives

Research results should achieve the following objectives:

- Establish the strength of the influence of materialistic and nonmaterialistic factors on employee's job satisfaction.
- Establish the relationship between the materialistic and nonmaterialistic variables of motivational factors on employee job satisfaction.
- Establish which variables of the materialistic and nonmaterialistic motivational factors statistically significantly influence employee's job satisfaction.

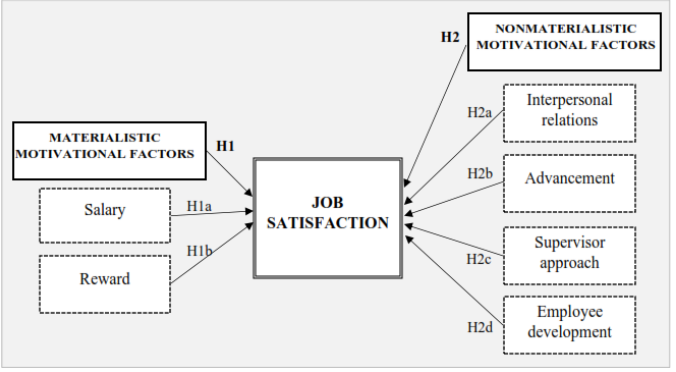
3.3. Research's Hypothesis

This paper assumes that materialistic motivational factors, including salary and reward, are more important motivational factors for employees than nonmaterialistic motivational factors, including interpersonal relations, advancement at work, supervisor approach, and employee development.

Based on the listed premises, the following research hypotheses are defined:

- H1 - Materialistic motivational factors influence employees' job satisfaction.
  - H1a - Salary influences employees' job satisfaction.
  - H1b - Reward influences employees' job satisfaction.
- H2 - Nonmaterialistic motivational factors influence employees' job satisfaction
  - H2a - Interpersonal relations influence employees' job satisfaction.
  - H2b - Advancement influences employees' job satisfaction.
  - H2c - Supervisor approach influences employees' job satisfaction.
  - H2d - Employee development influences employees' job satisfaction.

Figure 1: Model of research hypotheses



3.4. Research instrument

For the purpose of primary data collection, a questionnaire was created to measure employees' attitudes by applying a Likert scale from one to five (1 - strongly disagree, 2 - disagree, 3 - neither agree nor disagree 4 - agree, 5- strongly agree). The questionnaire is composed of seven batteries within which there are five particles expressed as a statement. Batteries 'salary' and 'reward' characterize materialistic, i.e., external motivational factors, while batteries 'interpersonal relations,' 'advancement at work,' 'supervisor approach,' 'career growth,' characterize nonmaterialistic, i.e., internal motivational factors. The aforementioned indicators represent independent variables, while the indicator 'job satisfaction' represents the dependent variable.

The questionnaire has 30 particles representing statements regarding the influence of materialistic and nonmaterialistic motivational factors on employees' job satisfaction. Job satisfaction is measured through the application of five particles within the questionnaire.

3.5. Research methods

Through the structural instrument for data measurement, a total of 8 variables are measured, of which two are categorical and six numerical continuous variables. On the sample of 147 participants whose sex and size of the firm they work at are known, measurement of 'job satisfaction' was conducted and six materialistic/nonmaterialistic indicators that could theoretically have the same effect.

For the purpose of statistical analysis, appropriate methods in the Statistical Package for Social Sciences (SPSS) and Smart PLS3 were used:

- Descriptive statistical analysis (SPSS),
- Exploratory factor analysis - PCA analysis of principal components (SPSS),
- Factor analysis - a test of validity and reliability of the instruments (Smart PLS3),
- Bootstrapping analysis - hypothesis testing (Smart PLS3).

The results of the analysis are shown in the section called Interpretation of the results.

4. Interpretation of the results

The questionnaire was mailed to 100 email addresses and was posted on Facebook, so the participants could download the link and send filled-out questionnaires. At the estimated deadline for the submission, 220 questionnaires were filled out and delivered. While reviewing the questionnaires, specific illogical answers to set claims were recognized, because of which such questionnaires were removed from further data processing. Therefore, N 147 questionnaires were subject to statistical analysis according to the responders' following characteristics: M - 61.90%; F - 38.10%.

Responders' structure according to the size of the enterprise is micro enterprises - 4.76%; small enterprises - 10.69%; medium-sized enterprises - 55.78%, and large enterprises - 28,57%.

Table 1: *Structure of the sample according to the company size*

Characteristics	Category	Number	Percentage
Sex	Male	91	61.9
	Female	56	38.1
	Total	147	100.0
Number of employees in a company or institution you work at	1 - 9	7	4.8
	10 - 49	16	10.9
	50 - 249	82	55.8
	More than 250	42	28.6
	Total	147	100.0

4.1. Test of validity and confidence of the measuring instrument

For the purpose of testing the validity and confidence of the measuring instrument, exploratory factor analysis (EFA) was conducted by applying the principal component analysis (PCA). Apart from the EFA conducted using the SPSS program, additional factor analysis was also conducted using the Smart PLS program.

The principal component analysis was conducted using varimax rotation for each used scale. Dimensionality is determined by careful analysis of the factor burden of each indicator individually. Factor burdens over 0.5 per the corresponding factor are considered adequate indicators of such factors (Hair, Black, Babin & Anderson, 2010). On the other side, Ebel (1965) considers that correlation equal to or above 0.4 represents good validity. Thus, due to the low factor burden, the following indicators are labeled as invalid, and as such, are excluded from further analysis: P2, P4, N4, N5, MO3, MO4, MO5, NUP4, RZ3, ZP3.

When the 'supervisor approach' variable is in question, there was no need to exclude any indicator because all factor loads were above 0.5. The total 25 variables representing seven indicators were evaluated as valid, as shown in Table 2.

Table 2: Factor loading at an indicator level

Indicators and their variables		Factor loading ≥ 0.40						
Salary (S)		S	R	IR	A	SA	ED	JS
S1	My salary is high compared to what others get for the same job in other companies.	0.759						
S3	My workability in a great amount determines my salary in a company I work for.	0.754						
S5	I am paid fairly compared to other employees in a company I work for.	0.784						
Rewards (R)								
R1	For a job well done, I receive appropriate recognition.		0.447					
R4	Regular financial stimulations have a positive effect on my job.		0.891					
R5	The family trip award affects my job.		0.852					
Interpersonal relations (IR)								
IR1	I like the people I work with.			0.961				
IR2	A pleasure to do business with my co-workers			0.961				
Advancement (A)								
A1	My advancement abilities are limited. *				0.763			
A2	Advancement here is based on one's abilities.				0.586			
A3	Regular job promotions are a rule in this company,				0.682			
A5	It is a job with no chance of getting a promotion. *				0.868			
Supervisor Approach (SA)								
SA1	My supervisor is quite competent in his/her work.					0.658		
SA2	My supervisor was unfair to me. *					0.863		
SA3	My supervisor does not show enough interest in the feelings of the people whom he/she manages. *					0.747		
SA4	My supervisor often points out the positive qualities of the people whom he/she manages.					0.693		
SA5	My supervisor points out only the negative qualities of the people whom he/she manages. *					0.781		
Employee Development (ED)								
ED1	My job offers enough opportunity for successful career development.						0.686	
ED2	At work, I have a chance to do what I do best.						0.647	
ED4	Additional internal educations positively affect my work.						0.847	
ED5	Additional external educations positively affect my work.						0.800	
Job satisfaction (JS)								
JS1	My job is creative.							0.866
JS2	My job is fulfilling.							0.888
JS4	My job is challenging.							0.781
JS5	My job is often dull and monotonous. *							0.517
*Negative question								

The research model in this paper is tested through the multivariate method PLS-SEM (Partial

Least Squares). It is known for not requiring the variables to have a normal distribution and reaches very precise results with a small sample (Hair, Sarstedt, Ringle, Gudergan, 2017).

Barclay, Higgins, & Thompson (1995) recommend that the total number of formative indicators, i.e., the total number of paths directed to a specific dependent variable in a model, multiplied with number ten determine a minimal number of participants in a sample. According to this rule, and based on the fact that there is a total of six formative indicators in the model of this research, we conclude that the minimal number allowed for the analysis is 60 participants (6*10 = 60) and that 147 submitted questionnaires excel the required minimum. The software package SmartPLS 3.0 developed by Ringle, Wende, and Becker (2015.) was used for data processing.

The PLS Algorithm analysis confirmed the previously presented results of the PCA analysis. It showed no doubt in discriminant validity or the measuring instrument's confidence. Table 3. shows that all indicators of composite reliability, AVE value, and correlation variable are all adequate and of the appropriate value. According to Schmiedel, Brocke, & Recker (2014), the discriminant validity is ensured if the squared root of the AVE value of each variable exceeds the correlation value within the matrix. Thus, alayizing Table 3, it can be concluded that the discriminant validity is proven.

All of the composite reliabilities are above the recommended threshold of 0.7, defined in the literature (Fornell & Larcker, 1981; Hair, Black, Babin, & Anderson, 2010). Cronbach & Richard (2004) established a rule that the Alpha value has to equal to a minimum of 0.7 for the variable reliability to be accepted. Indicators of motivational factors IR, A, SA, ED, and JS undoubtedly have established internal consistency.

Regarding the indicators R (C. Alpha 0.6) and S (C. Alpha 0.65), whose value belongs to an interval of 0.6 to 0.7, which is usually regarded as debatable in the sense of internal consistency, if we take into consideration the fact that both indicators have composite reliability of 0.78 and AVE value over 0.5, there is no doubt that the internal consistency, i.e., reliability of these two indicators is satisfactory as shown in Table 3.

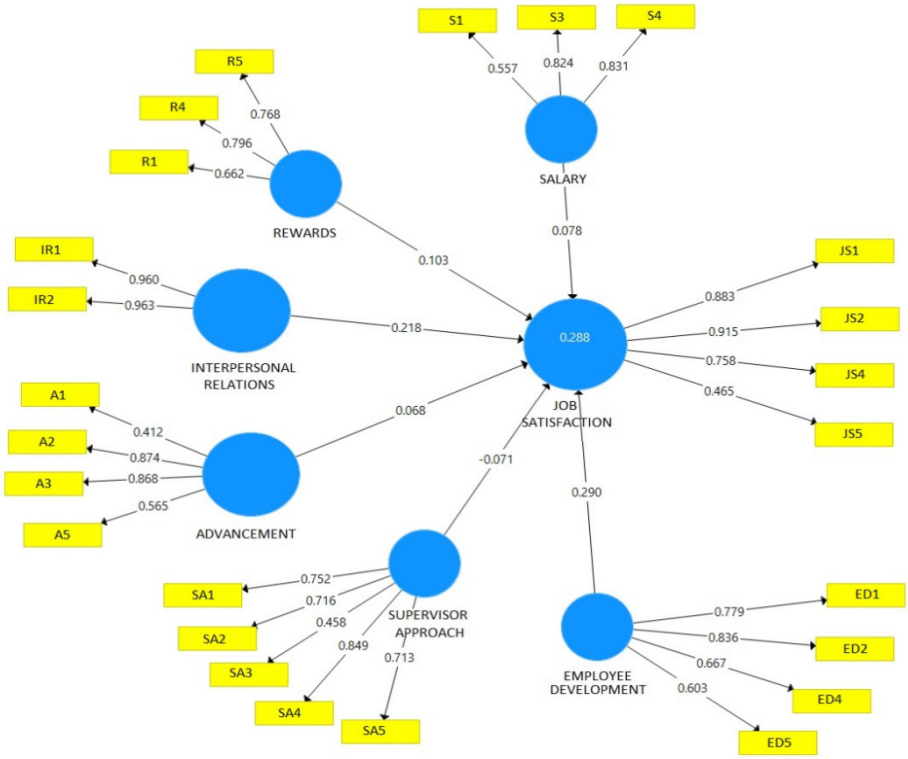
Table 3: Test of factor validity

Variable	Cronbach's Alpha	Composite Reliability	AVE Value	IR	R	A	SA	S	ED	JS
IR	0.92	0.96	0.92	0.961						
R	0.60	0.78	0.55	0.224	0.744					
A	0.75	0.78	0.50	0.367	0.341	0.708				
SA	0.81	0.83	0.50	0.433	0.309	0.444	0.709			
S	0.65	0.78	0.56	0.355	0.272	0.580	0.395	0.748		
ED	0.74	0.82	0.53	0.511	0.402	0.555	0.506	0.416	0.727	
JS	0.77	0.85	0.60	0.411	0.291	0.358	0.263	0.315	0.477	0.776

Note 1: Right side of the table diagonally shows correlation variables and square roots of AVE value Note 2: See Table 4. for the full name of the indicators of motivational factors

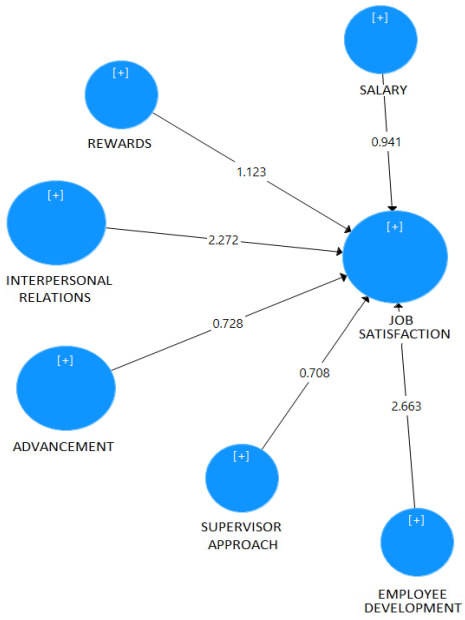
The correlation review results of all variables presenting motivational factors provide additional confirmation of previously presented PCA analysis results shown in Figure 4. In other words, all variable correlations are above 0.4, clearly confirming their validity upon measuring.

Figure 2: Correlation of variables and motivational factors



Hypotheses are tested by bootstrapping analysis in the SmartPLS program. The analysis was conducted on 10,000 subsamples to assure the best results stability, following the recommendation by Hair, Sarstedt, Ringle, & Gudergan (2017).

Figure 3: Results of the Bootstrapping analysis (t-values)



From the total six tested multiple hypotheses, two of them are accepted, while four are rejected. Results that salaries and rewards do not have a statistically significant influence on employee satisfaction clearly indicate that materialistic motivational factors are not statistically significant independent variables. Thus, Hypothesis No. 1 of this research is rejected.

On the other side, statistically significant effects of 'interpersonal relations' and 'employee development' and statistically insignificant effects of 'advancement' and 'supervisor approach' clearly lead to the conclusion that Hypothesis No. 2 of this research is partially accepted.

In short, nonmaterialistic motivational factors have a more significant influence on employee satisfaction than materialistic.

	Hypothesis	p	t	Status
H1	Materialistic motivational factors influence employees' job satisfaction.	-	-	Rejected
H1a	Salary influences employees' job satisfaction.	0.347	0.941	Rejected
H1b	Reward influences employees' job satisfaction.	0.261	1.123	Rejected
H2	Nonmaterialistic motivational factors influence employees' job satisfaction.	-	-	Partially accepted
H2a	Interpersonal relations influence employees' job satisfaction.	0.023*	2.272*	Accepted
H2b	Advancement influences employees' job satisfaction.	0.466	0.728	Rejected
H2c	Supervisor approach influences employees' job satisfaction.	0.479	0.708	Rejected
H2d	Employees' development influences employees' job satisfaction.	0.008*	2.663*	Accepted
*Statistically significant effects on the reliability interval of 95%				

5. CONCLUSION

Although this paper started with the assumption that materialistic factors ('salary' and 'rewards') more significantly influence job satisfaction, and therefore influence the greater employee's job dedication, the conducted research results rejected the assumption mentioned above.

According to the presented results of bootstrapping analysis of the t-value, it can be confirmed that nonmaterialistic motivational factors 'interpersonal relations' and 'employee development' statistically significantly influence job satisfaction, and therefore affect the greater employee's work dedication.

Contrary to this study's results, John R Deckop, Carole L Jurkiewicz, and Robert A Giacalone confirmed the hypothesis that material factors affect employee personal well-being. Such different results can be interpreted by differences in mentality and sincerity of the respondents' answers in answering the questionnaire, so it cannot be established with certainty that nonmaterialistic factors are more important for employee commitment than material ones. A recommendation to the management is to consider both nonmaterialistic and materialistic factors when creating and implementing human resources policies.

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UTJECAJ MATERIJALNIH I NEMATERIJALNIH MOTIVACIJSKIH FAKTORA NA POSVEĆENOST POSLU ZAPOSLENIKA

SAŽETAK

Uspješnost svakog preduzeća zasniva se prije svega na posvećenosti njegovih zaposlenika poslu, odnosno kako i na koji način zaposlenici obavljaju svoj posao. U vremenu kada su potrošačima na raspolaganju isti ili slični proizvodi od različitih preduzeća po različitim cijenama, te kada rezultat poslovanja preduzeća zavisi u najvećoj mjeri od kvaliteta obavljenog posla njegovih zaposlenika, sve je veći interes menadžmenta preduzeća da osigura maksimalnu posvećenost svojih zaposlenika prema poslu. Općeprihvaćena sintagma kolika plaća toliko rada potaknula je ovo istraživanje, čija je svrha utvrditi jačinu veze između materijalnih faktora motivacije i nematerijalnih faktora motivacije zaposlenika, kada je u pitanju njihovo obavljanje posla.

U ovom radu se polazi od pretpostavke da su materijalni faktori motivacije značajniji motivirajući faktori za zaposlenike u odnosu na nematerijalne faktore. Navedeni indikatori motivirajućih faktora predstavljaju nezavisne varijable, dok zavisnu varijablu predstavlja indikator „zadovoljstvo poslom", koje u konačnici određuje nivo posvećenosti zaposlenika prema poslu koji obavljaju.

U istraživanju je učestvovalo 147 ispitanika, koji rade u preduzećima različite djelatnosti i veličine preduzeća. Za prikupljanje podataka korišten je strukturirani upitnik, a primjenom Likertove skale od 1 do 5 mjeren je stav ispitanika. Za obradu prikupljenih podataka primijenjene su odgovarajuće metode u Statističkom paketu za društvene nauke (SPSS) i Smart PLS3 programu: Deskriptivna statistika uzorka (SPSS); Eksploratorna faktorska analiza - PCA analiza glavnih komponenti (SPSS); Faktorska analiza - provjera validnosti i pouzdanosti instrumenta (SmartPLS3); Bootstrapping analiza - testiranje hipoteza (SmartPLS3).

