



## PERFORMANCE OF ISLAMIC BANKING AND CONVENTIONAL BANKING IN BOSNIA AND HERZEGOVINA – A COMPARATIVE STUDY

*Original scientific paper*

Edin Djedovic<sup>1</sup>, Irfan Djedovic<sup>2</sup>, Adna Alijagic<sup>3</sup>

<sup>1</sup>Cantonal Administration for Inspection Affairs of Tuzla Canton

<sup>2</sup>International Burch University

<sup>3</sup>Bachelor of International Business

Received: 2021/10/21

Accepted: 2022/2/15

### ABSTRACT

*The main objective of this study is to compare the performance of two areas of banking in Bosnia and Herzegovina, that is, Islamic and conventional banking. In order to measure the performance of two banking sectors, profitability, efficiency and liquidity measures are implemented. For the purpose of the study secondary data from both banking sectors is used. The time interval covered in the study spans from 2008 to 2020. Ratio analysis and independent sample t-test is applied in order to check the characteristics of two banking sectors. Currently, studies investigating comparative performance of these two banking sectors in BiH are rare, therefore theoretical contribution will be evident. Practically, it will help bank customers to understand how Islamic banking sector performs relative to the conventional banking sector. Also, bank managers of selected banks will be able to compare performance of their banks relative to the other banks in terms of the ratios used in the study. The limitation of the study is that in Bosnia and Herzegovina there is only one bank that operates according to Islamic banking principles, which will represent Islamic banking sector in this study.*

**Keywords:** Islamic banking, conventional banking, performance, profitability, efficiency, liquidity, BiH

### INTRODUCTION

Islamic Banking alludes to a strategy for banking that depends on Islamic Law (Shariah) which restricts revenue based banking and allows just benefit sharing based banking. The idea depends on a section of the Holy Quran that says “Allah has permitted just authentic exchange and denies interest” (Ahmad & Haron, 2002).

Islamic model follows a different model of financial intermediation. Concept of Islamic banking is old, while Islamic banking system has been introduced in the last quarter of the 20<sup>th</sup> century. Some of the modes of Islamic banking/finance include *Mudarabah* (profit-sharing and loss-bearing), *Wadiah* (safekeeping), *Musharaka* (joint-venture), *Murabahah* (cost-plus) and *Ijara* (leasing). Beginning in the 1960s, Islamic

banking resurfaced in the modern world, and since 1975, many new interest-free banks have opened. While the majority of these institutions were founded in Muslim countries, Islamic banks also opened in Western Europe during the early 1980s. In addition, national interest-free banking systems have been developed by the governments of Iran, Sudan, and Pakistan. There are more than 300 banks and 250 mutual funds around the world that comply with Islamic principles. Between 2000 and 2016, Islamic banks’ capital grew from \$200 billion to close to \$3 trillion in 2016. This growth is largely due to the rising economies of Muslim countries (especially those that have benefited from the rising price of oil).

#### Correspondence to:

Edin Djedovic, Cantonal Administration for Inspection Affairs of Tuzla Canton

Phone: +387 61 731129

E-mail: e\_djedovich@hotmail.com

One of the primary differences between conventional banking systems and Islamic banking is that Islamic banking prohibits *usury* and *speculation*. Shariah strictly prohibits any form of speculation or gambling, which is referred to as *maisir*. Shariah also prohibits taking interest on loans. The practices of Islamic banking are usually traced back to businesspeople in the Middle East who started engaging in financial transactions with businesspeople in Europe during the Medieval era (Ahmed et al., 2010).