Rezultati provedenog istraživanja pokazuju da nematerijalni motivirajući faktori, od kojih su međuljudski odnosi i razvoj karijere zaposlenika statistički značajno utječu na zadovoljstvo poslom, odnosno posvećenosti poslu, koji obavljaju zaposlenici.

Ključne riječi: *motivacija, posvećenost poslu, zaposlenici, materijalni i nematerijalni faktori*

JEL M12, M14.

Almir Alihodžić[1]

DOES THE OLIGOPOLISTIC POSITION OF BANKS AFFECT THE PERFORMANCE OF THE BANKING SECTOR IN THE FEDERATION OF BOSNIA AND HERZEGOVINA?

ABSTRACT:

The level of banking concentration has increased significantly in the banking sector of Bosnia and Herzegovina as a result of the successful completion of privatization, the formation of new banks, the slow transition and rapid liberalization. Rapid liberalization has introduced strong competition in the domestic banking sector on the one hand, while there has been an increased concentration of some larger banks in the system. The main goal of this research will be to analyze the correlation between the basic measures of the oligopolistic position of banks and their impact on improving or deteriorating the performance of domestic banks, such as return on assets (ROA), return on equity (ROE) and net interest margin (NIM). The survey period covers the years from 2008: Q1 to 2020: Q4 on a quarterly basis. The following variables were used as independent variables in the model: HHI market concentration index in the context of loans, share of foreign banks in the total ownership structure of banks (FB), bank size (BS) and growth rate of total loans (GRTL).The interdependence of variables in this study was tested via the OLS regression model. The results showed that the foreign-owned Banks (FB) variable has a positive impact on the variable return on Assets (ROA), while the variables bank size (BS) and market concentration index for loans (HHI) have a negative impact. The result also showed that the two variables the growth rate of total loans (GRTL) as well as foreign-owned banks (FB) have a positive impact on the variable return on equity (ROE), while the variables market concentration index for loans (HHI) and bank size (BS) have a negative effect. The third result is that the variable net interest margin (NIM) has the strongest positive impact on the two variables foreign-owned banks (FB) and credit growth rate (GRTL), while concentrations for credit placements (HHI) and bank size (BS) have a negative effect.

Keywords*: Performance, privatization, concentration, banks in Federation of B&H.*

JEL: *G21, G34, C51.*

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1. Introduction

Commercial banks are financial institutions that provide funds transfer services, from savings units for investment services. They make a profit by providing loans based on deposits received. Banks offer a large number of products to both individuals and companies. As one of the most important factors in financial intermediation, commercial banks represent a crucial part of the growth of economies around the world.

The financial system in Bosnia and Herzegovina has been liberalized. The slow transition and rapid liberalization have introduced strong competition in the domestic banking sector, where at the same time there has been a strong concentration in the banking sector. Underdeveloped countries are characterized by low gross domestic product, low credit growth rate of the real sector, lack of appropriate markets, and lack of appropriate regulations and skills. A special contribution of this research is reflected in the testing of profitability determinants from the point of view of the oligopolistic position of banks in Bosnia and Herzegovina, on the one hand, and on the other hand the lack of studies examining the impact of the oligopolistic position of banks on their profitability.

The theory of market power and the theory of efficient structure explained in detail the relationship between the market structure and the performance of banks. Structure Conduct-Performance hypothesis (SCP) and Relative Market Power hypothesis (RMP) studied Market Power (MP) theory, and the similarities between x-efficiency (XE) and scale efficiency (XE).

The aim of this research is to enrich the available literature in this area, exploring the impact of certain concentration measures that accompany the existence of an oligopoly on the market and their impact on the profitability of BH banks during the period: 2008: Q4 - 2020: Q4. During the earlier and observed period, a large number of banks experienced success, while a small number of banks faced problems, mainly domestic banks.

The paper consists of six parts. The first part is an introduction. The second unit is a literature review for some studies that examined the relationship between the oligopolistic position of banks and the performance of banking sector.

The third part analyzes a selected group of indicators of the health banks in B&H. The fourth part describes the chosen model and estimation technique, namely the Random effect model and the Fixed effect model through the application of the Hausman test. The fifth part deals with the data necessary for the analysis. The six part elaborates on the results of the research with recommendations.

2. A Literature Review

Goldberg and Rai (1996) investigated in their study whether there is a correlative relationship between concentration and profitability. They concluded there is no established correlation between concentration and profitability in the professional literature, while on the other hand, half of the studies state that there is a positive correlation between concentration and profitability. Claessens, et al. (2001) investigated the impact and effect of foreign banks on the domestic market in a sample of 7900 banks from 80 countries, and for the period from 1988 to 1995. Their research was based on the difference in net interest margins, overhead costs, taxes paid, and profitability between domestic and foreign banks. They concluded that foreign banks have higher profitability than domestic banks in countries in developing countries, but not in developed countries. In this regard, the study found it was generally associated with lower profitability, lower costs, and a lower range of interest rates among domestic banks. Hermes and Lensink (2003) investigated the impact of foreign bank entry in countries with a lower stage of development and higher borrowing costs and net interest margins. They used data for 990 banks from 48 countries for the period from 1990 to 1996. They concluded that the entry of foreign banks in countries with lower stages of development is associated primarily with higher costs and interest margins compared to domestic banks. On the other hand, in the higher stages of development, the entry of foreign banks has a smaller effect on domestic banks.

Staikouras and Wood (2004) investigated the analysis of time series of cross-sections examining European banks for the period from 1994 to 1998. The results showed that profitability is affected not only by factors related to the influence of bank management decisions, but also by changes in the external macroeconomic environment. The structure-performance relationship in European banking has a positive interdependence with variables of concentration or market share on the profitability of banks. The presence of foreign banks can be beneficial to consumers by offering superior products and services to the financial industry by increasing the quality of services and the economy by increasing efficiency (Jildirim and Philippatos, 2007). However, the entry of foreign banks is not without risk, especially when this entry is made without prior consolidation of the institutional framework. Claessens et al. (1998) have shown that the presence of foreign banks can facilitate increased competition, improved credit distribution and access to international capital markets. But this also entails costs related to the entry of foreign banks, the costs which may consist of increased systemic risk caused by increased competition.

Thapa (2010) investigated the correlation between strategy and performance in Nepalese banks. He concluded that there is a positive correlation between the competitive strategies that banks implement and their organizational performance.

Therefore, it was also concluded that the best effects relate to the cost management strategy, i.e., reducing operating costs, and offering competitive prices. Olivero and Wu (2011) analyzed the impact of the presence of foreign banks on bank competition at the country and year level. They concluded that there is a negative (positive) relationship between foreign ownership and market power. Audio & Ellouze (2013), according to their research results, which are consistent with the SCP hypothesis, say that the more concentrated the banking system, the higher the profit reflection on efficiency.

Rahman & Reja (2015) investigated the relationship between the ownership structure and performance of banks in Malaysia, where they found that government ownership had a major impact on changes in bank operations. Haque & Shahid (2016) examined the effects on the government ownership, foreign ownership, and ownership concentration on bank performance and concluded that the government ownership negatively affects bank profitability.

3. The Bosnian banking system in light of the analysis, profitability, risk and concentration indicators

The financial model in Bosnia and Herzegovina is a bank-centric type characterized by a very high level of competition. On the other hand, apart from the competition in the banking system of BH, concentration is expressed. For illustration, in the banking system of the Republic of Srpska, four large and four small banks are dominant, where banks hold almost 80% of the banking market of the Republic of Srpska. In the Federation of BH, the largest five banks hold almost 74% of the loan and deposit market. The financial system in Bosnia and Herzegovina has been liberalized.

Table 1: Evaluation of some indicators of the Bosnian banking sector during 2010:Q4 - 2020:Q2 (in %)

Indicators	2010: Q4	2011: Q4	2012: Q4	2013: Q4	2014: Q4	2015: Q4	2016: Q4	2017: Q4	2018: Q4	2019: Q4	2020: Q1	2020: Q2	Average
Return on assets	-0.6	0.7	0.7	-0.1	0.8	0.3	1.1	1.5	1.3	1.4	0.3	0.5	0.66
Return on equity	-5.5	5.8	5.1	-0.5	5.4	2.0	7.3	10.2	9.6	10.4	2.4	3.6	4.65
Regulatory Capital to Risk-Weighted Assets	12.6	13.6	14.1	15.2	14.3	13.8	15.0	15.7	17.5	18.0	17.8	18.4	15.5
Non-performing Loans to Total Gross Loans	11.4	11.8	13.5	15.1	14.2	13.7	11.8	10.0	8.8	7.4	6.6	6.7	10.92
Interest Margin to Gross Income	60.1	63.9	63.7	62.3	61.6	62.0	60.4	58.3	58.8	56.8	56.9	56.8	60.13
Liquid Asset Ratio	29.0	27.2	25.4	26.4	26.8	26.5	27.2	28.4	29.7	29.6	28.1	27.3	27.63

Source: *https://data.imf.org (Adjusted by the author)*

The banking sector of Bosnia and Herzegovina during the observed period was adequately capitalized, where the rate of regulatory capital to risk assets ranged from a minimum of 12.6% in 2010:Q4 to a maximum of 18,4% in 2020:Q4, which is significantly above the statutory minimum of 12 %. The average capital adequacy ratio was 15.50%. Toxic loans had a very volatile trend as a result of increased credit risk, risk aversion, saturation of the economy with loans, rising unemployment rates and the limited inflow of money from abroad. The largest share of non-performing loans in total gross loans was recorded in 2013:Q4 (15.1%), while on the other hand the smallest share was recorded in 2020:Q1 (6.6%). The average amount of toxic loans in total loans was about 10.92%. The reduction in credit risk and non-performing loans arose as a result of the permanent write-off of non-performing loans, mild economic growth achieved in 2019, and more favorable financing conditions in terms of falling interest rates.

4. Model and estimation technique

In order to assess the impact of banking-specific, market and macroeconomic variables on the profitability of banks in Bosnia and Herzegovina, we used the following general model:

$$Y_{it} = \alpha + \beta' X_{it} + \mu_{it} \qquad (1)$$

Where Y_{it} is the dependent variable, α is the intercept term, β - is a kx1 vector of parameters to be estimated on the explanatory variables and μ is an error term (Brooks, 2008). By including all independent and dependent variables (ROA) in equation 1, model I is formulated as follows:

$$ROA_{i,t} = \alpha + \beta_{it}(+HHIloans_{i,t} + BS_{i,t} + FB_{i,t} + GRTL_{i,t}) + \mu_{it} \qquad Model\ I$$

By including second dependent (ROE) and independent variables in equation 1, model II is formulated as follows:

$$ROE_{i,t} = \alpha + \beta_{it}(+HHIloans_{i,t} + BS_{i,t} + FB_{i,t} + GRTL_{i,t}) + \mu_{it} \qquad Model\ II$$

Finally, by including a third dependent variable (NIM) and independent variables in equation 1, model III is formulated as follows:

$$NIM_{i,t} = \alpha + \beta_{it}(+HHIloans_{i,t} + BS_{i,t} + FB_{i,t} + GRTL_{i,t}) + \mu_{it} \qquad Model\ III$$

The zero hypothesis supports the random-effects model. The alternative hypothesis supports the fixed effects model. The following hypotheses were tested:

- *The zero hypothesis supports the random-effects model.*
- *The alternative hypothesis supports the fixed effects model.*

If a p-value is statistically significant, the fixed-effect model should be used. On the other hand, if a p-value is not statistically significant, the random effect model should be used. The significance test was performed for all variables by using a t-test at a significance level of 95% (Chmelarova, 2007). The zero and the first hypotheses were tested by using the Hausman test.

5. Data and variables

The sample of this research consists of 15 commercial banks in the Federation of Bosnia and Herzegovina in the period from the first quarter of 2008 to the fourth quarter of 2020. The bank-specific data were collected from The Banking Agency of the Federation of the B&H while data on the country and market were obtained from statistical publications of Bosnia and Herzegovina and The Central Bank of Bosnia and Herzegovina. This empirical study uses quarterly data for the entire banking system of The Federation of Bosnia and Herzegovina. The dependent variables the return on asset (ROA) the return on equity (ROE) and the net profit margin were used. And four independent variables are used, they are Herfindahl-Hirschman Index (HHI), bank size (BS), foreign banks (FB) and growth rate of total loans (GRTL). As in most of the previous studies, ROA, ROE and NIM are dependent variables and they were used as a measure of individual bank profitability. In table 2 the explanatory variables and anticipated effects of dependent and independent variables are given:

Table 2: A brief description of the dependent and independent variables in the model

VARIABLE	MEASURED BY	ANTICIPATED SIGNS
ROA	The ratio of profit to total assets	-
ROE	This ratio is obtained by dividing the bank's net income with the equity	-
NIM		-
HHI	The Herfindahl-Hirschman index - computed as the sum of squared market shares of all banks	+or-
BS	Bank size is measured by total assets or as a logarithmic function of total bank assets	+or-
FB	Foreign-owned banks are identified as banks with 50% or more of foreign-owned assets, and are used as information to construct a foreign-owned variable.	+
GRTL	The growth rate of total loans is expressed as a percentage change (increase / decrease in credit growth) in the current compared to the previous quarter.	+or-

Source: *Author's study*

Where:

Return on assets (ROA): is considered to be the most appropriate measure to evaluate the performance of a bank's business. The ROA is obtained by dividing the bank's income before the interest payable on its assets.

Thus, ROA measures the effectiveness of management in using the resources of a bank to make a profit. It also evaluates the efficiency of the bank in using its financial and real investments to earn interest and other fees. This measure of bank profitability is particularly significant when comparing operational efficiency between banks (Sinkey, 1988).

Return on equity (ROE): expresses how much a bank earns on the book value of its investments. This ratio is obtained by dividing the bank's net income with equity, which reflects the revenue generation, operational efficiency, financial leverage, and tax planning. For some banks, ROE may be high because banks do not have an adequate capital ratio. The capital adequacy ratio in Bosnia and Herzegovina is 12%, which is the legal minimum so that almost all banks maintain a capital adequacy ratio. ROE can also be obtained as a product of ROA and leverage multiplier, where a bank can use this ratio between two ratios to improve ROE ratios. For example, banks with low ROA can increase their ROE by using additional leverage, that is, by increasing their asset-equity ratio (Koch & MacDonald, 2009).

Net interest margin (NIM): measures how efficient the bank is in financial intermediation, i.e. in performing the functions of taking and giving loans. The relative amount of net interest margins is obtained when interest-bearing expenses are deducted from interest-bearing income, which is increased by allocated reserves for losses and the entire amount is divided by interest-bearing assets (Plakalović & Alihodžić, 2015).

The Herfindahl-Hirschman index (HHI): HHI can take different values in an interval from 0 to 10.000. The concentration index does not grow linearly, which means that, for example, an amount of 3.000 does not mean that the concentration in the system is 30%. If the concentration index ranges from 0 to 1.000, it is considered that the market is unconcerned, that is, a high level of competition is present. If the index ranges from 1.000 to 1.800, then it can be said that there is a moderate concentration of the market. And if the index record's value is ranging from 1.800 to 10.000, then the market is concentrated, i.e. there is a monopoly (Banking Agency of the Federation of Bosnia and Herzegovina, 2017).

Bank size (BS): is measured by total assets or as a logarithmic function of total bank assets, and is considered as one of the most important determinants of bank profitability, where it can have a positive or negative impact on bank profitability. Since the impact of a bank’s size on a bank’s profitability can have a nonlinear relationship, the log of total assets in order to adjust this nonlinear relationship will be used.

The foreign bank (FB): foreign-owned banks are identified as banks with 50% or more of foreign-owned assets, and are used as information to create the foreign-owned variable. This variable identifies the direct effect of foreign ownership on the market power of the banking sector (Claessens and van Horen, 2014).

The growth rate of total loans (GRTL): the growth rate of total loans is expressed as a percentage change (increase/decrease in credit growth) in the current compared to the previous quarter (Plakalović & Alihodžić, 2015).

6. Results

Before the hypothesis was tested, correlations and regression were shown in tables 3-10. The total number of observations is 52 which represents a representative sample both in terms of the bank sector of Bosnia and Herzegovina and the view of the timeframe.

Table 3: Correlation matrix (Pearson Correlation) between dependent and independent variables of banks in Bosnia and Herzegovina in the period: 2008:Q1 - 2020:Q4

		ROA	ROE	NIM	HHI	BS	FB	GRTL
ROA	Pearson Correlation	1.000	0.925	0.335	-0.493	0.499	0.666	0.166
	Sig. (2-tailed)	-	0.000	0.015	0.000	0.000	0.000	0.239
	N	52	52	52	52	52	52	52
ROE	Pearson Correlation	0.925	1.000	0.321	-0.429	0.460	0.624	0.094
	Sig. (2-tailed)	0.000	-	0.020	0.001	0.001	0.000	0.505
	N	52	52	52	52	52	52	52
NIM	Pearson Correlation	0.335	0.321	1.000	-0.305	0.146	0.019	0.259
	Sig. (2-tailed)	0.015	0.020	-	0.028	0.303	0.892	0.064
	N	52	52	52	52	52	52	52
HHI	Pearson Correlation	-0.493	-0.429	-0.305	1.000	-0.629	-0.824	0.054
	Sig. (2-tailed)	0.000	0.001	0.028	-	0.000	0.000	0.705
	N	52	52	52	52	52	52	52
BS	Pearson Correlation	0.499	0.460	0.146	-0.629	1.000	0.679	-0.333
	Sig. (2-tailed)	0.000	0.000	0.303	0.000	-	0.000	0.016
	N	52	52	52	52	52	52	52
FB	Pearson Correlation	0.666	0.624	0.019	-0.824	0.679	1.000	0.049
	Sig. (2-tailed)	0.000	0.000	0.892	0.000	0.000	-	0.731
	N	52	52	52	52	52	52	52
GRTL	Pearson Correlation	0.166	0.094	0.259	0.054	-0.333	0.049	1.000
	Sig. (2-tailed)	0.239	0.505	0.064	0.705	0.016	0.731	-
	N	52	52	52	52	52	52	52

Source: *Author's calculations*

The strong positive correlation between the first dependent variable in the model (ROA) was recorded with the independent variable by the share of foreign equity in the total capital structure (0.666) at the significance ($p<0.05$). The share of foreign capital in 2001 and 2002 was quite high because these were the years of privatization, and the years of the formation of new banks, which was accompanied by a higher intensity of capital investment in banking institutions. Therefore, it was a period of reducing the share of the state-own banking sector, expanding the number of business units, introducing new products such as mortgage loans, leasing, etc. Foreign ownership has had a positive impact on banks' profitability because foreign banks have the state-of-the-art technology, high standards of governance, better risk mitigation, and can benefit from special tax breaks.

There is also a correlation between independent variables such as foreign bank and bank size, which was recorded by a positive correlation of 0.679 with a significance of $p < 0.05$. This is primarily the result of the increased effect of several foreign banks on the increase in banking assets. By comparing the fourth quarter of 2020, with the fourth quarter of 2008, the share of foreign banks increased by about 86%, while total assets for the same period increased by about 58% (Banking Agency of the FB&H, 2020). The second dependent variable (ROE) recorded the strongest positive correlation with share of foreign equity in the total capital structure (0.624) at the significance $p<0.05$.

In terms of the negative correlation, the third dependent variable, the net interest margin (NIM) recorded the strong negative correlation for the market concentration index HHI (-0.305) with a significance of $p<0.05$. Bikker and Haaf (2002) investigated the conditions of economic competition and the structure of the banking sector in 23 countries around the world. They concluded that the greatest degree of competition was shown by large banks, usually in international markets. Contrary to these findings, they concluded that smaller banks in local markets have a lower degree of competition. In this regard, they came to the new conclusion that a higher level of concentration leads to lower competition. Therefore, there is a moderate concentration of the Bosnian-Herzegovinian bank market. Based on the previous negative correlation between the NIM and the HHI index, it can be concluded that with a decrease in concentration, the net interest margin can increase, observed for the entire banking system, and not only at the level of individual banks. Table 4 shows summary statistics of the total correlation of the first three dependent variables in the model (ROA, ROE and NIM).

Table 4: Summary correlation statistics between dependent and independent variables of banks in Bosnia and Herzegovina in the period: 2008:Q1 - 2020:Q4

Dependent variables	R	R Square	Adjusted R Square	Std Error of the Estimate	Durbin - Watson
ROA	0.708	0.501	0.459	0.32763	1.489
ROE	0.659	0.434	0.386	4.926	1.140
NIM	0.541	0.293	0.232	3.70421	0.586

Source: *Author's calculations*

All three observed dependent variables have a correlation greater than 0.50, which indicates the conclusion that this is a medium-strong correlation. Durbin and Watson (1951) applied this statistic to the least-squares regression residues, and developed limit tests for the null hypothesis that the errors were serially uncorrelated with the alternative, that they followed a first-order autoregressive procedure. If the values of Durbin Watson statistics are significantly less than 2 then there is a positive serial correlation. In terms of Durbin Watson the correlations of values are different, the first two dependent variables in the model (ROA and ROE) had values greater than 1 and less than 2, which implies the conclusion that this is a positive serial correlation. The NIM variable has a very low correlation in terms of the Durbin Watson correlation value.

This research is focused on the impact of specific variables of market concentration of banks, as well as some specific factors on the profitability of domestic, foreign and all banks in the Federation of Bosnia and Herzegovina. The regression results for Model I are presented in table 5.

Table 5: Fixed effects regression between dependent (ROA) and independent variables of banks in Bosnia and Herzegovina in the period: 2008:Q1 - 2020:Q4 - (Model I)

Fixed-effects (within) regression					**Number of obs = 52**	
R-sq: within =0.5174					Number of groups = 4	
between = 0.6073						
overall = 0.4961					Obs per group: min = 13	
avg =13.0						
max =13						
F(8,44) =11.80						
Prob > F = 0.000						
ROA (dependent)	**Coeff.**	**Std. Err.**	**t**	**P>[t]**	**[95% Conf. Interval]**	
HHI	-0.000764	0.00062	-1.24	0.223	-0.00048	0.002009
BS	-0.122499	0.88899	-0.14	0.891	-1.91415	1.669153
FB	7.19e-07	1.68e-07	4.28	0.000	3.80e-07	1.06e-06
GRTL	0.048448	0.038931	-1.24	0.220	0.12690	0.030013
_cons	-1.30732	6.565485	-0.20	0.843	-14.5391	11.92454
sigma_u	0.151679					
sigma_e	0.309180					
Rho	0.193986					

Source: *Author's calculations (STATA 13.0).*

The total number of observations is 52 which makes the models relatively representative. The empirical value of the F test for 8 degrees of freedom in the numeration and 44 in the denomination was 11.80. The probability based on the fixed effects regression is 0.000, which means that the model is very significant. In the previous table, it can be seen that independent variables (p-value < 5%) mostly affect the dependent variable return on asset (ROA) such as the share of foreign capital of banks in total capital (0.000).

The estimated results of the observed 15 banks in the Federation of B&H show that most of the analyzed variables have a significant impact on the profitability of banks. Based on the negative correlation between bank size and return on asset (-0.122), it can be concluded that there is no evidence that larger banks ultimately make higher profits due to the impact of economies of scale. Therefore, it should be clear to the management of commercial banks in the Federation of B&H that a higher level of total assets is not a sine qua non for greater profitability of the bank.

Table 6: Random effects (GLS) regression between dependent and independent variables of banks in Bosnia and Herzegovina for the period: 2008:Q1 - 2020Q4 - (Model I)

Random-effects GLS regression					**Number of obs = 52**	
R-sq: within = 0.5129					Number of groups = 4	
between = 0.6109						
overall = 0.5010					Obs per group: min = 13	
avg = 13.0						
max = 13						
Wald chi2 (4) =47.19						
Prob > chi2 = 0.000						
ROA (dependent)	**Coeff.**	**Std. Err.**	**z**	**P>[z]**	**[95% Conf. Interval]**	
HHI	-0.000820	0.00065	-1.26	0.208	-0.000456	0.002097
BS	-0.237625	0.90930	0.794	0.794	-2.01983	1.544577
FB	7.56e-07	1.76e-07	4.30	0.000	4.12e-07	1.10e-06
GRTL	0.07412	0.037429	1.98	0.048	1.14748	0.000759
_cons	-0.60313	6.709846	-0.09	0.928	-13.7541	12.54792
sigma_u	0					
sigma_e	0.309180					
rho	0					

Source: *Author's calculations (STATA 13.0).*

The results showed that the Generalized Least Squares Regression (GLS) better describes the impact of independent variables on return on asset (ROA). The results of the Hausman test showed that Pro>chi2 = 0.272, that is, the random effect GLS model gives higher significance than fixed effects regression, for the simple reason that the value of Pro>chi2>0.05 (Appendix I - Model I). The most significant positive effect on the dependent variable (ROA) was recorded by the following independent variable: foreign banks with a significance of less than 0.05.

Foreign banks have higher productivity compared to domestic banks. Also, further analysis showed that foreign banks in Serbia during the crisis were better capitalized than domestic banks, and had a lower ratio of liquid assets, i.e., higher credit ratio to deposit activity (Kovačević, 2012).

Table 7: Fixed effects regression between dependent (ROE) and independent variables of banks in Bosnia and Herzegovina in the period: 2008:Q1 - 2020:Q4 - (Model II)

Fixed-effects (within) regression					**Number of obs = 52**	
R-sq: within = 0.436					Number of groups = 4	
between = 0.685						
overall = 0.431					Obs per group: min = 13	
avg = 13.0						
max =13.0						
F(8,44) = 8.50						
Prob > F = 0.000						
ROE (dependent)	**Coeff.**	**Std. Err.**	**t**	**P>[t]**	**[95% Conf . Interval]**	
HHI	-0.0149	0.009765	-1.53	0.132	-0.00470	0.034657
BS	-2.2387	14.04662	-0.16	0.874	-26.0703	30.54786
FB	0.00001	2.66e-06	3.79	0.000	4.71e-06	0.0000154
GRTL	0.37557	0.615136	0.61	0.545	1.615302	0.864148
_cons	-54.2786	103.738	-0.52	0.603	-263.349	154.792
sigma_u	1.584					
sigma_e	4.885					
Rho	0.0951					

Source: *Author's calculations (STATA 13.0).*

From table 7, it can be seen that the strongest positive correlation with the ROE variable was recorded by the FB variable (0.00001) at a significance of less than 5%. A study by Claessens and Lee (2003) found that the participation of foreign banks was beneficial for domestic banks in terms of reducing financial intermediation costs. In addition, foreign banks have made the financial system more efficient and powerful. Their study included 58 low-income countries. In this regard, it can be concluded that the entry of foreign banks had a positive implications for the banking system of developing countries.

Table 8: Random effects (GLS) regression between dependent and independent variables of banks in Bosnia and Herzegovina for the period: 2008:Q1 - 2020Q4 - (Model II)

Random-effects GLS regression					**Number of obs = 52**	
R-sq: within = 0.4330					Number of groups = 4	
between = 0.6771						
overall = 0.4343					Obs per group: min = 13	
avg =13.0						
max = 13						
Wald chi2 (4) =36.08						
Prob > chi2 = 0.000						
ROE (dependent)	**Coeff.**	**Std. Err.**	**z**	**P>[z]**	**[95% Conf . Interval]**	
HHI	-0.0154	0.0097967	-1.57	0.116	-0.00381	0.03458
BS	-0.4192	13.67108	-1.57	0.116	-26.3755	27.21412
FB	0.000010	2.64e-06	3.97	0.000	5.31e-06	0.0000157
GRTL	0.674103	0.562738	1.20	0.231	-1.77705	0.428844
_cons	-42.1937	100.880	-0.42	0.676	-239.915	155.528
sigma_u	0					
sigma_e	4.885219					
Rho	0					

Source: *Author's calculations (STATA 13.0).*

According to Havrylchyk and Jurzyk (2006), a positive correlation was found between the market concentration of domestic banks and profitability, while foreign banks are not significantly affected by market concentration. Also, according to the results obtained from table 8, there is a positive correlation between the market concentration index (HHI index) and ROE, but not of high significance. Banks in the Federation of B&H have an oligopolistic position, i.e., 3 to 5 dominant banks have a significant role in relation to the entire banking system. According to the branch structure of placing loans in the Federation of B&H, the largest relative share in 2019, belongs to the industrial production sector of about 14.9%, followed by the trade sector of about 19.0%. Observed on the other hand, the least placed loans refer to the agricultural sector of only 1%, catering of 1.7% and the construction sector of only 3.3% (Banking Agency of the Federation of Bosnia and Herzegovina, 2019).

Table 9: Fixed effects regression between dependent (NIM) and independent variables of banks in Bosnia and Herzegovina in the period: 2008:Q1 - 2020:Q4 - (Model III)

Fixed-effects (within) regression					**Number of obs = 52**	
R-sq: within = 0.3033					Number of groups = 4	
between = 0.1128						
overall = 0.2912					Obs per group: min = 13	
avg =13.0						
max =13						
F(8,44) = 4.79						
Prob > F = 0.001						
NIM (dependent)	Coeff.	Std. Err.	t	P>[t]	[95% Conf . Interval]	
HHI	-0.0293275	0.007354	-3.99	0.000	-0.044148	-0.01451
BS	-0.3135765	10.57885	-0.03	0.976	-21.6338	21.0067
FB	5.58e-06	2.00e-06	2.79	0.002	-9.61e-06	1.55e-06
GRTL	0.447063	0.46327	0.97	0.340	-1.38073	0.48660
_cons	68.55654	78.1278	0.88	0.385	-88.8997	226.012
sigma_u	1.138449					
sigma_e	3.67917					
Rho	0.08738					

Source: *Author's calculations (STATA 13.0).*

F statistic and Wald chi2 are significant at the significance level of 5% for the observed data sets, which indicates that the proposed model corresponds well to the data. The overall shows that 29.26% of change in profitability of all banks in the Federation of Bosnia and Herzegovina is explained by the variables that are used in this model.

Table 10: Random effects (GLS) regression between dependent (NIM) and independent variables of banks in Bosnia and Herzegovina for the period: 2008:Q1 - 2020Q4 - (Model III)

Random-effects GLS regression					**Number of obs = 52**	
R-sq: within =0.3019					Number of groups = 4	
between = 0.1529						
overall =0.2926					Obs per group: min = 13	
avg =130						
max = 13						
Wald chi2 (4) =19.44						
Probe > chi2 = 0.000						
NIM (dependent)	**Coeff.**	**Std. Err.**	**z**	**P>[z]**	**[95% Conf . Interval]**	
HHI	-0.02824	0.007367	-3.83	0.000	-0.042681	-0.013802
BS	0.96004	10.28061	0.09	0.926	-19.18959	21.10967
FB	5.45e-06	1.99e-06	2.74	0.004	-9.35e-06	1.56e-06
GRTL	0.516599	0.423178	1.22	0.222	-1.346013	0.312815
_cons	57.43475	75.86171	0.76	0.449	-91.25147	206.121
sigma_u	0					
sigma_e	3.679175					
Rho	0					

Source: *Author's calculations (STATA 13.0).*

The third dependent variable (NIM) recorded the strongest positive correlation with the (FB) variable at a significance of less than 5%. On the other hand, this variable (NIM) had the strongest negative correlation with the variable (HHI_credits) at a significance of less than 5% (-0.028). For developing countries, the conclusions are that foreign banks have a higher net interest margin, profitability and tax payment compared to domestic banks. It is also pointed out that with the entry into the developing markets, foreign banks did not take into account the need for larger amounts of reserves and commissions. In any case, the entry of foreign banks has created a greater efficiency in the domestic banking system (Claessens, et al. 2001). Foreign banks can not only increase the availability of credit by placing loans directly to domestic companies, but they can also encourage competition and strengthen the financial system, thus helping all borrowers. Likewise, foreign banks often enter the market by merging or merging in a process that changes the market power of all banks present in the system.

7. CONCLUSIONS

In this study, the impact of oligopolistic position measures on the profitability of banks in the Federation of Bosnia and Herzegovina was investigated. This study covers the research period: 2008:Q1 - 2020:Q4. The pooled cross - sectional analysis is applied to data from 15 commercial banks. The two variables that show significance in the pooled sample of 52 observations are the foreign banks and the credit market concentration index. Foreign banks played a significant role in the completed privatization of state capital in the Federation of Bosnia and Herzegovina, as well as in reducing intermediation costs, which at the end of this study showed a positive correlation with the first two profitability indicators ROA and ROE. Foreign banks also influenced the increase in competition in the initial years, and later the trend of moderate concentration appeared. The effect of the independent variables on the dependent variable using the pooled OLS regression model (FE) model and the random-effects GLS regression model by using the Hausman test were used. The most significant impact through the OLS regression model and GLS regression model had the following variables: foreign bank as well as credit market concentration index. In terms of testing hypotheses through the Hausman test, we came to the conclusion that the null hypothesis was accepted and the alternative was rejected because the GLS regression model best describes the effect of the independent variables on the dependent variable. Foreign banks have better productivity compared to domestic banks, are also better capitalized, and have a higher loan-to-deposit ratio. The market concentration index has an inverse causality with all three dependent variables in the model, which leads to unequal profitability of the observed individual banks

in the system. With increasing competition and decreasing concentration, the overall profitability of banks could increase. Also, based on the results of this research, it can be concluded that the size of a bank does not necessarily determine and influence its profitability. Therefore, a larger data set of B&H banks could help to incorporate more determinants into the model and better understand the impact of oligopolistic position measures on the bank's profitability. Also, assessing the implications of concentration on overall banking profitability is an important task for banks as well as policymakers. As the results of the study market concentration is negatively related with performance of the bank so that policy makers should concentrate on policies that promote market competition in banking industry and making less market concentration. Improving the performance of banks in Bosnia and Herzegovina over the next few years will be a major challenge due to the influence of external factors such as slower economic growth, competitiveness, saturation of economy and population with credit, slow growth of employment and income, etc. In this regard, a successful response to a turbulent environment is certainly to forecast the bank's performance.

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DA LI OLIGOPOLSKA POZICIJA BANAKA UTIČE NA PERFORMANSE POSLOVANJA BANKARSKOG SEKTORA U FEDERACIJI BOSNE I HERCEGOVINE?

SAŽETAK:

Nivo bankarske koncentracije se značajno povećao u bankarskom sektoru Bosne i Hercegovine kao rezultat uspješno završene privatizacije, formiranja novih banaka, spore tranzicije i brze liberalizacije. Brza liberalizacija je u domaći bankarski sektor uvela jaku konkurenciju s jedne strane, dok je s druge strane došlo do pojačane koncentracije pojedinih većih banaka u sistemu. Osnovni cilj ovog istraživanja bit će usmjeren na analizi uzajamno-korelativne veze između osnovnih mjera oligopolske pozicije banaka te njihovog uticaja na poboljšanje ili pogoršanje performansi efikasnosti poslovanja domaćih banaka, kao što su povrat na aktivu (ROA), povrat na vlasničku glavnicu (ROE) i neto kamatna margina (NIM). Period istraživanja pokriva godine od 2008: Q1 do 2020:Q4 na kvartalnoj osnovi. Sljedeće promjenljive su korištene kao nezavisne promjenljive u modelu: HHI indeks tržišne koncentracije u kontekstu kredita, udio stranih banaka u ukupnoj vlasničkoj strukturi banaka (FB), veličina banke (BS) i stopa rasta ukupnih kredita (GRTL). Međuzavisnost promjenljivih u ovoj studiji ispitana je pomoću OLS regresionog modela. Rezultati su pokazali da promjenljiva udio stranih banaka u ukupnoj vlasničkoj strukturi (FB) ima pozitivan uticaj na promjenljivu prinos na aktivu (ROA), dok promjenljiva veličina banke (BS) i indeks tržišne koncentracije za kredite (HHI_krediti) imaju negativan uticaj. Rezultati su također pokazali da dvije nezavisne promjenljive stopa rasta ukupnih kredita (GRTL) kao i udio banaka u stranom vlasništvu (FB) imaju pozitivan uticaj na promjenljivu prinos na vlasničku glavnicu (ROE), dok varijable indeks tržišne koncentracije kredita (HHI_krediti) i veličina banke (BS) imaju negativan efekat. Treći rezultat je promjenljiva neto kamatna margina (NIM) koja ima najsnažniji pozitivan uticaj na dvije promjenljive, udio banaka u stranom vlasništvu (FB) i stopu kreditnog rasta (GRTL), dok koncentracija za kreditne plasmane(HHI) i veličina banke (BS) imaju negativan efekat.