In general, Islamic banking institutions tend to be more risk averse in their investment practices. At the same time, Eastern countries, despite numerous political turmoils and vicissitudes, have managed to maintain economic growth, which is why in recent years the global economic trend is Islamic banking - a quality alternative to the modern financial system. Namely, the conventional financial system recognizes debt contracts, ie. gains and losses are divided asymmetrically. Thus, the borrower bears a higher risk when taking a loan (liquidity risk of the economy, economic cycle, etc.), and the state provides instruments of coercion or deposit insurance that encourages financial institutions to be exposed to excessive risks. Such a system also encourages the creation of moral hazard, the emergence of a multitude of asymmetric information in all participants, and insufficient quality control of all participants in the financial system. On the other hand, the concept of Islamic banking is based on the so-called Islamic savings where the saver is the investor. At the end of the business year the depositor receives a profit as a percentage of the invested funds in proportion to the percentage of the bank's profit. In case the bank makes a loss - the saver makes a proportional percentage loss. Thus, Islamic banking gives at least equal (if not greater) importance to the ethical-moral and even social dimension within the religiously acceptable dimension in order to achieve a socially acceptable distribution of wealth (ie equality), and in the spirit of solidarity.

Justice and fairness are built into the fundamental principles of Islamic banking, and the proclaimed goal is to achieve equality in society, for the benefit of society as a whole, in the spirit of teaching the Islamic religion (as well as other monotheistic religions) according to which achieving "higher goals" is above any material benefits (Haron et al., 1994).

However, Islamic banks face a number of challenges and problems in their operations - from not understanding the nature and essence of this concept, to the risk of establishing it, but probably the biggest problem is the lack of adequate legislation to support the concept of Islamic banking. It is particularly pronounced for the countries of the European continental circle, with the exception of Bosnia and Herzegovina. There are certain initiatives to change the regulations governing the functioning of the banking sector as a whole, but it remains to be seen in which direction this activity will take place.

## ISLAMIC BANKING IN BOSNIA AND HERZEGOVINA

Bosnia and Herzegovina is a transitional country trying to get back on tracks after the aggression of 1990th (Smolo, 2011). Bosnia and Herzegovina emerged from the former republic of Yugoslavia as Europe's smallest economy with a gross national income of just over \$8 billion and a per capita income of around \$2,000 (Wilson, 2006).

According to the official statistical data in 2013, the number of Muslim population in Bosnia and Herzegovina was 1.790.454. This means the size of the Muslim community is much smaller than that of France or Germany, and at the same time larger than the Muslim community in the United Kingdom. However it is much less affluent.

As a state with a Muslim majority, the potential for Islamic banking and finance development in Bosnia and Herzegovina would appear promising. In practice, the spread of Islamic banking has been limited. Some of the reasons are found in the fact that the economic, legal and financial systems are all relatively complex and rigid. Also, there are some political obstacles that are additionally slowing down or sometimes even stopping this process. All in all, given the small size of the economy, the existing banking law, uncertainties over property rights and the fragmented nature of the financial system the process of developing Islamic banking and finance will be slow and hard. However, there is the enthusiasm of the Muslim community to undertake their financial transactions in a *Shari'ah* compliant manner.

In October 2000 Bosna Bank International d.d. (BBI) was established in Sarajevo. Until now, it is the only bank in Bosnia and Herzegovina that is to operate in accordance to Islamic financial principles. The founders of the bank are Islamic Development Bank 45,46%, Dubai Islamic Bank 27.27% and Abu Dhabi Islamic Bank 27.27%. The domestic *Law on banks* brought in accordance to conventional banks does not respect the attributes of Islamic *interest-free* model of functioning. Nevertheless, the existing law frame is not an obstacle for forming Islamic banks.

Islamic banks can provide efficient banking services to the nation if they are supported with appropriate banking laws, and regulations (Sarker, 1999). Unfortunately, since there is no law regulating Islamic banking and finance, even BBI is regulated according to the laws applied to the conventional banks (Smolo, 2011). Therefore, the local *Law on Banks* does not respect specificities of Islamic interest-free model of business activities, since it was adopted at the time in which only conventional banks existed. Due to this fact BBI faced some difficulties in getting a license. But on 13 March 2002 it received a permit from the Banking Agency of the Federation of Bosnia and Herzegovina to participate in internal payments operations, which meant its cheques and electronic payments were accepted by other local banks. In November 2002 BBI received a deposit insurance license from the Deposit Insurance Agency of Bosnia and Herzegovina (Wilson, 2006).