Ključne riječi: *Performanse, privatizacija, koncentracija, banke u Federaciji BiH.*

JEL: *G21, G34, C51.*

Appendix I: Results obtained using Hausman test for return on asset (ROA) - Model I

Variables	b(fixed)	B(random)	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
HHI	0.0007636	0.0008204	-0.0000568	-
BS	-0.1224999	-0.2376258	0.1151259	-
FB	7.19e-07	7.56e-07	-3.75e-08	-
GRTL	-0.0484478	-0.07412	0.0256721	0.0107091

Source: *authors' own calculations (STATA 13.0).*

chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)

= 3.90

Prob>chi2 =0.2721

Appendix II: Results obtained using Hausman test for return on asset (ROE) - Model II

Variables	b(fixed)	B(random)	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
HHI	0.0149785	0.0153833	-0.0004048	-
BS	2.238753	0.4192998	1.819454	3.226328
FB	0.0000101	0.0000105	-4.35e-07	2.44e-07
GRTL	-0.375576	-0.6741039	0.2985271	0.2484297

Source: *authors' own calculations (STATA 13.0).*

chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)

= 9.60

Prob>chi2 = 0.0223

Appendix III: Results obtained using Hausman test for return on asset (ROE)-Model III

Variables	b(fixed)	B(random)	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
HHI	**-0.029327**	**-0.02824**	**-0.00108**	**-**
BS	-0.3135765	0.960040	-1.273617	2.494213
FB	**5.58e-06**	**5.45e-06**	**1.30e-07**	**2.14e-07**
GRTL	-0.4470626	-0.5165992	0.069536	0.1885286

Source: *authors' own calculations (STATA 13.0).*

chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)

= 10.34

Prob>chi2 = 0.0159

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INTERACTION OF STRATEGIC MANAGEMENT PROCESSES AND ACHIEVED CORPORATE PROFITABILITY: EVIDENCE FROM CROATIA

ABSTRACT

Strategic management can be said to have evolved over time and will continue to evolve. In order for companies to be more successful in their operations, they need a methodological approach to developing a strategic plan. Strategy implementation is a complex process because it is a consequence of complex relationships. In accordance with the above, an empirical study was conducted on a sample of 53 companies in the Republic of Croatia. The subject and goal of the research was to scientifically determine the importance of adopting and implementing long-term strategic plans. The main results of the research are that the degree of implementation of the strategy is not significantly related to the indicators of net profit margin (ROS 0.164) and return on equity (ROE 0.216), while it is partially related to the indicator of earnings strength (TSZ 0.304) but is significant for a successful business. The implementation of the research revealed that strategic planning is an extremely important and significant factor for stable growth and development of the company. The implementation of the strategy has an important contribution to the successful operation of the company.

Keywords: *Strategic planning, profit, company profitability*

JEL: *O12, O29, C49, G32*

1. INTRODUCTION

In today's modern business world, observing from a global point of view we can see large differences in the performance of the company. Many business owners strive to come up with concrete insights into what it is that contributes to a company's successful business in the global marketplace. In the business world, the convulsive struggle for the survival of business is visible. However, what is known is the fact that without a good and quality strategy, mission and vision, companies cannot survive in the global market. Strategic management is a very dynamic and complex

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concept that highlights three relevant segments, such as teamwork in the company, managerial process and scientific discipline. It can be said that strategic management has evolved over time and will certainly continue to evolve. In order for companies to be as successful as possible in their business, they need a methodological approach to developing a strategic plan. The development of a strategic plan is not a simple process, it is necessary to carefully observe the environment in which the company operates, as well as detailed planning of all factors that play a key role in the strategic planning process. Making a good strategic business plan of the company ends with making quality and effective decisions on which to base the successful business results of the company. After a quality and well developed strategic plan, it is necessary to approach its good and quality implementation. The failed implementation of strategic plans is one of the fundamental reasons why companies are not profitable. The heterogeneous relationship between enterprise strategy and financial performance leads to pushing boundaries in scientific research.

2. Theoretical review

In recent times, strategy means the struggle for survival and victory. In the business world, strategy means the struggle of two or more companies for customers and the market, strengthening the competitive position by increasing market share, while achieving continuous profitability for long-term survival in the market. When strategic management is viewed as a process, it implies a continuous process that seeks to steer the company towards continuous operation in a very dynamic, changing and unpredictable environment.

Strategic management as a scientific discipline encompasses the entire spectrum of organized knowledge related to the analysis of the environment, setting organizational direction, formulating and implementing a strategy and implementing control and achieving progress. A modern enterprise could hardly exist without management, because the global market is full of challenges to which humanity is exposed and which can be overcome by managers (Sikavica i Bahtijarević-Šiber, 2004).

Strategic management can be divided into: strategic planning, implementation of strategic plans and strategic control. We can present strategic management as accepting and adapting the company to the challenges from its environment. The survival of companies in today's global market environment, which is exposed to dynamic changes, is possible only through the adoption of quality business policies and strategic plans.

2.1. Important determinants of strategic management

Consideration of the strategy definition approach can explain the attitude of the top management of the company not only in the formulation but also in the implementation of the strategy. Different approaches indicate that top management prefers a greater or lesser level of formalization, decentralization, flexibility in making strategic decision and strategy implementation. Therefore, it is necessary to present several important determinants of strategic management (Buble, 2005):

- strategic management is a consistent process, which means that it lasts continuously
- management engagement comes in a series of stages that begin with environmental analysis, setting organizational direction, formulating and implementing strategies, and finally with control and evaluation
- managers make many decisions, which means taking a number of actions with the help of which they strive to achieve the set goals
- strategic management must ensure that possible rapid action is taken in response to sudden phenomena from a dynamic and complex environment
- strategic management is a cyclical process after the last stage continues further again with the first stage

2.2. The process of strategic management and strategy implementation

Although the task of top management is more focused on strategy design and the task of lower operational levels of management is more focused on strategy implementation, the optimal solution is the synergy of all levels of management throughout the strategic management process. This requires constant communication, exchange of ideas and mutual motivation (Noble, 1999). The process of strategic management is divided into four main phases (Mencer, 2012):

1. Environmental analysis - the study of the environment involves the collection, verification and provision of information to members who make decisions within the company by analyzing internal and external factors.
2. Strategy formulation - during the formulation phase, the company sets the vision, mission and business objectives, determining the necessary resources, investment priorities and the duration of the strategy implementation process.

3. Implementation of the strategy - the phase in which the strategic plans come to life. Successful implementation of the strategy is key to the success of the business venture. At this stage, it is extremely important to provide employees with the appropriate amount of resources so that they can perform ongoing activities.
4. Strategy evaluation - includes measuring business performance. It is necessary to take care that the evaluation monitors the implementation of the strategy, i.e. that the company establishes an adequate system of quantitative and qualitative indicators that truly reflect the quality of the strategy implementation process.

It can be concluded that the phases of the strategic management process are divided into several stages that go through and they concern the very diagnosis of key factors that could affect the strategy itself. In the second phase, strategies are usually generated that could complement the main strategy and in the next phase, a selection of strategies that have the best chance of achieving the goal for which they were set takes place. The last part of the strategic planning itself refers to the development of the strategic plan itself, and defining the basic bases on which it will be based for implementation.

Strategic planning is a process that includes determining future directions of action and determining why some actions are implemented, how to take them, when and who will take them. Strategic planning can be defined as a process or concept that includes the skills of anticipating directions of change, influencing them and controlling their nature and directions of action.

There are three types of strategic planning that are essential to every organization: corporate, business and functional. When you are leading a strategic initiative for executing a level strategy, you are creating a new business model. When you are leading a strategic initiative for executing a business-level strategy, you are improving several or all of the elements of a business model. When you are leading a strategic initiative for executing a functional level strategy, you are optimizing one or more of the elements of a business model. Analysis of an organization’s strengths and weaknesses is a key concept of strategic management. Other than the internal analysis, an organization also undertakes external analysis of factors such as emerging technology and new competition. Strategy formation is a concept that entails developing specific actions that will enable an organization to meet its goals. Strategy formation entails using the information from the analyses, prioritizing and making decisions on how to address key issues facing the organization. Additionally, through strategy formulation an organization seeks to find ways of maximizing profitability and maintaining a competitive advantage. Strategy implementation is putting the actual

strategy into practice to meet organizational goals. The idea behind this concept is to gather all the available and necessary resources required to bring the strategic plan to life. Organizations implement strategies through creating budgets, programs and policies to meet financial, management, human resources and operational goals. For the successful implementation of a strategic plan, cooperation between management and other personnel is absolutely necessary (Maleka, 2014).

2.3. Previous research

There is no knowledge of similar research to date. Some previous research has included the implementation of the strategic management process and strategy implementation.

Frigo (2002) explores management strategy from two perspectives, as a business strategy and business execution, parallel and interconnected processes that are both essential for a firm to achieve a peak in financial performance. Over the years, he has conducted surveys on how performance measurement systems, which are based on business process strategy, are changing to meet new business processes. Measuring the success of the company's operations on the application of strategic planning and from the obtained survey results, a separation of the company's profitability and performance strategy was observed. He states that measures are needed to improve performance measurement and strategic management to create added economic value for the company. Frigo, Mark L. concludes that there are huge improvements in performance measurement systems as organizations focus on initiatives like the Balanced Scorecard and firms try to find ways to measure performance that are more clearly related to business strategy.

According to Kaplan and Norton (2005), the fact is defined that it is better to have a weaker plan that is well implemented than an excellent plan that is only partially implemented in the company or not implemented at all.

Hrebiniak (2006) states the fact that the process of strategy implementation is more important than the strategy itself. It says that a bad strategy can hinder the strategy implementation process, but a good strategy implementation can overcome the shortcomings of a bad strategic plan. He describes the implementation of the strategy as a very demanding and risky process of strategic management. Martin (2010) agrees, explaining that the implementation of the strategy is a key activity of the entire strategic management process. It is stated that in the first place, it is about the implementation of the strategy, about what the company is capable of doing in practice.

Sloan (2006) studying the experiences of strategic management concludes that non-formal learning is one of the crucial factors in the successful formulation and implementation of a strategy. He points out that 80% of managers formulate a strategy based on experience, and only 20% based on knowledge gained through training. The reason for this is the fact that formal planning models contain a large number of assumptions that cannot be met in the real world because business situations are specific to each other. It can be concluded that traditional approaches to strategy development and implementation are in most cases too formal and ineffective.

Certo et al (2006) investigated the relationship between the management of the top management team and the achieved financial result of the company. Much of the research relied on the survey, although the data are reliable and available, the study results are not consistent. A meta-analysis of several indicators and financial performance provide modest support for direct relationships, but indicate moderate impacts. Further meta-analysis and confirmatory factor analysis enrich the findings by examining potential moderate and intervention factors, which show a partial connection between the top management team and the achieved financial result of the company.

Certo et al. (2020) state that very little is known about research on the idea of the relationship between strategies and company performance due to their heterogeneity. Little is known about how heterogeneous there is in enterprise patterns and how this could affect empirical tests of theories used by strategy scholars. They investigated performance heterogeneity by examining distributions of solid performance measures (e.g., ROA, ROS, EPS, etc.). They found that extreme levels of distortion and courtesy differed significantly in different measures, samples, transformations, and years. Simulations have been created that mimic distributions and it has been found that such non-normality negatively impacts the efficiency and robust regression with value added. It points out that quantile regression is suitable for modeling the variables that follow a normal distribution and represents an attractive approach for researchers examining firm performance. The primary implication of their research is that the extreme non-normality of performance measures makes it difficult for researchers to support theoretical frameworks when using models that focus on average relationships (multilayer models, etc.).

3. Research methodology

The subject of the research includes determining the importance of adopting and implementing long-term strategic plans for long-term profitability of the company. The research starts from the fact that strategic planning is extremely important and necessary for successful long-term business operations and only business entities

that continuously develop long-term strategic plans can make a positive shift in their strategic orientation to meet modern market needs and have the ability to survive and progress on the market. In case the company's management does not approach the development and implementation of strategic plans, it is necessary to emphasize the importance of continuous strategic planning to achieve profitability. This research sought to empirically prove the importance and benefits for the adoption of strategic plans for achieving corporate profitability.

Many of the measures needed to tell the story of the strategy may already be present, but in the vast majority of cases they must be supplemented with new and innovative metrics to ensure the execution of strategy (Niven, 2006: 303).

The defined problem and the subject of the research led to the fundamental goal of the research. The aim of the research in this paper is to determine the importance of strategic planning and implementation of the plan as a factor in the successful operation of the company in order to achieve long-term competitiveness and profitability. So, the goal of the research is to answer scientifically based how much the implementation of the strategy contributes to the profitability of the company?

In accordance with the defined problem and the subject of the research, the following hypotheses were set:

H1: The degree of development and implementation of the company's strategy is positively and significantly statistically related to the realization of the net profit margin (ROS)

H2: The degree of development and implementation of the company's strategy is positively and significantly statistically related to the return on equity indicator (ROE)

H3: The degree of development and implementation of the company's strategy is positively and significantly statistically related to the earnings strength indicator (TZS)

Testing the set hypotheses led to concrete scientific knowledge and conclusions about the effectiveness of the implementation of the company's strategy and how much the implementation of strategies contributes to the successful operation of the company. It was also learned how much and to what extent the management and business owners attach importance to the adoption and implementation of the strategy. The analysis of the situation was used to understand the current situation on the adoption and implementation of the strategy was conducted on a sample of business entities in the Republic of Croatia. Data were collected by the survey method and analytical procedures were used in their processing. Statistical methods were used to process the collected data using the SPSS Statistics 17.0 program. The method of abstraction and the method of generalization led to certain knowledge about the researched problem, on the basis of which scientific knowledge about the confirmation or undefined research hypotheses was gained.

Based on the aim of the research, the research sample included companies of different industries, different ownership structures and different sizes. For this scientific research for data collection, a sample of 150 companies from the Republic of Croatia was used, but only 53 feedback surveys were obtained, which form the final sample.

The independent variable (Strateg) was obtained by a weighted average score for the answers to the questions obtained from the survey questionnaire. Dependent variables for all hypotheses (ROS, ROE, TZS) were calculated from the company's financial statements as at December 31, 2017 for which validly completed survey questionnaires were obtained.

For data collection, the survey of opinions and attitudes conducted with an interview questionnaire was used. The survey questionnaire consists of several sections. In its introductory part, the subjects were briefly explained the subject and goal of the research. The questions were designed primarily as closed questions, as questions with offered enumeration answers, to which the respondents answered by choosing the offered answers, or questions with offered intensity answers, to which the respondents answered by evaluating the stated statements. The questions with the offered intensity answers had a Likert scale with five intensities of agreement or disagreement, where the intensities were as follows: 1 - absolutely disagree; 2 - disagree; 3 - neither agree nor disagree; 4 - agree; 5 - absolutely agree. For individual questions from the survey questionnaire, scaled answers were offered as follows: 1 - never; 2 - rarely; 3 - sometimes; 4 - often; 5 - very often. The independent variable of the regression model (Strateg) was obtained by a weighted average score for the answers to the questions obtained from the survey questionnaire are shown in Table 1.

Table 1: Claims use in testing the degree of design and implementation of enterprise strategy

How often does your company revise a strategic plan in line with the company's mission and vision?
The company strategy is sufficiently implemented in your company.
In your opinion, the adoption and implementation of the strategy is necessary for every company.
Your company's strategy takes the form of a designed and implemented strategy.
Your company adopts a formal long-term strategic plan.

Source: *Processing author*

For the independent variable of the regression model (Strateg) obtained by collecting data using the Likert scale, we calculated the internal consistent reliability of the scale by calculating the Cronbach alpha coefficient, which is shown in Table 2.

Table 2: Cronbach's alpha coefficient for the statements used to obtain the variable Strateg

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,544	,642	5

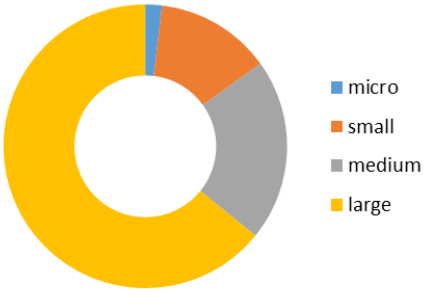
Source: Processing author

Table 2 shows the calculated Cronbach's alpha coefficient of 0.544 while the correlated alpha Cronbach model that is not based on standardized items has a value of 0.642, which indicates (not completely) but a good internal consistency of the elements in the measurement scale. Given the probability that the survey questionnaires were completed only by those respondents who are interested in the research topic, it was not possible to exclude the bias of the respondents in completing the survey questionnaire.

4. Research results

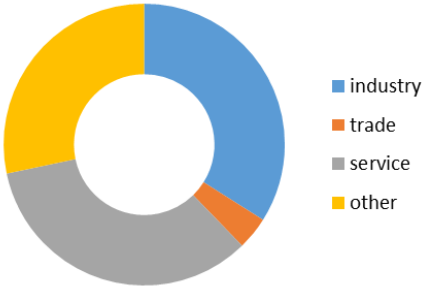
The obtained research results are presented below and for greater clarity, the results are presented as answers to the set goals and hypotheses of the research. There were valid surveys of 53 appropriate questionnaires for data analysis. Of the observed sample by size, most were large enterprises 64.15%, followed by medium-sized enterprises 20.75%, while small and micro enterprises were 13.21% and 1.89%. According to the activity, there were 33.96% of industrial enterprises, while 3.77% belonged to the trade activity, 33.96% belonged to the service activity, while 28.30% belonged to other activities of the observed enterprises from the sample. The structure of equity of the observed companies is as follows: domestic private ownership 35.85%, domestic state ownership 45.28% and combined domestic and foreign ownership is 18.87% of companies in the sample for data analysis.

Chart 1. Companies by size



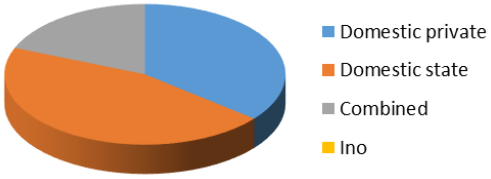
Source: Processing author

Chart 2. Enterprisesbactivity



Source: Processing author

Chart 3. Enterprises by type of equity



Source: Processing author

In general, the correlation coefficient proves the relationship between two variables, which can be high or low, positive or negative. Very high positive correlations are shown by variables that have a positive sign and statistical significance of 0.01 (under the label "** Correlation is significant at the 0.01 level (2-tailed)."). Low correlation is shown by variables that have a statistical significance of 0.05 (under the label "* Correlation is significant at the 0.05 level (2-tailed).").

The correlation coefficients between the observed variables (degree of strategy implementation, net profit margin, return on equity, earnings strength) are shown in Table 3, which shows that there is a significant correlation between strategy implementation and basic earnings, while with other indicators no significant association is seen.

Table 3: Correlation coefficients of variables

		Strateg	ROS	ROE	TSZ
Strateg	Pearson Correlation	1	,185	,225	,316*
	Sig. (2-tailed)		,185	,105	,021
	N	53	53	53	53
ROS	Pearson Correlation	,185	1	,300*	,669**
	Sig. (2-tailed)	,185		,029	,000
	N	53	53	53	53
ROE	Pearson Correlation	,225	,300*	1	,212
	Sig. (2-tailed)	,105	,029		,127
	N	53	53	53	53
TSZ	Pearson Correlation	,316*	,669**	,212	1
	Sig. (2-tailed)	,021	,000	,127	
	N	53	53	53	53
*. Correlation is significant at the 0.05 level (2-tailed).					

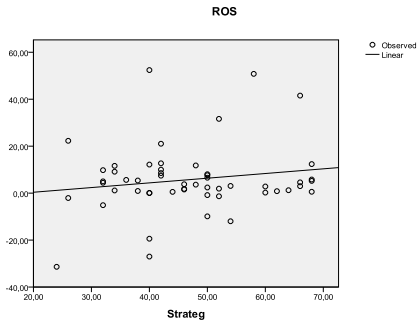
**. Correlation is significant at the 0.01 level (2-tailed).

Source: Processing author

The variables shown in Table 3 show that the implementation of the strategy has a small correlation almost negligible with the net profit (0.185) margin indicator, while slightly better with a return on equity of statistical significance of 0.05, while a more significant correlation between the implementation of the strategy and the indicator of the basic strength of earnings (0.316) of statistical significance is 0.01.

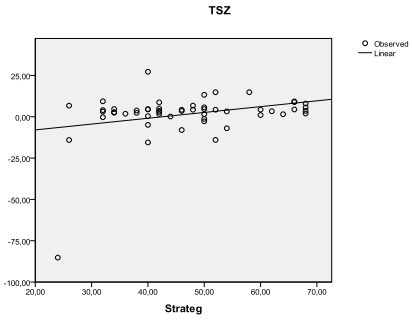
There is a linear positive relationship between the degree of development and implementation of strategy and financial performance (ROS, ROA, TSZ) of the sampled companies.

Chart 4. Scatter diagram implementation strategy and indicators ROS



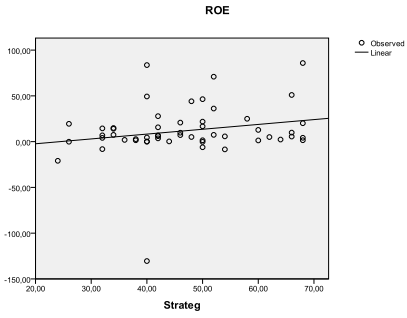
Source: Processing author

Chart 5. Scatter diagram implementation strategy and indicators ROE



Source: Processing author

Chart 6. Scatter diagram implementation strategy and indicators ROS



Source: Processing author

Graphs 4, 5, and 6 show the scatter plots for the observed variables from the research sample. It can be seen from the above graphs that the correlation, although not large, exists and that the variables are positively correlated with each other. The scatter plots for the observed variables show the research results from which a partial linear correlation is visible.

The highest determined correlation between the observed variables is 0.669, which represents a good correlation of significance of 0.01 and does not indicate a problem of multi-correlation. The elimination of the problem of multi-correlation of variables was confirmed based on the calculation of the variance inflation factor (VIF) of the values shown in Table 4. The VIF values are 1,902; 1,099; 1.812 and as there is no single view on what is the value of VIF that points to the problem of multi-correlation, it is often assumed that it is a value of 2.50 as an acceptable level.

Given the obtained VIF values for the regression model of the variables included in this study, there is no problem of multi-correlation. Durbin-Watson for the summary regression model is 2.085 with the number of degrees of freedom 3.49, it is determined that the regression model has no problem of autocorrelation of relation errors, while the correlation coefficient R is 0.331, there is a positive correlation as shown in Table 5.

Table 4: Variance inflation factor (VIF)

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	ROS	,526	1,902
	ROE	,910	1,099
	TSZ	,552	1,812

a. Dependent Variable: Strateg

Source: *Processing author*

Table 5: Data on the summary regression model of the observed variables

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,331[a]	,110	,055	,59502	2,085

a. Predictors: (Constant), TSZ, ROE, ROS

b. Dependent Variable: Strateg

Source: *Processing author*

By testing the regression model, the coefficient of determination is 0.110 and it is not possible to talk about good representativeness of the model, it was determined 11% variation of the variable Strateg, which is statistically significant at the level of 0.05 significance (Sig. = 0.000) can be seen in Table 6. By testing the regression model, the observed variables from the sample did not prove statistically significant since their statistical significance was not confirmed. ROS shows the opposite direction of movement in relation to the indicator Strateg (Sig. = 0.857; ß = -0.034), ROE (Sig. = 0.481; ß = 0.100) and TSZ (Sig. = 0.086; ß = 0.318), and a slight strength of statistical test, type II error.

Table 6: Teat results regression model

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3,472	,093		37,355	,000
	ROS	-,001	,008	-,034	-,181	,857
	ROE	,002	,003	,100	,710	,481
	TSZ	,014	,008	,318	1,754	,086

a. Dependent Variable: Strateg

Source: *Processing author*

By conducting this research, the values of multiple correlation coefficient (R), determination coefficient (R Square), corrected correlation coefficient (Adjuster R Square), standard error of regression estimation (Standard Error of the Estimate), and DW indicator were calculated. The coefficient of determination R^2 is a measure of the utility of the model.

Table 7: Regression model implementation strategy and indicator ROS

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	,164[a]	,027	,008	14,60898	,027	1,412	1	51	,240	1,931

a. Predictors: (Constant), Strateg
b. Dependent Variable: ROS

Source: *Processing author*

From the correlation coefficient R we can see that the correlation between the variables is very small (0.164). The coefficient of determination R^2 is closer to zero than one, so we cannot talk about good representativeness of the model. As for the F ratio, we can see that the empirical F ratio is higher than the theoretical value, based on this with a given level of significance 0.05 and with the number of degrees of freedom (1.51) the H1 is partially accepted, generally cannot be accepted. The implementation of the strategy in companies is positively but not significantly related to the net profit margin indicator. Durbin-Watson has a value of 2 which indicates the absence of auto correlation of relation errors.

Table 8: Regression model implementation strategy and indicator ROE

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	,216[a]	,047	,028	29,03900	,047	2,508	1	51	,119	2,111

a. Predictors: (Constant), Strateg
b. Dependent Variable: ROE

Source: *Processing author*

From the correlation coefficient R we can see that the correlation between the variables exists but it is small. The coefficient of determination R^2 is closer to zero than one, so we cannot talk about good representativeness of the model. Regarding the F ratio, we can see that the empirical F ratio (2,508) is higher than the theoretical value (0,119) and with a given level of significance 0.05 and with the number of degrees of freedom (1.51) the obtained data confirm H2. The degree of implementation of the strategy in companies is positively and partially related to the return on equity indicator. The Durbin-Watson has a value of about 2 which indicates the absence of an auto correlation of the relation errors.

Table 9: Regression model implementation strategy and indicator TSZ

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	,304[a]	,092	,074	13,45269	,092	5,185	1	51	,027	2,192

a. Predictors: (Constant), Strateg
b. Dependent Variable: TSZ

Source: *Processing author*

From the correlation coefficient R we can see that the correlation between the variables exists and is not insignificant (0.304). The coefficient of determination R^2 is closer to zero than one and the F ratio is higher than the theoretical value, with a given level of significance 0.05 and the number of degrees of freedom (1.51) the obtained data confirm the hypothesis, that the implementation of the strategy is statistically positive power of earnings and H3 is confirmed.

5. Constraints of the model and a proposal for future research

Awareness of management and all employees about strategic planning is a key prerequisite for long-term successful business. Empirical research on the relationship of strategic management processes and profitability of the company is based on the conclusions of the survey of attitudes and perceptions of respondents about the degree of development and implementation of strategy in the company is also one of the limitations of the research. In examining attitudes and perceptions related to previously defined statements was used Likert's measurement scale in the compilation of which it is not possible to completely exclude the subjectivity of the researcher, just as it is not possible to exclude the subjectivity of respondents when expressing agreement or disagreement. This method of data collection was chosen because previous research has shown that respondents are often reluctant to provide data on specific measured values because they consider it a trade secret, which can then be overcome by applying the Likert scale in data collection. One of the limitations of the model is that the conclusions are based on the observations of a relatively small sample of respondents, which may call into question the possibility of their generalization. Given that the model is based on the results of statistical data processing in which multivariate analysis methods are applied, which allows processing a large number of variables, the proposal for further research includes a larger sample and other variables to gather additional information and possibly determine patterns of behavior of similar companies characteristics or circumstances in which they operate. As there is no knowledge about similar research, it was not possible to make a comparative analysis of the obtained results with previous research.

Given the statistical significance of the sample of observed dependent variables (Sig. = 0.857; 0.481; 0.086) and Type II error - the strength of the statistical test (ß = 0.034; 0.100; 0.318) as well as a relatively small sample of research and the inability to exclude the impartiality of respondents repeat the research on a larger more representative sample.

6. CONCLUSION

The implementation of this research was intended to prove the extent to which the implementation of the strategy is statistically related to the successful operation of the company. The strategy enables long-term planning of the direction in which the company will act in the future, as well as the prediction of possible directions of action. The implementation of the strategy in companies is positively related to the successful operation of the company. The implementation of the strategy is positively but not significantly related to the net profit margin indicator (0.164), while it is positively and partially related to the return on equity indicator (0.216) and there is a statistically positive correlation with the basic earnings strength indicator (0.304). Although the correlation is not large, it exists, while the variables have a positive correlation with each other. A partial linear correlation can be seen from the scatter plot for the observed variables.

The conclusion is that H1 and H2 are partially and H3 fully confirmed by correlation and regression testing, that strategic planning is an extremely important and essential factor for stable growth and development of the company. The conclusion is that the implementation of the strategy has an important contribution to the successful operation of the company.

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Valentina Vinšalek Stipić

POVEZANOST STRATEŠKIH PROCESA UPRAVLJANJA I POSTIGNUTE KORPORATIVNE PROFITABILNOSTI: DOKAZI IZ HRVATSKE

SAŽETAK

Za strateški menadžment se može reći da se razvio tokom vremena i svakako će se nastaviti razvijati. Kako bi poduzeća bila što uspješnija u svom poslovanju neophodan im je metodološki pristup izrade strateškog plana. Neuspješna implementacija strateških planova je jedan od temeljnih razloga zbog čega poduzeća propadaju ili stagniraju. Implementacija strategije je kompleksan proces jer je posljedica kompleksnih odnosa. U skladu s navedenim, provedeno je empirijsko istraživanje na uzorku od 52 poduzeća Republike Hrvatske. Predmet i cilj istraživanja bio je znanstveno utvrditi važnost donošenja i implementacije dugoročnih strateških planova. Iz provedenog istraživanja došlo se do glavnih rezultata da stupanj implementacije strategije nije u značajnoj mjeri povezan s pokazateljima neto profitne marže (ROS 0,164) i povratom na vlastiti kapital (ROE 0,216), dok je djelomično povezan sa pokazateljem temeljne snage zarade (0,304), ali je značajan za uspješno poslovanje poduzeća.

Provedbom istraživanja došlo se do saznanja kako je strateško planiranje izrazito važan i bitan čimbenik za stabilan rast i razvoj poduzeća. Implementacija strategije ima važan doprinos uspješnom poslovanju poduzeća.

Ključne riječi: *Strateško planiranje, profit, dugoročna profitabilnost poduzeća*

JEL: *O12, O29, C49, G32*

Vernesa Lavić[1]

Azra Hadžiahmetović[2]

CORPORATE INCOME TAX BURDEN FOR SMES - THE CASE OF BOSNIA AND HERZEGOVINA

ABSTRACT

Small and medium enterprises (SMEs) play a significant role in the economic development of both advanced and developing countries. Some earlier research showed that taxation and compliance costs have a significant effect on economic growth, development and performance of the business sector. For this reason, our research focuses on tax compliance costs imposed on the SMEs in Bosnia and Herzegovina (B&H), which is a transition and post-conflict country with a complex tax system structure. This complexity is particularly highlighted in the direct taxation system, hence the focus of this research is on corporate income tax (CIT) compliance costs. Our methodology is based on simulation of tax compliance costs between different entities in B&H - Federation of B&H (FB&H) and the Republika Srpska (RS), as well as measuring the effective tax burden for SMEs in B&H and the region. Our simulation of the CIT return of a company „X "in line with the entity law suggests that the effective tax burden is higher in RS than in FB&H entity. This is further confirmed with the effective tax rate formula applied in the second part of the research using data from the AMADEUS database. This result has an important policy implication for the fiscal authorities in B&H, as very often public discourse goes in the opposite direction to our finding.

Keywords*: SME, corporate income tax, tax burden, tax compliance costs*

JEL: H20, H25, H30, H32

1. INTRODUCTION

Taxation, regardless of collection type, represents the main source of revenue for most countries. For this reason, the developing political strategies to a large extent, are comprised of fiscal measures.

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These strategies differ to some degree in terms of their structure, intent and target groups for which they are being designed, but the common thread is that they are designed to promote sustainable economic development. It is precisely because of this central motive that the countries strive towards creating attractive and competitive tax policies which most commonly include tax incentives, simplified tax procedures and last, but not least low tax rates. Such governmental efforts to differentiate and compete with others in order to attract capital resulted in a tax landscape suitable for tax (harmful) competition, which not only creates imbalance in the distribution of capital, but in many cases harms the small and medium enterprises which are frequently overlooked by the mentioned tax policies. This is particularly alarming considering that the SMEs generate about 90% of the economic activity worldwide. Their contribution to the economy is reason enough to analyse and capture the effects that the introduction of potential fiscal measures might have on this sector. These effects may be multiple (for example, administrative procedures, special tax schemes, etc.) and are mostly reflected in the tax compliance burden.

The corporate income tax ("CIT") component is of particular importance, not only for developing, but also for the developed countries, given the limited capacity of value-added taxation, the political sensitivity of personal income taxation, as well as the unused capacity of potential public revenue hidden in taxing corporate profits, and the underdeveloped laws regulating company taxation. For these reasons, the focus of this paper is CIT.

The shift in focus to the SME sector and the tax compliance costs arising for these companies has recorded a significant increase as countries turn more and more towards this sector. A study by European Commission in 2015 for example, was based on a premise that SMEs, in comparison to multinational enterprises, face significant tax compliance costs, i.e., costs arising out of complying with tax laws and regulations related to corporate income tax. For reasons of complexity and multi-layered administrative structures, simple logic dictates that these costs would be higher in countries that are administratively and politically divided, characterized by political tension, market insecurity and instability, as is the case of Bosnia and Herzegovina. For these reasons, the focus of this paper will be the example of Bosnia and Herzegovina, taking into account the complexity of the country's tax system, particularly in the context of corporate income taxation. Namely, the current fiscal structure of the country requires coordination, regulatory framework of indirect taxation to be implemented at the state level, while other direct taxes are implemented at the level of administrative and political entities. This direct tax system complexity is of particular importance when it comes to corporation taxes, which comprises three different CIT laws, three different tax administrations to implement these laws, which are further broken down into cantonal and/or municipal tax authorities, and three di-

fferent tax returns. The complexity is galvanized for those companies operating and paying CIT in two or more administrative units. It is precisely this complexity that this paper focuses on the structure of CIT and the impact of such a structure on the Bosnian SMEs. The main intent of this paper is to measure the effective tax burden for SMEs in B&H.

2. Literature review

The evolution of studying and measuring compliance costs is usually grouped either by geographic regions (USA, Europe, Asia, East Asia and Australia) or by phases. The first phase of studying this area began with the appearance of the first such studies in North America in the 1930s and 1960s, while the second phase saw this interest expand into Europe in the 1960s and 1970s. Phase three included the international spread of these studies. Most of the studies in the past and more recent times stem from the West, such as the region of North America (e.g., Blumenthal & Slemrod, 1995; Vaillancourt, 1986; Sandford, 1989; Slemrod & Venkatesh, 2002) and Europe (Allers 1994; Collard, et al., 1998; Diaz & Delgado, 1995), Australia and New Zealand (Pope, et al., 1990; Pope et. al., 1991; Wallschutzky & Gibson, 1993; Evans, et al., 1997; Sandford & Hasseldine, 1992). A common thread of these studies is that they all tended to focus on SMEs in developed economies, while the study of tax compliance costs in transition economies has only recently recorded an increase. In the last decade, there has been research of tax compliance studies in countries such as Tanzania (Shekidele, 1999), Brasil (Bertolucci, 2002), India (Chattopadhyay & Das-Gupta, 2002); Croatia (Blažić 2005); (Blažić & Klun, 2005) and others. The challenge in researching transition economies lies in the lack of interest, unorganized and non-cooperative tax authorities as well as complex tax systems and regulations that are subject to frequent change, all of which adds to the increased complexity and consequently, higher tax compliance costs.