Currently, based on the researched literature it can be stated that the studies focusing on the performance of Islamic banking in BiH are rare. Efendic (2011; 2017) conducted studies about the efficiency of Islamic banks in BiH. Therefore, this study will make a huge contribution to the literature regarding banking sector in BiH, with emphasis on Islamic banking. It will contribute to the current rare existing literature. Furthermore, it will contribute to the users of banking services in BiH to better understand Islamic banking performance relative to the conventional banking sector in BiH.

## **RESEARCH OBJECTIVES**

Based on the above paragraphs, it can be stated that the main objective of the study is to compare the performance of two areas of banking in Bosnia and Herzegovina, that is, Islamic and conventional banking. In order to measure the performance of two banking sectors profitability, liquidity and efficiency measures are implemented. Another objective of the study is to bring closer Islamic banking and performance of the Islamic bank in Bosnia and Herzegovina to bank customers in general.

## **LITERATURE REVIEW**

There are many studies investigating the differences between the performance of Islamic and conventional banking in different parts of the world. Different studies used different techniques to measure the variables. The most frequently used technique in this area is ratio analysis. There are different results found in the previous studies and in the next paragraphs there is a review of various studies.

How can we measure bank's performance? There are many ways to measure bank's performance for example using financial ratios and advanced statistical method such as Stochastic Frontier Approach (SFA) and Data Envelopment Analysis (DEA).

The easiest and popular method in assessing the performance of Islamic banks is using financial ratios, e.g.; (Samad & Hassan, 1999; Samad, 2004; Olson & Zoubi, 2008).

Various indexes have been provided by financial management theories for measuring bank's performance. Using accounting ratios is one of them. To measure performance, financial ratios have been used quite commonly and extensively in the literature. For example, bank regulators use financial ratios to evaluate bank's performance Samad and Hassan (2000), Sabi (1996), and Samad (1999), gave employed ratios for evaluating a bank's performance.

Furthermore, bank liquidity is influenced by many internal and external factors. Unlike conventional literature, there are limited empirical studies devoted to the liquidity of Islamic bank.

Liquidity is an important factor in the banking industry to increase public trust. Liquidity describes the ability of banks to accommodate withdrawal of deposits and

other liabilities efficiently and to cover the increase in loan funds and investment portfolios. Banks that have an adequate level of liquidity can obtain the necessary funds (by increasing liabilities, securing, or sell assets) immediately and at a reasonable cost (Van Greuning & Brajovic, 2011).

Only a few studies have aimed to identify determinants of liquidity.

## **PERFORMANCE OF ISLAMIC VS CONVENTIONAL BANKS**

Performance of Islamic versus conventional banks is widely explored in the literature. However, literature exploring performance of Islamic bank in BiH compared to conventional banks in BiH is very rare.

The market share of Islamic banking is still small in the global financial sector; however, it is growing fast in many countries, especially in the Middle East and Asian regions (International Monetary Fund, 2015). In theory, there are many differences between Islamic and conventional banks. Nonetheless, these two types of institutions compete in the same banking arena, and some claim that the Islamic ones showed stronger resilience, on average, during the global financial crisis e.g. (Hasan & Dridi, 2010). Therefore, it is not surprising that Islamic banks have attracted considerable attention by academics, policy makers, and other market practitioners.

A growing number of studies investigate the differences in the performance between the two types of banks. A number of recent studies compare the performance of Islamic and conventional banks with the use of individual financial ratios.

The findings of these studies are mixed. For instance, Srairi (2010) conclude that Islamic banks are, on average, less cost and profit efficient than conventional banks. Bader et al. (2008) conclude that there are no significant differences. Johnes et al. (2014) find that Islamic banks are typically on a par with conventional ones in terms of gross efficiency, significantly higher on net efficiency and significantly lower on type efficiency. Second, an important drawback is that while these indicators capture adequately the efficiency of banks in terms of transforming their inputs into outputs, they usually fail to take into account other aspects like risk and liquidity.