When it comes to measuring tax compliance costs, quantitative indicators prevail because of the ease of use and the possibility of formulating these in monetary of other terms. Thus, a majority of research on tax compliance costs uses time spent on monetary or financial units utilized in tax-related activities. Other, non-measuring, i.e., qualitative elements of the compliance costs, as mentioned, are avoided because of the lack of credible interpretation. Instead, studies that do use qualitative indicators tend to descriptively elaborate tax compliance costs. An example of this would be Pierpoint & Auburn (1987) who attempt to offer a framework on researching the psychological component of factors that may predict these costs and their representation in different groups.

There is a general consensus that tax compliance costs can be divided and measured in three different ways:

1. *External costs*, i.e., explicit costs measured through the monetary value of money paid to third parties (external consultants, tax authorities, etc.)
2. *Internal costs*, i.e., implicit costs, measured through employee utilized time on tax-related activities
3. *Psychological* costs measured through taxpayer stress, anxiety and frustration levels.

However, no matter the measurement method used, nearly all research on tax compliance costs indicate their regressive nature. In other words, the smaller the company, the higher the tax compliance costs. In effect, literature review in this area can be summarized as follows:

- *Tax compliance costs are high and significant* - most research shows that taxes imposed onto the taxpayers result in high costs, no matter the measurement method. These costs are linked to the most significant taxes and make up nearly 10% of the total company revenues (Klun, 2004:76).
- *Tax compliance costs are regressive* - Tax compliance costs are determined by company size. The reasons behind this repressiveness are twofold: diseconomies of scale for the SMEs and the fixed component of the tax expense (Evans, 2003).
- *Tax compliance costs increase with tax system complexity* - In countries with complex tax systems, the tax burden in terms of time spent increases by 39%. In cases where two types of tax are under the jurisdiction of two tax authorities, the tax burden increases by 30% (Paying Taxes, 2014).
- *Tax compliance costs comprise the most significant proportion of incurred costs* - Research shows that external costs arising out of complying with tax codes are high for small companies, and that the tax element of such costs represents a significant burden.
- *Tax compliance costs are higher than administration costs* - research shows that administrative costs are lower and make up less than 1% of total generated revenues (Evans, 2003).

Following on from the above, it is reasonable to assume that tax compliance costs are high and negatively affect companies. Specifically, due to the capital limitations and lack of economies of scale, these costs particularly affect small companies. This effect is galvanized in transition economies where tax systems are complex, regulation unclear and tax code implementation is opaque.

Taking into account the specific characteristic of transition economies, a high contribution of direct taxes, i.e., corporate income tax in total revenue, it is reasonable to assume that the tax compliance costs for these countries will stem from corporate income tax. Interestingly, while the number of studies researching tax compliance costs has increased in the transition and developing countries such as Malaysia and Tanzania, some of which focused on Western Balkans, none of these isolated or focused on the issue of corporate income taxation. Furthermore, no such research has been done to date for B&H. When it comes to corporate income taxation, in the post-war period, only three elaborate studies in the area of direct taxation have come to light. Carsimamovic (2006) focused on ex- and post-ante tax rate burden of corporate income taxation, taking into account all companies, regardless of size, while Lazovic-Pita & Pita (n/a) focused on the descriptive presentation of the direct tax system, with special attention paid to corporate income tax. Dzafic et al. (2011), on the other side, aimed at discovering general obstacles to SME development, and touched on taxation to some extent. -

3. Research design and method

This paper relies mainly on the use of verified secondary data sources. Firstly, secondary research comprised a literature review to provide context and show the need for this kind of research. Data collected in this manner related to the review of relevant tax theories, tax compliance costs as well as review of literature in terms of research results in an identical or similar field. Information was collected from a wide range of academic journals, books, official report and others. To ensure credibility and validity, the research comprised searching indexed academic journals such as Journal of Taxation, International Journal of Business and Management, National Tax Journal, and European Economic Review. For a book review, reputable publishers such as Wiley sons, Stanford University Press, Springer, and McGraw-Hill were selected. Official reports used in this paper were published by organisations such as the EBRD, OECD, USAID, IFC and IMF. Furthermore, this research is enriched by analysing the legal framework as well as the data available through the AMADEUS[3] database.

3 AMADEUS database contains comprehensive information on around 21 million companies across Europe. More information on https://www.bvdinfo.com/en-gb/our-products/data/international/amadeus#secondaryMenuAnchor0

The aim of this paper is to measure the effective tax burden for SMEs in B&H, by focusing on the following research questions:

1. What is the effective CIT tax burden difference for company „X", operating in different entities of the country?
2. What is the effective CIT tax burden at the entity and state level as compared to the region?

In order to answer the research questions, this paper contains two research elements that require direct data analysis, as follows:

A. analysis of simulated differences in tax returns in accordance with entity laws, and

B. analysis of the effective tax burden for the SMEs in B&H, and the region, on the basis of data procured via the AMADEUS data base.

3.1. Analysis of simulated differences in tax returns

A high-level analysis of the entity tax laws indicates several significant differences which lead to the conclusion that a company may have different tax effects depending on the entity in which it submits its corporate income tax return. Considering, for example, that the tax law in the RS does not allow the same incentives and tax-deductible expenses, it may be assumed that the tax burden for any company, may be higher in the RS than that in the FB&H. The aim of this analysis is to show the differences in the entity laws, and thereby the tax burden, using a simulated tax return of a company „X". The analysis was based on the CIT Law provisions that came into effect after 2017. In order to maintain consistency in numbers and allow for a better overview of figures, the assumption is made that both companies reported identical income statements[4]. Using uniform numbers and data means that all tax deductible and non-deductible expenses as per the entity legislations have been taken into account with the aim of identifying differences in taxable bases arising after corrections to accounting profits are made.

3.2. Analysis of SME effective tax burden in B&H and region

In order to ensure the credibility of results, in addition to analysing tax returns, it is also necessary to make a conclusion on the effective tax burden for SMEs in the country by analysing financial data of real companies. To achieve this, financial data contained in the AMADEUS database was used.

4 Income statement shown in the appendix

The significance of this database is demonstrated in access to financial data of companies registered worldwide, and the fact that it is the most reputable source for transfer pricing analyses. The data available through this database makes it possible to determine profit margins generated at arm's length as well as potential adjustments necessary to the taxable base.

The analysis of the effective tax burden for this paper will focus on SMEs registered in Serbia, Croatia, and Montenegro. Consistency of the collected data was ensured by using a uniform definition of SMEs based on EU recommendations, the legal form of a limited liability company as well as including only those SMEs of active legal status. The analysis covered over 30 thousand SMEs across the region, with the detailed per country breakdown shown in Table 1 below.

Table 1: Total population analysed for effective tax burden

Per country/region	No. of SMEs
Bosnia and Herzegovina	5,233
FB&H	3,680
RS	*1,553*
Croatia	11,056
Serbia	12,918
Montenegro	1,195
Total	**30,402**

Source: *AMADEUS/ORBIS database, 2019*

The tax burden is measured through the effective tax rate[5] calculated as the percentage of corporate income tax in the total net earnings of the SME. The period to which the collected data pertains is tax years 2014-2018. In order to ensure the credibility of the results, the total population was adjusted to not include:

- Results where EBIT data is not available
- Results where tax cost data is not available
- Negative tax ÷ EBIT percentages

Data was also adjusted for extreme results to achieve equal distribution, meaning that values above the 75th quartile and below the 25th quartile were eliminated from the final data. This method is commonly used in statistics to adjust the data set for outliers. Furthermore, this method is frequently applied in transfer pricing analysis to ensure minimal market data analysis distortions (e.g. Anderson et al., 2016).

5 Calculated as follows: tax costs / earnings before interest and tax (EBIT) - used to calculate tax rate because it does not include other tax types (such as VAT etc.)

4. Research results

4.1. Simulated differences in tax returns

For the purposes of the analysis, let's imagine a company „X" undertaking business activity in the FB&H or RS and has reported trial balance numbers as presented in appendix 1 of this paper. Under the assumption that this company in the last five years (as allowed by law) reported no tax losses, nor had any paid advances, the tax return of company „X" would be as presented in Tables 2 and 3 below. It is important to note that the simulated tax returns include adjustments that are likely to occur in most businesses' profit and loss accounts (salaries, entertainment costs, donations and receivables written-off), and which are similarly defined within the legal context of the entities. Thus, it may be expected that identified differences may be greater once real transactions and other items are taken into account, and that are treated differently by entity laws. Another point to note is that the industry sector may also play a role in determining the level of a burden since for example, manufacturing companies are allowed incentives relating to investment and equipment depreciation. Besides, companies that report significant receivables may have different tax burden in the FB&H than those in the RS due to the different treatment of receivables written off as a deductible expense.

Table 2: Tax return simulations for Company „X", in the FB&H

Item of the tax return	**BAM**
Financial result as per Income Statement	
Business profits for the year	160,914
Business result for the year	**160,914**
Adjustments of expenses	
Expenses for personal income of employees and other individuals paid out exceeding the tax-free amount in accordance with the regulation	15,726
70% of entertainment expenses relating to business activities and total non-deductible entertainment expenses	2,56
Donations for humanitarian, cultural, educational, scientific and sport purposes exceeding 3% of total revenue as well as total expenses for professional sports	18,385
Sponsorship exceeding 2% of total revenue	3,923
Monetary fees and fines	1,599
	42,194
Adjustments of income	
Income from receivables settled but previously written off	15,332
	15,332
Taxable income/loss for the period	
Taxable income	187,775
Taxable base	
Tax losses brought forward	0
Taxable base	187,775
CALCULATED TAX OBLIGATION, CREDITS AND REDUCTION OF TAX OBLIGATION	
Taxable base	187,775
Total tax due @ 10%	**18,778**
Effective tax rate	**11,67%**

Table 3: Tax return simulations for Company „X“, in the RS

Item of the tax return - RS	BAM
INCOME	
Income from business activity	1,053,554
Total gross income	**1,053,554**
Business expenses	
Material expenses	6,375
Fuel and energy expenses	8,26
Gross salaries and employee awards	684,957
Expenses of repairs and maintenance	4,5
Interest expense	14,755
Depreciation expenses	74,479
Other deductibles	3
Total expenses	**796,326**
TAX CALCULATION	
Profit/loss	257,228
Loss carried forward	0
Taxable base	257,228
Taxable base reductions	0
Taxable base	257,228
Tax amount @10%	25,723
Effective tax rate	**15,99%**

As can be seen from the presented simulations, there are differences in the total amount of tax obligation due. Consequently, there are differences in the effective tax burden whereby the effective tax rate for the FB&H is 11,67% while the same analysis for the RS shows a higher tax burden of 15.99%.

4.2. Effective tax burden in B&H and region

As previously mentioned, in order to confirm the analysis of the simulated tax returns, it is necessary to replicate the research on real-life financial data. In line with this, the analysis was conducted on over 30 thousand SMEs in B&H and the region using the financial data available through the AMADEUS database, as previously detailed in Table 1.

Database search criteria used are as follows:

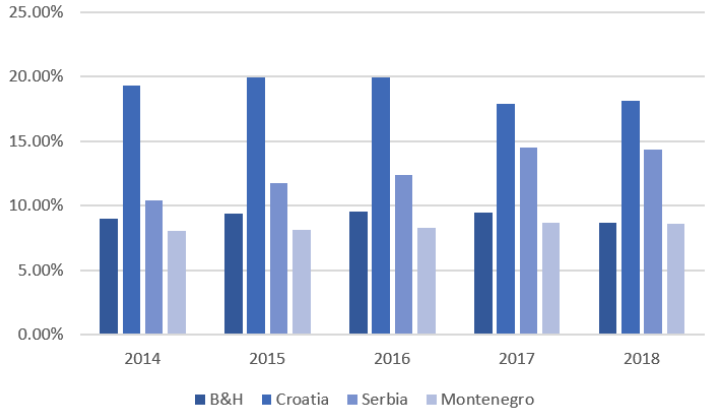
- < 250 employees (as per the EU SME definition)
- Total revenues <EUR 50 million
- Total balance sheet <EUR 43 million
- Companies for which CIT value and EBIT values are available

As described previously, data was adjusted for extreme values in order to achieve normal distribution, and the effective tax burden[6] was calculated using the formula (Lammersen, 2002):

Tax ÷ Earnings before interest and tax

The formula used is an accounting formula widely used to calculate an effective tax rate for corporations. Analysing independently collected financial data of SMEs, based on the median, for effective tax burden showed Croatia to have the highest CIT burden of 19%, while Montenegro has the lowest burden of about 8.36%. The analysis of the tax burden at the country level for B&H, generated an effective tax burden of 9.22%, ranking it among the lowest in the region.

Figure 1: Effective tax burden in the region, 2014-2018

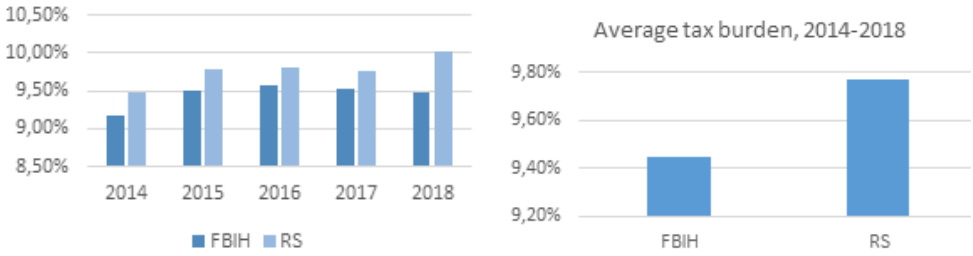


Source: *AMADEUS/ORBIS database, 2019*

Replicating the analysis approach at the level of the FB&H and the RS, the results show a higher effective CIT burden for companies in the RS, which corroborates the results generated by the simulated tax return analysis. Analysis of previous year data, in the period stretch 2014-2018, the data shows a consistently higher burden in the RS. On average, the effective tax burden arising from CIT amounts to 9.77% in the RS and 9.45% in the FB&H.

6 „An effective tax rate would be based not on taxable profit as defined by law but on an economic measure and thus would also consider the impact of the tax base“ (Lammersen,L., (2002:8)).

Figure 2: Effective CIT burden, entity comparison



5. CONCLUSION

Bosnia and Herzegovina is a country characterized by a complex tax system comprised of multi-layered tax administrations, regulations and by-laws, particularly in relation to corporate income taxation. Given such a structure gives rise to unnecessary complexities for companies operating in the country, with the significant effect being directed at small and medium companies. Different CIT regulations enacted at the entity level in the country, in terms of tax-deductibility of costs, availability of tax incentives, etc. gives rise to varying degrees of severity of the tax burden. A high-level analysis of the legislation at the entity level indicated a higher CIT burden for companies registered and operating in the RS. Two-levelled research employed in this paper supported this proposition.

Firstly, a simulated tax return for an imaginary company "X", using uniform financial accounting figures, showed that the tax return prepared based on the RS CIT legislation yielded a higher tax burden, than that of the FB&H. Secondly, a broader analysis, based on independently collected data from the AMADEUS database, again, showed a slightly higher effective tax burden for companies in the RS, than those in the FB&H. Furthermore, the AMADEUS database analysis showed Bosnia and Herzegovina to be at the lower end of the tax-effective burden scale in the regional context.

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PORESKO OPTEREĆENJE U MALIM I SREDNJIM PREDUZEĆIMA- SLUČAJ BOSNE I HERCEGOVINE

SAŽETAK:

Mala i srednja preduzeća (MSP) igraju značajnu ulogu u ekonomskom razvoju razvijenih i zemalja u razvoju. Ranije istraživanje je pokazalo da troškovi oporezivanja i pridržavanja poreznih propisa u velikom dijelu utiču na ekonomski rast, razvoj i performanse poslovnog sektora. Iz ovog razloga, naše istraživanje se fokusira na troškove oporezivanja sa kojima se suočavaju MSP u Bosni i Hercegovini (BiH), a koja je ujedno zemlja u tranziciji, te koja je pretrpjela ratna dejstva, a koja ima kompleksnu poreznu strukturu. Ova kompleksnost posebno je izražena u sistemu direktnog oporezivanja, pa je samim time i fokus ovog istraživanja porez na dobit. Naša metodologija zasniva se na simulaciji troškova oporezivanja, odnosno poreznog opterećenja, za preduzeće „X" koje posluje u Federaciji BiH (FBiH) i entitetu Republika Srpska (RS). Simulacija poreznog bilansa u skladu sa entitetskim zakonima pokazala je da je ovo opterećenje više u RS nego je to slučaj u FBiH. Ovakav rezultat potvrdio je i drugi dio analize koji podrazumijeva mjerenje efektivnog poreznog opterećenja za MSP u BiH i regionu, na osnovu podataka AMADEUS baze podataka. Ovaj rezultat ima važne implikacije za donosioce zakona u smislu kreiranja fiskalnih politika u BiH, jer javni diskurs obično ide u suprotnosti s našim nalazima.