Other studies compare the financial ratios of the banks, focusing on individual aspects like capital adequacy (Beck et al., 2013), deposits and loans growth Karim et al. (2014), credit risk Kabir et al. (2015), bank insolvency risk Bourkhis and Nabi (2013), and profitability Beck et al. (2013). The conclusions of these studies, as for the relative performance of the two groups across different dimensions, are often conflicting. For example, Beck et al. (2013) find that Islamic banks are less cost-effective, but have a higher intermediation ratio, higher asset quality and are better capitalized, whereas at the same time there are no differences in terms of insolvency risk and profitability.

In addition, there are several more studies that are exploring comparative performance between Islamic and conventional banks.

Study done by Ramlan and Adnan (2016) analyzes the profitability in Islamic Banks and Conventional Banks in Malaysia. This study finds that Islamic Banks are more profitable than Conventional Banks whereas Total Loan to Total Asset for Islamic bank is higher than Conventional bank.

Study conducted by Aziz et al. (2016) investigates financial performance of Islamic and conventional banks operating in Pakistan for the year 2006-2014. For comparison purpose five Islamic and five similar sized conventional banks have been selected. The comparison has been made on average values of different ratios of both Islamic and conventional banks. The comparison shows that Islamic banks performance has been better in terms of efficiency, return and asset quality. However Islamic banks are struggling in terms of advances, investment, liquidity, deposits and capital as conventional banks performance is better in these areas.

Similar studies were also conducted in the Middle East countries. It is evident in the research of Kader, et al. (2007), where comparative financial performance of Islamic banks and conventional banks in the UAE has been examined. The findings indicated that there were no major difference between Islamic banks and conventional banks with respect to profitability and liquidity.

Samad (2004) examined the comparative performance of Bahrain's interest-free Islamic banks and the interest-based conventional commercial banks during 1991-2001. It has been realized that there exists a significant difference in credit performance between the two sets of banks. However, the study finds no major difference in profitability and liquidity performances between Islamic banks and conventional banks.

Efendic (2011) investigated the efficiency of banking sector in BiH with special reference to relative efficiency of the existing Islamic bank. According to majority of indicators, Islamic bank has lower efficiency comparing to their conventional counterparts.

Comparative analysis is often used in literature to measure performance of similar organizations. Financial ratio analysis is one of the tools which have been used extensively in literature to measure and compare performance of banks (Elyasiani et al., 1994; Sabi, 1996; Saleh & Zeitun, 2006; Samad, 1999; Samad & Hassan, 2000).

## HYPOTHESES OF THE STUDY

According to the main objectives and presented literature review of the studies regarding performance of Islamic and conventional banking systems, following research hypotheses are developed.

**H<sub>1</sub>:** "There is no statistically significant difference in profitability of Islamic banking compared to conventional banking in BiH".

**H<sub>2</sub>:** "There is no statistically significant difference in liquidity of Islamic banking compared to conventional banking in BiH"

**H<sub>3</sub>:** "There is no statistically significant difference in efficiency of Islamic banking compared to conventional banking in BiH"

## DATA AND METHODOLOGY

For the purpose of this study secondary data of Islamic bank in BiH and four conventional banks, are used. These conventional banks are selected since their relative market share was relatively close to the market share of the Islamic bank in Bosnia and Herzegovina at the time when the research was conducted.

Therefore, comparing these banks with the Islamic bank has been considered as suitable. The data is collected from the financial statements of the banks that are publicly available, ranging from 2008 to 2020. Ratio analysis is used for comparison between two types of banking systems. Furthermore, additional statistical test used for this purpose is independent samples t-test to test the difference. Microsoft Excel is used to calculate ratios, while SPSS software is used to analyze the data.

Three different aspects are analysed, including bank profitability, efficiency and liquidity. In order to perform the analysis, financial ratios that represent the aspects of banking sector performance were used, including Return on Asset (ROA) ( $\text{Net Income} / \text{Average Total Assets}$ ); Return on Equity (ROE) ( $\text{Net Income} / \text{Average Shareholder's Equity}$ ); Loan to Deposit Ratio (LDR) ( $\text{Total Loans} / \text{Total Deposits}$ ); Current Ratio (CR) ( $\text{Current Assets} / \text{Current Liabilities}$ ); Asset Utilization Ratio (AU) ( $\text{Revenue} / \text{Total Assets}$ ) and Operating Efficiency Ratio (OE) ( $\text{Operating Expenses} / \text{Operating Revenue}$ ).

For the conventional banks the averages of the four banks are taken into consideration, which represent the conventional banking sector results.

## EMPIRICAL ANALYSIS AND RESULTS

In this section the results of the ratio analysis and independent sample t-test will be presented. Confidence interval used to explain the results of the independent samples t test analysis is 95%.

### Profitability

#### Ratio analysis

In order to measure and compare profitability of the banking sectors in BiH two ratios are used, namely Return on Assets (ROA) and Return on Equity (ROE). In the following Tables results of the ratio analysis are presented.



Table 1. ROA and ROE results for conventional banks and Islamic bank in BiH

Return on Assets (ROA)			Return on Equity (ROE)		
YEAR	CONVENTIONAL BANKS (AVERAGE)	ISLAMIC BANK	YEAR	CONVENTIONAL BANKS (AVERAGE)	ISLAMIC BANK
2008	.2%	.1%	2008	5.6%	3.6%
2009	.0%	.2%	2009	9.8%	7.5%
2010	.2%	.1%	2010	9.5%	6.8%
2011	.6%	.6%	2011	8.8%	6.1%
2012	.6%	.6%	2012	9.0%	4.8%
2013	.7%	.5%	2013	8.2%	5.8%
2014	.9%	.6%	2014	6.8%	4.4%
2015	1.1%	.8%	2015	5.6%	3.4%
2016	1.3%	.8%	2016	5.5%	4.8%
2017	1.1%	.9%	2017	5.3%	4.0%
2018	1.2%	1.0%	2018	2.3%	.8%
2019	1.3%	.9%	2019	.4%	.9%
2020	.7%	.4%	2020	3.2%	.3%

Based on the results of ratio analysis it can be stated that return on assets (ROA) for conventional banks and Islamic bank are almost similar in the period from 2008 to 2012. After 2012 it can be stated that conventional banking sector has slightly higher Return on assets compared to the Islamic bank.

Furthermore, the results of return on equity (ROE) analysis show that conventional banking sector showed slightly better results than the Islamic bank for the all period observed in the study.

**Independent Samples T test**

In order to check whether the scores of the financial ratios related to the profitability of banking sectors are significantly different, Independent Sample t test is used. In the following Tables results of the Independent Samples t test and group statistics results are presented.

Table 2. Group Statistics for ROA

Bank	N	Mean	Std. Deviation
Conventional banks	13	.007643	.004289008
Islamic bank	13	.005873	.003080972

Table 3. Independent Samples Test for ROA

	t	df	Sig. (2-tailed)
Equal variances assumed	-1.368	24	.184

Note: 95% confidence interval

The results of the analysis presented in Table 3 show the significance value of .184 which is higher than the level of significance level used in the test (.05). It suggests that mean scores among conventional banking sector and the Islamic bank are not significantly different.

Therefore, we can assume that mean scores of ROA ratio among the groups are not significantly different.

Table 4. Group Statistics for ROE

Bank	N	Mean	Std. Deviation
Conventional banks (Average)	13	.061604	.029279632
Islamic bank	13	.041101	.022793306

Table 5. Independent Samples t Test for ROE

	t	df	Sig. (2-tailed)
Equal variances assumed	1.992	24	.058

Note: 95% confidence interval

The results of the analysis presented in Table 5 show the significance value of .058 which is higher than the level of significance level used in the test (.05). It suggests that mean scores among conventional banking sector and the Islamic bank are not significantly different. Therefore, we can assume that mean scores of ROE ratio among the groups are not significantly different.

Based on the overall results of the independent samples t test for the profitability ratios used in the study, it can be stated that there is no statistically significant difference among two banking sectors in terms of profitability for the observed period.

**Liquidity**

**Ratio analysis**

In order to measure and compare liquidity of the banking sectors in BiH two ratios are used, namely Loan to Deposit Ratio (LDR), Current Ratio (CR).

In the following Table results of the ratio analysis are presented.