Ključne riječi: *MSP, direktono oporezivanje, porez na dobit, troškovi oporezivanja*

JEL: H20, H25, H30, H32

APPENDICES

CLASS 5 -EXPENSES	BAM	BAM	
Cost of material			
Raw materials and spare parts	6,375		
Fuel and energy	8,260		
Small inventory write-off	200		
Total		**14,835**	
Cost of salaries and other employee expenses			
Salaries	670,868		
Official travel	17,322		
Other employee payments	5,493		
Total		**693,683**	
Manufacturing related expenses			
Transport	7,000		
Maintenance services	4,500		
Total		11,500	
Depreciation			
Tax deductible depreciation	74,479		
Total		**74,479**	
Other expenses			
Entertainment expenses	2,560		
Postage expenses	950		
Other miscellaneous expenses	97		
Sponsorships	25,000		
Scholarships	3,000		
Donations	50,000		
Monetary fees and fines	1,599		
Total		**83,206**	
Financial expenses			
Interest	14,754.92		
Exchange rate differences	457.57		
Total		**15,212.49**	
Total expenses			**892,915.49**
CLASS 6 - INCOME	**BAM**	**BAM**	
Income from sale of goods			
Income from domestic sales	1,009,856.13		
Income from foreign market sales	28,366		
Total		**1,038,222.13**	
Financial income			
Exchange rate differences	275		
Total		**275**	
Other income and deductibles			
Receivables settled, previously written off	15,332		
Total		**15,332**	
Total income			**1,053,829.13**
Profit for the year			**160,913.64**

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THE ROLE AND THE IMPORTANCE OF COMPETENCIES FOR THE EMPLOYABILITY OF UNIVERSITY GRADUATES

SUMMARY

The goal of this work is to explore the effects of various factors that affect the employment of graduates of the University of Zenica. Additional analysis of variables as well as the links between variables will offer the input information that can contribute to the decision-making process in the development of new curriculums. The survey was conducted in Zenica-Doboj Canton, which involved n = 47 respondents. To process data, the following programs were used: Microsoft Excel, SPSS and SmartPL S3 - SEM program. The verification of the validity and the reliability of the measuring scale was carried out by calculating the Cronbach's Alpha coefficient. The review of the set of the hypotheses was carried out by the Regression analysis. The findings revealed that three hypotheses were accepted and one of them was rejected. The set hypotheses confirmed that the adopted expertise of graduates, the level of acquired skills and cooperation of the University with companies has a statistically significant impact on the employability of graduates. The organizational skills of graduates do not have a statistically significant impact on the employability of the University of Zenica graduates.

Keywords: *competencies, employability, professional knowledge, skills, organizational skills*

JEL: *M2; J5; I2; K0*

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1. Literature review

The positive effects of globalisation, the development of information technologies, the standard of life of citizens, the emergence of the coronavirus pandemic and many other factors significantly determine the requirements that the labour market places before employers. Researching the factors that promote labour market dynamics, i.e., factors that contribute to harmonising supply and demand for the workforce has never occupied the economic waistline as it does today. Each higher education institution wants to align its curriculums with the needs of the labour market on one hand, and make the end of their educational institutions competitive and attractive to potential employers, on the other hand. By following this logical trick, many higher education institutions seek to match out-of-the-way compensation of their students and labour market requirements. According to Knight, Yorke (2003), "higher education institutions are often criticized for not preparing graduates for the real contexts involved in their professional practice". Römgens, Scoupe, and Beausaert (2020) define employability as "a competency-based dimension".

A competency-based approach to employability also implies the discussion of what competency means. Recent studies (Hoffmann, 1999; Römgens, I., Scoupe, R., Beausaert, S. 2020) takes this term under different perspectives. There is a lack of clarity about what competencies mean. For instance, some authors (Cockerill, Hunt, 1995; Spencer, Spencer, 1993) assume the complexity of the concept, identifying three different perspectives about competencies also known as knowledge, skills (Katz, 1973), abilities (Ackerman, Heggestad, 1997) or KSA. More recently, some authors (Römgens, I., Scoupe, R., Beausaert, S. (2020) have argued the need for integration of other characteristics, which takes into account the specification of different values, cultures, and motivation. In the context of higher education, employability is considered more than merely 'getting a job' (Harvey, 2003), as it implies a set of competencies-knowledge, skills and abilities-that makes graduates more likely to gain employment and be successful in their chosen jobs. (Yorke, 2006) „This discussion is not new, but still necessary when considering the central role of competencies in the context of higher education. This is one of the reasons why competencies and employability are interrelated concepts. "(Abelha, Fernandes, Meswuita, Seabra, Ferreira-Oliveira, 2020) As Fullan (2016) noted, a whole-system plan is required for a successful and sustained educational change.

Authors Kulović and others (2012:117) state that current literature is abundant in terms such as competitiveness, competency and competencies, which, however, are not clear enough, causing some confusion when interpreting them. Competency (pl. competencies) are complex forms of behaviour involving knowledge skills and abilities.

These concepts in literature are often viewed together with the acronym KSA's (Knowledge, Skills, Abilities), in particular, when studying the role of employees in a broader context. Over the past few years, the term competency, competencies in pl., is increasingly used in literature to explain the reasons for employee work success.

Although, according to Isaković (2015:295) this term, "includes the following factors: abilities, skills and knowledge, which define the results of business activities thus further contributing to the fact that there is still no clear definition of the term competency". It is actually about the term, i.e. the concept, which represents specific qualifications and personal characteristics that an individual should possess in order to do a particular job.

Over time, as new insights emerged, the concept was expanded to KSAO's (Knowledge, Skills, Abilities and Other characteristics), and then there was the notion of competencies that, according to some authors, actually bring the aforementioned knowledge, skills and abilities into the concept, even though the term itself includes the values, motivation and interests of a particular employee. (Sikavica, Hernaus, 2011:85) Scientific confirmation can be found in the works of McClelland (1973), who published the paper in the journal American Psychologist titled: Testing for competence rather than for intelligence, then in a somewhat recent work by Sanchez (2002), who published the paper in the Journal of Business Research titled: Understanding competence-based management identifying and managing five modes of competence and Boyatiz (1982) who published the first research book titled: The Competent Manager: a model for effective performance. In other words, employees aspire to jobs that match their level of knowledge, skills and abilities acquired while studying.

As a result, many higher education institutions seek to harmonise the output requirements of their graduates with the market requirements, which requires a significant effort in order to remove certain obstacles. As Mocanu, Zamfir and Pirciog (2014) say, when harmonising curriculums with the needs of the labour market, there are certain obstacles such as a lack of a general vision that needs to provide an answer to the question about where a higher education institution wants to be.

Furthermore, a low level of quality education while attending high school can significantly reduce the quality of high school students. Lack of quality contributes to reducing students' motivation, which increases their fluctuations. All of this can result in difficulties that prevent attracting employers who have a clear demand in respect to what profile a higher education institution should create. Addressing these obstacles can significantly, as Gawrtcka, Kujawska and Tomaczak (2019) say, help develop the competencies that can define the future of the labour market.

Of course, the inevitable factor that needs to help quality competencies developing involves a comparison of the attitudes of employers and future employees with the desirable competencies of the potential labour market participants. However, the authors did not offer a methodology for the development of high-quality competencies, which can be considered as a shortcoming.

The development of quality competencies poses a challenge to every higher education institution. Employers' attitudes can contribute to determining desirable competencies. However, if we take this approach to the development of competencies, then the higher education institution must adapt the curriculum every year. As a result, most higher education institutions resort to a model of creation of, as the authors of Pugelis and Pileicikene (2012) state, "generic competencies that should be the foundation of higher education curriculums" and then, Boyatzis (1982) and McClelland (1987) also add "specific competencies that should contribute to the recognition of specific employer requirements". The authors believe that generic competencies imply the backbone of the quality study programs, and the specific competencies meet the demands of the labour market. Isakovic (2015:295 finds the reason for determining generic competencies) within the difficulty to "clearly determining the competencies that lead to increasing attempts to determine some general generic competency". Maintaining a permanent link between higher education and the labour market is achieved, as the authors say, by constantly upgrading the specific competencies that the labour market needs.

As Varga, Szir, Bardos and Hajós, (2015) claim „good teacher preparedness that provides more practical knowledge through theoretical training involving student visits to companies belongs to the most relevant factors that enable the development of generic and specific ones. The emergence of a crisis caused by the Coronavirus pandemic requires compensation which forces the need to harmonise curriculums to the new situation. However, when creating or upgrading curriculums, Cerkovskis and Titko (2017) state that it is important to perceive what students find to be important during studying but what also upgrades a certain level of student competence. If high school institutions do not have the practice of respecting students' self-perception, student motivation levels may decline significantly, directly implying an increased rate of student fluctuation.

So if a higher education institution wants to build an image of a respectable institution, it should respect the demands of the labour market, the wishes of students and its own resources. By including student perception, it implies a significant upgrade that means respecting the interests of a key interest group when (re)designing curriculums. Following such practice, there is a justifiable need to explore the compliance of the competencies of the University of Zenica graduates with the needs of the labour market.

2. Methodology

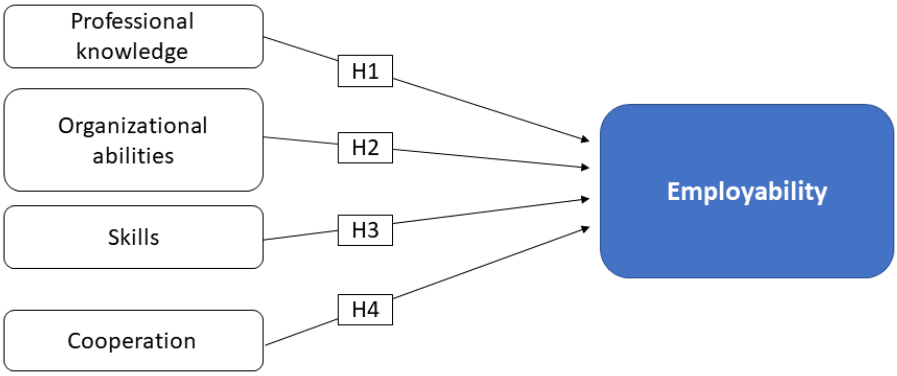
The research instrument used to check research hypotheses defined by the system of hypotheses of this research consists of 11 questions, containing three scales as follows and three open questions:

1. The scale used to identify the acceptability of employment sources for workers. This scale consists of five options in which the respondents express their position on the Likert scale with a preference from 1 to 5.
2. The scale used to identify the perception of Zenica-Doboj Canton businessmen about the acquired knowledge of the University of Zenica graduates. This scale consists of four subscales: Expertise; Organizational abilities; Skills and Innovation. Each of these subscales has five options on a Likert scale to express preference from 1 to 5. The scale has a total of 20 options.
3. The scale used to identify the attitude of businessmen about the importance of adopted knowledge and skills by university graduates. This scale consists of four options in which the respondents express their opinion on a Likert scale with a preference from 1 to 5.and one open-ended question.

The system of hypotheses in this work was created as follows:

- H1 - Professional knowledge affects the employability of UNZE graduates.
- H2 - Organizational abilities affect the employability of UNZE graduates.
- H3 - Level of acquired skills affects the employability of UNZE graduates.
- H4 - University's cooperation with the economy affects the employability of UNZE graduates.

Figure 1: Research model hypothesis



Source: *Authors*

Data gathering was carried out through an online platform. The sample selected n = 100 companies from Zenica-Doboj Canton, out of which n = 47 companies submitted a neatly filled survey questionnaire. Statistical methods below were used to process data:

- Descriptive statistics - a descriptive analysis of the sample and descriptive analysis of factors using frequency tables and graphs, as well as indicators such as arithmetic mean, standard deviation, minimum and maximum value;
- The validity and reliability of the measuring instrument - this chapter shows the results of exploratory factor analysis, as well as validity and reliability tests via Cronbach's Alpha values, factor loads, correlations, AVE values, etc.;
- Inferential statistics - shows a list of hypotheses, a research model, and the results of research at the level of each hypothesis individually, using the Regression method and the IPMA maps.

The following programmes were used for the purposes of these statistical analyses, which are adequate for statistical processing and analysis of data, as follows:

- Microsoft Excel,
- Statistical programme for social sciences (SPSS),
- SmartPLS3 - SEM programme.

3. The interpretation of the research results

3.1. Descriptive analysis

The survey sample is made up of 14.9% microenterprises, 53.2% small businesses, 25.5% medium-sized enterprises and 6% large enterprises.

According to the data presented, it is evident that most of the employer respondents, who took part in this study were based in Zenica (53.19%). The second place in relation to participants' location is shared by Tešanj and Visoko with 8.51% of the total employers participating in the survey.

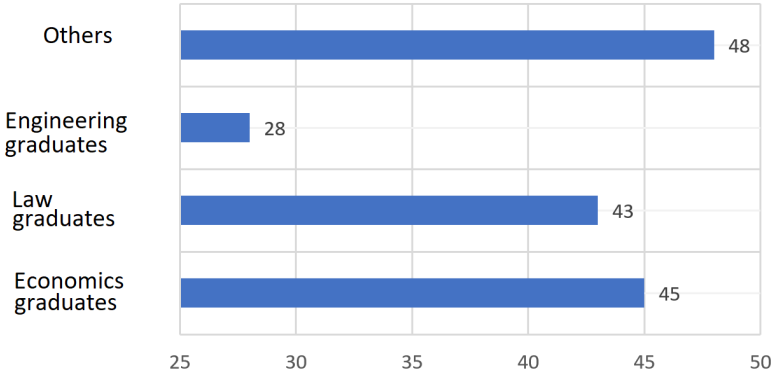
Table 1: Employment of UNZE graduates in employer's company

Status	Number	%
YES	40	85.1
NO	7	14.9
Total	47	100.0

Source: *Authors*

A total of 40 employers responded that the company employed Graduates of the University of Zenica, while only 7 responded negatively. Accordingly, 85.1% of employers surveyed, at the time of their participation in this study, have employed University graduates, which adds to the value of their participation in the study.

Figure 2: Profession of UNZE graduates as employees in employers' companies



Source: *Authors*

Descriptive analysis of the variables of the hypotheses system

Table 2 indicates that the average employer sees the "candidate recommendation", "acquaintance with the candidate", "ad in the media", "social networks", "employment bureaus/portals" as acceptable sources for employment. However, if we compare indicators regardless of the measuring scale, it is significant to point out that the "Candidate Recommendations" indicator has the highest average value, while the "Social Network" indicator has the lowest average value, which suggests that, from an employer's angle, the most important thing for a candidate is to have recommendations.

Table 2: Descriptive analysis of the "Source Acceptability" variable

1- absolutely unacceptable; 2- unacceptable; 3 - I don't have an opinion; 4 - acceptable; 5 - very acceptable						
Code	**Indicator**	**N**	**Min**	**Max**	**Arithmetic Mean**	**Std. Deviation**
PI1	Recommendations for a candidate	47	2	5	4.30	.778
PI2	Acquaintance with the candidate	47	2	5	3.60	.798
PI3	Media ad	47	2	5	3.96	.908
PI4	Social networks	47	1	5	3.51	1.159
PI5	Employment bureau or Portals	47	2	5	3.94	.791
PI	Source Acceptability	47	1	1	3.860	.6775

Source: *Authors*

Describing the expertise of UNZE graduates, Table 3 indicates that the average employer describes the level of "Task Execution", "Application of Professional Terminology", "Problem Identification", "Problem Solving", "Use of Computer Tools" as good. However, if we compare indicators regardless of the measuring scale, it is significant to point out that the "Problem Identification" indicator has the highest average value, while the "Execution of Work Tasks" indicator has the lowest average value, which suggests that from an employer's point of view, the most important thing is that employees can recognise problems, while carrying out work tasks is implied anyway.

Table 3: Descriptive analysis of the "Professional knowledge" variable

1 - very bad; 2 - bad; 3 - I don't have an opinion; 4 - good; 5 very good						
Code	**Indicator**	**N**	**Min**	**Max**	**Arithmetic Mean**	**Std. Deviation**
SZ1	Work tasks performance	47	2	5	3.87	1.055
SZ2	Application of professional terminology	47	2	5	3.89	.983
SZ3	Identification of the problem	47	3	5	4.15	.859
SZ4	Troubleshooting	47	2	5	3.98	.989
SZ5	The use of computer tools	47	2	5	4.04	.955
SZ	Professional knowledge	47	2	5	3.987	.9074

Source: *Authors*

Assessment of the organizational abilities of UNZE graduate employees presented in table 4, the average employer considers that the level of "Plan analysis", "Time Management", "Conflict Management", "Delegating tasks" and "Execution Control" is good. However, if we compare indicators regardless of the measuring scale, it is significant to point out that the "Delegating Tasks" and "Execution Control" indicators received the highest average value, while the Conflict Management indicator has the lowest average value.

If we mention here that all values are very close to the threshold of the value "I don't have an opinion", we come to the clear conclusion that all aspects of the organizational capabilities of UNZE graduates need to be developed, especially when it comes to conflict management.

Table 4: Descriptive analysis of the "Organizational Capability" variable

1 - very bad; 2 - bad; 3 - I don't have an opinion; 4 - good; 5 very good						
Code	**Indicator**	**N**	**Min**	**Max**	**Arithmetic Mean**	**Std. Deviation**
OS1	Plan Analysis	47	1	5	3.57	1.229
OS2	Time Management	47	1	5	3.57	1.175
OS3	Conflict Management	47	1	5	3.51	1.214
OS4	Delegating tasks	47	1	5	3.68	1.144
OS5	Execution control	47	1	5	3.68	1.218
OS	Organizational abilities	47	1.0	5.0	3.604	1.1447

Source: *Authors*

Assessing the acquired skills of UNZE graduates presented in Table 5, the average employer considers that the level of "Efficient Task Performance", "Improvements in Business Processes", "Acquired Knowledge Applied in Practice", "Oral" and "Written Correspondence" is good. However, if we compare the indicators regardless of the measuring scale, it is significant to point out that the "Written Correspondence" indicator has the highest average value, while the "Improving Business Processes" indicator has the lowest average value. It is clear from this that graduates are much better at correspondence, while at the same time they do not make a significant contribution to improving business processes.

Table 5: Descriptive analysis of the "Acquired Skills" variable

1 - very bad; 2 - bad; 3 - I don't have an opinion; 4 - good; 5 - very good						
Code	**Indicator**	**N**	**Min**	**Max**	**Arithmetic Mean**	**Std. Deviation**
SV1	Performs work tasks efficiently	47	1	5	3.81	1.296
SV2	Speeds up business processes	47	1	5	3.55	1.316
SV3	Acquired knowledge applies in practice	47	1	5	3.70	1.350
SV4	Oral correspondence	47	1	5	3.87	1.209
SV5	Written correspondence	47	1	5	3.94	1.241
SV	Acquired skills	47	1.0	5.0	3.774	1.2277

Source: *Authors*

Describing their opinion on the quality of UNZE shown in Table 6, the average employer considers the "Infrastructure of the University", "Expertise of professors", "Quality of teaching processes" and "Confidence in the University" are good indicators. On the other hand, employers do not have a clearly defined position when it comes to the "University presence in the media" indicator. If we compare indicators regardless of the measuring scale, it is significant to point out that the "University Infrastructure" indicator received the highest average value, while the "University presence in the media" indicator has the lowest average value. It is clear from the above that employers have a generally positive opinion on the quality of the University.