Table 6. LDR and CR results for conventional banks and Islamic bank in BiH

Loan to Deposit Ratio (LDR)			Current Ratio (CR)		
YEAR	CONVENTIONAL BANKS (AVERAGE)	ISLAMIC BANK	YEAR	CONVENTIONAL BANKS (AVERAGE)	ISLAMIC BANK
2008	91%	105%	2008	112%	133%
2009	99%	85%	2009	112%	125%
2010	97%	93%	2010	111%	119%
2011	95%	90%	2011	113%	118%
2012	97%	95%	2012	110%	100%
2013	98%	94%	2013	114%	118%
2014	95%	105%	2014	113%	117%
2015	91%	103%	2015	116%	116%
2016	89%	100%	2016	112%	120%
2017	84%	93%	2017	120%	118%
2018	85%	99%	2018	120%	117%
2019	84%	91%	2019	115%	114%
2020	80%	82%	2020	115%	113%

Based on the results of the ratio analysis for Loan to Deposit Ratio (LDR) for the period from 2009 to 2013 conventional banking sector shows slightly higher results, while for the period from 2014 to 2020 the Islamic bank shows slightly higher results, as well as for the year 2008. In general it can be stated in general the results are quite similar over the observed time period. Furthermore, based on the results for current ratio (CR) analysis it can be stated that the results for the observed period are quite similar, with slight differences. The difference is slightly higher for 2008, 2009 and 2012.

### Independent Samples T Test

In order to check whether the scores of the financial ratios related to the liquidity of banking sectors are significantly different, Independent Sample t test is used.

In the following Tables results of the Independent Samples t test and group statistics results are presented.

Table 7. Group Statistics for LDR

Bank	N	Mean	Std. Deviation
Conventional banks (Average)	13	.910752	.063294379
Islamic bank	13	.950919	.071415714

Table 8. Independent Samples t Test for LDR

	t	df	Sig. (2-tailed)
Equal variances assumed	-1.518	24	.142

Note: 95% confidence interval

The results of the analysis presented in Table 8 show the significance value of .142 which is higher than the level of significance level used in the test (.05). It suggests that mean scores among conventional banking sector and the Islamic bank are not significantly different.

Therefore, we can assume that mean scores of LDR ratio among the groups are not significantly different.

Table 9. Group Statistics for CR

Bank	N	Mean	Std. Deviation
Conventional banks (Average)	13	1.139368	.032829633
Islamic bank	13	1.17482	.073105337

Table 10. Independent Samples t Test for CR

	t	df	Sig. (2-tailed)
Equal variances assumed	-1.595	24	.142

Note: 95% confidence interval

The results of the analysis presented in Table 10 show the significance value of .124 which is higher than the level of significance level used in the test (.05). It suggests that mean scores among conventional banking sector and the Islamic bank are not significantly different. Therefore, we can assume that mean scores of CR ratio among the groups are not significantly different.

Based on the overall results of the independent samples t test for the liquidity ratios used in the study, it can be stated that there is no statistically significant difference among two banking sectors in terms of liquidity for the observed period.

### Efficiency

#### Ratio analysis

In order to measure and compare efficiency of the banking sectors in BiH two ratios are used, namely Operating efficiency (OE), Asset Utilization (AU). In the following Table results of the ratio analysis are presented.

Table 11. OE and AU results for conventional banks and Islamic bank in BiH

Operating Efficiency (OE)			Asset Utilization (AU)		
YEAR	CONVENTIONAL BANKS (AVERAGE)	ISLAMIC BANK	YEAR	CONVENTIONAL BANKS (AVERAGE)	ISLAMIC BANK
2008	39%	39%	2008	7%	8%
2009	38%	56%	2009	7%	7%
2010	33%	40%	2010	7%	7%
2011	32%	37%	2011	7%	7%
2012	32%	36%	2012	8%	6%
2013	31%	38%	2013	7%	5%
2014	30%	36%	2014	7%	5%
2015	27%	31%	2015	7%	5%
2016	23%	27%	2016	7%	5%
2017	22%	24%	2017	6%	5%
2018	18%	15%	2018	5%	5%
2019	21%	24%	2019	5%	4%
2020	21%	24%	2020	5%	4%

Based on the results of the ratio analysis it can be stated that operating efficiency (OE) of the Islamic bank is slightly higher than conventional banking sector operating efficiency, except for year 2018. However, the differences are very low.

Furthermore, the results of ratio analysis for asset utilization (AU) ratio show almost similar results for both banking sectors, with slightly higher results for conventional banking sector for the period from 2012 to 2017.

**Independent Samples T test**

In order to check whether the scores of the financial ratios related to the efficiency of banking sectors are significantly different, Independent Sample t test is used. In the following Tables results of the Independent Samples t test and group statistics for OE and AU results are presented.

Table 12. Group Statistics for OE

Bank	N	Mean	Std. Deviation
Conventional banks (Average)	13	.282031	.067076373
Islamic bank	13	.329537	.103444205

Table 13. Independent Samples t Test for OE

	t	df	Sig. (2-tailed)
Equal variances assumed	-1.389	24	.177

Note: 95% confidence interval

The results of the analysis presented in Table 13 show the significance value of .177 which is higher than the level of significance level used in the test (.05). It suggests that mean scores among conventional banking sector and the Islamic bank are not significantly different. Therefore, we can assume that mean scores of OE ratio among the groups are not significantly different.

Table 14. Group Statistics for AU

Bank	N	Mean	Std. Deviation
Conventional banks (Average)	13	.064714	.009449788
Islamic bank	13	.055364	.011889425

Table 15. Independent Samples t Test for AU

	t	df	Sig. (2-tailed)
Equal variances assumed	2.22	24	.036

Note: 95% confidence interval

The results of the analysis presented in Table 15 show the significance value of .036 which is lower than the level of significance level used in the test (.05). It suggests that mean scores among conventional banking sector and the Islamic bank are significantly different. Therefore, we can assume that mean scores of AU ratio among the groups are significantly different.

Based on the overall results of the independent samples t test for the efficiency ratios used in the study, it can be stated that there is no statistically significant difference among two banking sectors in terms of liquidity measured through OE ratio for the observed period. However, from the perspective of AU ratio, it can be stated that there is a statistically significant difference between the two banking sectors for the observed period in terms of efficiency.

**DISCUSSION**

The main objective of this study was to compare the performance of two areas of banking in Bosnia and Herzegovina, that is, Islamic and conventional banking. According to the literature reviewed, it was expected that the research hypotheses developed for this study will be supported. Based on the results, the first hypothesis of the study: *There is no statistically significant difference in profitability of Islamic banking*

compared to conventional banking in BiH" is fully supported, since both of the financial ratios including Return to Assets (ROA) and Return on Equity (ROE) showed that there is no statistically significant difference between two banking sectors in terms of profitability. Furthermore, the second research hypothesis developed for this study: "There is no statistically significant difference in liquidity of Islamic banking compared to conventional banking in BiH" is fully supported, since both of the financial ratios including Loan to Deposit Ratio (LDR) and Current Ratio (CR) showed that there is no statistically significant difference between two banking sectors in terms of liquidity. The third research hypothesis developed for this study: "There is no statistically significant difference in efficiency of Islamic banking compared to conventional banking in BiH" is partially supported since one of the two ratios, namely Operating Efficiency Ratio (OE) showed that there is no statistically significant difference between two banking sectors in terms of efficiency.

However, the second ratio used to investigate the third hypothesis of the study, namely Asset Utilization Ratio (AU) showed that there is a statistically significant difference among two banking sectors. This shows that conventional banks are comparatively more efficient in utilization of the assets in generating total income (revenue) than that of Islamic bank from the perspective of this ratio. This is in line with the study conducted by Efendic (2011), which also focused on comparison of efficiency of two banking sectors in Bosnia and Herzegovina. However, the results for the other financial ratios used in the study, namely ROA, ROE, LDR, CR and OE are in line with the prevailing literature.