Table 6: Descriptive analysis of the "UNZE Quality Opinion" variable

1- very bad; 2 - bad; 3 - I don't have an opinion: 4 - good; 5 - very good						
Code	**Indicator**	**N**	**Min**	**Max**	**Arithmetic Mean**	**Std. Deviation**
KV1	Infrastructure of the University	47	3	5	4.06	.734
KV2	Expertise of professors	47	1	5	3.74	.966
KV3	University presence in the media	47	1	5	3.38	1.226
KV4	Quality of teaching processes	47	3	5	3.89	.699
KV5	Confidence in the University	47	2	5	3.91	.974
KV	Opinion on quality	47	1	5	3.80	0.92

Source: *Authors*

When it comes to UNZE's cooperation with companies, according to the results of the survey shown in Table 7, the average employer does not have a clear position for indicators "Cooperation regarding curriculums", "Cooperation regarding labour market needs", "Cooperation in student scholarship", "Organizing joint professional gatherings" and "Cooperation in scientific research work". It is very interesting that the arithmetic mean is not rated as good for any of the aspects of cooperation. If we compare indicators regardless of the measuring scale, it is significant to point out that the "Student Scholarship Cooperation" indicator has received the highest average value, while the indicator "Cooperation regarding labour market needs" has the lowest average value. It is clear from the above that all aspects of cooperation should be addressed, particularly cooperation regarding the needs of the labour market.

Table 7: De-analysis of the "Cooperation" variable

1- absolutely irrelevant; 2 - irrelevant; 3 - I don't have an opinion; 4 - important; 5 - very important						
Code	**Indicator**	**N**	**Min**	**Max**	**Arithmetic Mean**	**Std. Deviation**
S1	Cooperation regarding curriculums	47	1	5	3.30	1.196
S2	Cooperation regarding labour market needs	47	1	5	3.19	1.116
S3	Cooperation in student scholarship	47	2	5	3.47	.997
S4	Organizing joint professional gatherings	47	1	5	3.30	1.196
S5	Cooperation in scientific research work	47	1	5	3.36	1.258
S	Cooperation	47	1	5	3.324	1.153

Source: *Authors*

Describing their position on the employability of UNZE graduates in Table 8, the average employer considers that all employment indicators such as "Acceptance of challenges", "Determination in business", "Suggesting ideas", "Energy in business", "Persistence in business", "Expertise", "Organizational Ability", "Skills" and "Innovation" are on a good level. If we compare indicators regardless of the measuring scale, it is significant to point out that the "Expertise" indicator has received the highest average value, while the indicators "Suggesting Ideas" and "Energy in Business" have the lowest average value. It is clear from the above that employers have a generally positive opinion on the employability of University graduates, but there is also room for improvement, especially when it comes to proposing ideas and energy in business.

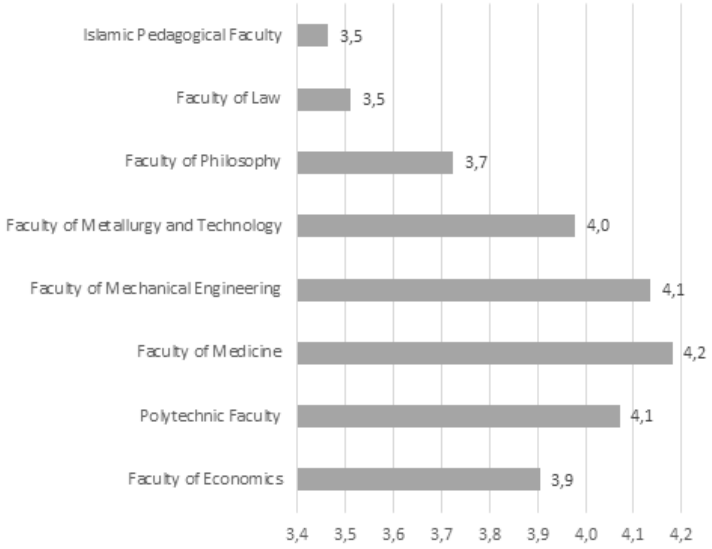
Table 8: Descriptive analysis of the "Employability of the Graduates" variable

1 - very bad; 2 - bad; 3 - I don't have an opinion; 4 - good; 5 - very good						
Code	**Indicator**	**N**	**Min**	**Max**	**Arithmetic Mean**	**Std. Deviation**
Z1	Accepting challenges	47	1	5	3.96	1.268
Z2	Determination in business	47	1	5	3.91	1.248
Z3	Proposing ideas	47	1	5	3.85	1.351
Z4	Energy in business	47	1	5	3.85	1.233
Z5	Persistence in business	47	1	5	4.02	1.310
Z6	Professional knowledge	47	1	5	4.32	1.163
Z7	Organizational ability	47	1	5	4.26	1.052
Z8	Skills	47	1	5	4.23	1.237
Z9	Innovation	47	1	5	4.26	1.206
Z	Employability of the Graduates	47	1	5	4.07	1.135

Source: *Authors*

It can be concluded that from the angle of the average employer, the attractiveness of all faculties as assessed in Figure 3. can be considered as good except for the "Islamic Pedagogical Faculty" for whose attractiveness they did not have a defined attitude. Nevertheless, it is important to point out that the highest average value when it comes to the attractiveness of the faculty was obtained by " The Faculty of Medicine", while the lowest value had "The Faculty of Law" and "The Islamic Pedagogical Faculty ". It is important to note that this result is partly influenced by a small number of employer respondents, as well as ny the sector the employers come from.

Figure 3: Attractiveness of Faculty from the employers' point of view



Source: *Authors*

Based on the results shown in Figure 3, we can see that the most effective for employers is The Faculty of Medicine followed by The Faculty of Polytechnics and The Faculty of Engineering.

For validity and reliability checks, the SPSS software package was primarily used, and an exploitative factor analysis and reliability test were conducted through the value of Cronbach's Alpha.

The results of the exploratory factor analysis are presented in Table 9. All indicators (claims) of the following variables have been in correlation with the factor, which is measured with satisfactory values (above 0.5): (1) Source acceptability, (2) Professional knowledge, (3) Organizational skills, (4) Level of Acquired Skills, (5) Cooperation, (6) Quality Opinion, (7)Employability. Accordingly, the validity of the measuring scales of these variables has been proven and there was no need for any intervention by the researchers in terms of eliminating faulty indicators.

Table 9: Factor load indicators per variable (> 0.5)

SOURCE ACCEPTABILITY	
PI1	.626
PI2	.689
PI3	.794
PI4	.779
PI5	.911

PROFESSIONAL KNOWLEDGE	
SZ1	.974
SZ2	.969
SZ3	.883
SZ4	.984
SZ5	.864

ORGANISATIONAL ABILITIES	
OS1	.968
OS2	.965
OS3	.975
OS4	.914
OS5	.961

(7) EMPLOYABILITY	
Z1	.931
Z2	.961
Z3	.887
Z4	.955
Z5	.955
Z6	.933
Z7	0.840
Z8	0.923
Z9	0.910

LEVEL OF ACQUIRED SKILLS	
SV1	.961
SV2	.932
SV3	.978
SV4	.952
SV5	.963

COOPERATION	
S1	.922
S2	.975
S3	.900
S4	.959
S5	.972

QUALITY OPINION	
KV1	.594
KV2	.834
KV3	.906
KV4	.919
KV5	.896

Source: Authors

The results of the reliability test shown in Table 10 indicate that they undoubtedly fully meet the criterion, given that each of the seven variables had a value of Cronbach's Alpha greater than 0.8, significantly above the 0.7 threshold. Therefore, given that factors with values of 0.7 to 0.8 are satisfactory, in this study, when it comes to the reliability of measuring instruments, the condition is above satisfactory and could be characterized as good and extraordinary. So PI and KV factors have "good reliability" given that values are 0.8 to 0.89. On the other hand, factors SZ, OS, SV, S and Z have shown extraordinary reliability given that Cronbach's Alpha values are above 0.9.

Table 10: Reliability of measurements by variables

Code	Variable	Cronbach's Alpha (>0.7)	N of Items
SA	Source Acceptability	0.81**	5
PK	Professional knowledge	0.96*	5
OA	Organizational abilities	0.97*	5
AS	Level of acquired skills	0.97*	5
Q	Opinion on quality	0.88**	5
C	Cooperation	0.97*	5
E	Employability	0.98*	9
* outstanding reliability ** good reliability			

Source: *Authors*

Additional validity and reliability analysis in the SmartPLS3 program confirmed the results explained previously and obtained by exploratory analysis in the SPSS software package.

Table 11 presents the results of the analysis in the SmartPLS3 program, and it is possible to gain insight into AVE values, Cronbach's Alpha and Composite Reliability. AVE values by all factors are above the 0.5 threshold, which unequivocally indicates satisfactory discriminatory validity. On the other hand, Cronbach's Alpha values and composite reliability values surpass the 0.7 threshold and thus once again indicate the fully reliable measuring scales used for all factors measured in this study.

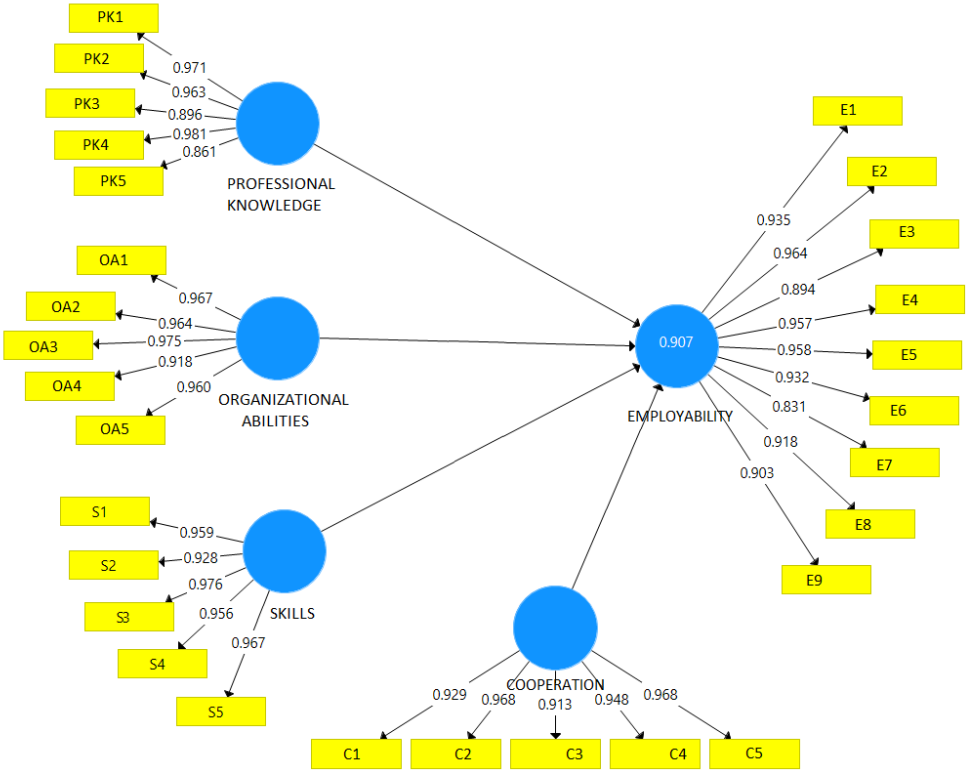
Table 11: Discriminatory validity and reliability according to the results of the analysis in SmartPLS3

Code	Variable	Cronbach's Alpha >0.7	Composite Reliability >0.7	AVE >0.5
OA	ORGANIZATIONAL ABILITIES	0.977	0.982	0.916
S	COOPERATION	0.971	0.977	0.893
SZ	PROFESSIONAL KNOWLEDGE	0.964	0.972	0.875
SV	SKILLS	0.977	0.982	0.916
Z	EMPLOYABILITY	0.978	0.981	0.851

Source: *Authors*

Figure 5 displays factor loads of each indicator by variable measured. It is clear that the values fully confirmed the previously conducted factor analysis in the SPSS program.

Figure 3: Correlation of indicators by variables



Source: *Authors*

The review of the research hypotheses was conducted using regression analysis in the Software Program for Social Research (SPSS). Results of the Regression Analysis show extremely high value "R2" (as much as 0,900), which means that independent variables of the research model explain as much as 90% of the dependent variable. Therefore, the degree of correlation unequivocally indicates that there is an impact of the independent side of the model on the dependent variable. ANOVA table presented below is an important part of the Regression output that explains the overall research model. Sig value of 0.000 (see Table 12) and F value of 94.526 (see Table 12) indicate that model where Cooperation, Professional Knowledge, Organizational Skills and Skills are independent variables. Employability as the main dependent variable is statistically significant. In other words, the effects of the independent side (predictors) altogether have statistically significant effects on the dependent variable.

Table 12: ANOVA table - part of Regression output

ANOVAa						
Model		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
1	Regression	53.363	4	13.341	94.526	.000b
	Residual	5.928	42	.141		
	Total	59.291	46			
a. Dependent Variable: EMPLOYABILITY						
b. Predictors: (Constant), COOPERATION, PROF_KNOWLEDGE, ORG_ABILITIES, SKILLS						

Source: *Authors*

In this regard, it is necessary to emphasize that the p value of 0.000 which is below the value of 0.05, and at the reliability interval of 95% indicates that the model can be accepted as correct, logical and relevant.

Table 13: Results of hypotheses testing (95% confidence interval)

#	Hypothesis	Status	Beta	Sig.
H1	Professional knowledge affects employability of UNZE graduates	Supported	-0.180	.009
H2	Organisational abilities affect the employability of UNZE graduates	Declined	0.135	.454
H3	Level of acquired skills affects the employability of UNZE graduates	Supported	0.948	.000
H4	University's cooperation with the economy affects the employability of UNZE graduates	Supported	-0.139	.010

Source: *Authors*

4. CONCLUSIONS

The H1 hypothesis is supported with a p-value of 0.009 (<0.05) and there is no doubt that expertise is a statistically significant factor in the perception of employers when it comes to the employability of graduates of the University of Zenica. However, the beta coefficient value of -0.180 indicates that currently the relationship is negative, which means that as the Professional knowledge of graduates increases for one unit, their Employability decreases by 0.18. The obtained negative relationship indicates that from the perspective of employers, the professional knowledge of graduates that they currently gain at the University does not contribute to their employability, which is of alarming importance for revising the content of curriculums that lead to such perception. Professional knowledge being taught at the University must be in line with the needs of employers, and the negative beta coefficient of -0.180 is an alarm that currently this is not the case. Therefore, it is important that the University of Zenica evaluates all study programs from the perspective of employers and to determine in which way it can improve them all to deliver professional knowledge that will be contributing to the employability of graduates.

The H2 hypothesis was rejected with a p-value of 0.454 (>0.05), indicating that from an employer's point of view, the organizational skills of graduates at this point are not a statistically significant predictor of their employability. A beta coefficient of 0.135 indicates that the effects of graduates' organizational skills are positive for their employability. In other words, if organizational skills increase by 1, their employability increases by 0.135. Therefore, despite the statistically insignificant effects at 95% confidence interval, the University of Zenica should not neglect the organizational skills of graduates. Instead, it should make efforts to keep the organizational capabilities of graduates at an even higher level.

The H3 hypothesis is supported with a p-value of 0,000 (<0.05) and there is no doubt that the level of acquired skills is a statistically significant factor in the eyes of employers when it comes to the employability of graduates of the University of Zenica. Not surprisingly, the beta coefficient of 0.948 indicated very strong effects of acquired skills on graduates' employability. It seems that employers appreciate skills and that the University of Zenica produces graduates with a high level of acquired skills. If acquired skills increase by one unit, the employability of graduates increases by even 0.948. Therefore, the University of Zenica must maintain and continuously improve all processes that will take the acquired skills of the University graduates to an even higher level.

The H4 hypothesis is supported with a p-value of 0.010 (<0.05) and there is no doubt that the University's co-operation with the economy is a statistically significant factor in the eyes of employers when it comes to the employability of graduates of the University of Zenica. The beta coefficient of -0.139 indicates that if the University's cooperation (in its current form) increases by one unit, the employability of graduates decreases by 0.139. This leads to the conclusion that University's cooperation with the economy exists, it has statistically significant effects on employability, but its current form is not adequate from the perspective of its contribution to graduates' employability. Therefore, it is extremely important to revise the current form of cooperation between University and the economy and improve it in such a way that will make it contributing to the graduates' employability, instead of downgrading it.

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ULOGA I ZNAČAJ KOMPETENCIJA NA ZAPOŠLJAVANJE DIPLOMANATA UNIVERZITETA

SAŽETAK

Cilj ovog rada je istražiti efekte različitih faktora koji utječu na zapošljavanje diplomanata Univerziteta u Zenici. Dodatnim analizama varijabli kao i veza među varijablama ponudit će se ulazne informacije koje mogu doprinijeti u procesu odlučivanja inoviranja novih nastavnih programa. Istraživanje je provedeno u Zeničko-dobojskom kantonu u okviru kojeg je učestvovalo n = 47 respodenata. Za obradu podataka korišteni su programi: Microsoft Excel, SPSS i SmartPL S3 - SEM program. Provjera validnosti i pouzdanosti mjerne skale provedena je izračunavanjem koeficijenta Cronbach Alpha. Provjera postavljenih hipoteza provedena je Regresionom analizom varijabli kojom su od četiri postavljene hipoteze tri prihvaćene te jedna odbačena. Postavljenim hipotezama potvrđeno je da usvojena stručna znanja diplomanata, nivo stečenih vještina i saradnja Univerziteta s privredom ima statistički značajan utjecaj na zapošljavanje diplomanata. Organizacijske sposobnosti diplomanata nemaju statistički značajan utjecaj na zapošljavanje diplomanata Univerziteta u Zenici.

Ključne riječi: *kompetencije, zapošljavanje, stručna znanja, vještine, organizacijske sposobnosti*

JEL: *M2; J5; I2; K0,*

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