Theoretical contribution of the study is that this is one of the pioneer studies that empirically compares financial performance of the two banking sectors in BiH. Therefore, this study fills the gap and opens space for the further studies for the banking sectors in Bosnia and Herzegovina. Furthermore, practical implication of the study is twofold. Firstly, this can be a good indicator for bank managers to evaluate the position of the banks in terms of financial ratios. Secondly, the results can show the Islamic bank customers that even though Islamic bank follows specific rules while operating, the financial results presented in the study show that Islamic bank is performing in an almost similar way. Therefore, being an Islamic bank customer in Bosnia and Herzegovina does not bring any additional risk. Furthermore, the results show that Islamic bank can be an option for all the customers regardless of their religious beliefs, since it operates similarly to the conventional banks in Bosnia and Herzegovina in terms of the empirical ratios.

## CONCLUSION

The main objective of this study is to compare the performance of two areas of banking in Bosnia and Herzegovina, that is, Islamic and conventional banking. In order to measure the performance of two banking sectors profitability, efficiency and liquidity measures are implemented. For the purpose of the study

secondary data from both banking sectors is used. Ratio analysis and two sample t test were applied in order to check the characteristics of two banking sectors.

The results of the study showed that conventional banking sector and Islamic banking sector perform very similar in terms of profitability, liquidity and efficiency, represented through the financial ratios examined in the study, including Return on Assets (ROA), Return on Equity (ROE), Loan to Deposit Ratio (LDR), Current ratio (CR) and Operating Efficiency (OE). However, the results showed statistically significant difference in terms of Asset Utilization (AU), where conventional banking sector showed slightly better results.

Currently, studies investigating the comparative performance of these two banking sectors in BiH are rare, therefore theoretical contribution is evident.

Practically, it helped bank customers to understand how Islamic banking sector performs relative to the conventional. Also, bank managers of selected banks will be able to compare performance of their banks relative to the other banks in terms of the ratios used in the study. The limitation of the study is that in Bosnia and Herzegovina there is only one bank that operates according to Islamic banking principles, which represented Islamic banking sector in this study.

## REFERENCES

- Ahmad, N., & Haron, S., (2002). Perceptions of Malaysian corporate customers towards Islamic banking products & services. *International Journal of Islamic Financial Services*, 3(4).
- Ahmed, A., Rehman, K., & Saif, M. I. (2010). Islamic Banking Experience of Pakistan: Comparison of Islamic & Conventional Banks. *International Journal of Business Management*, 5(2), 137-144.
- Aziz, S., Husin, M., & Hashmi, S.H. (2016). Performance of Islamic and Conventional Banks in Pakistan: A Comparative Study. *International Journal of Economics and Financial Issues*, 6(4), 1383-1391.
- Bader, M. K. I., Mohamad, S., Ariff, M., & Hassan, T. (2008). Cost, revenue, and profitefficiency of Islamic versus conventional banks: international evidence using dataenvelopment analysis. *Islam. Econ. Stud.* 15, 23-76.
- Beck, T., Demirgüç-Kunt, A., & Merrouche, O., (2013). Islamic vs. conventional banking: business model, efficiency and stability. *J. Bank. Financ.* 37, 433-447.
- Bourkhis, K., & Nabi, M. S., (2013). Islamic and conventional banks' soundness during the 2007–2008 financial crisis. *Rev. Financ. Econ.* 22, 68-77.
- Efendic, V., (2011). Efficiency of the Banking Sector Of Bosnia–Herzegovina with Special Reference to Relative Efficiency of the Existing Islamic Bank. *8th International Conference on Islamic Economics and Finance*.
- Efendic, V., (2017). Efficiency of Islamic and Conventional Banks: Empirical evidence from Bosnia and Herzegovina. *Journal for Islamic Economics, Banking and Finance* 13(4), 66-90.
- Elyasiani, E., Mehdian, S., & Rezvanian, R. (1994). An empirical test of association between production and financial performance: The case of the commercial banking industry. *Applied Financial Economics*, 4(1), 55-60.
- Haron, S., Ahmad, N., & Planisek, S.L. (1994). Bank Patronage Factors of Muslim and Non-Muslim Customers. *International Journal of Bank Marketing*, 12(1), 32-40. <https://doi.org/10.1108/02652329410049599>



- Hasan, M., & Dridi, J., (2010). The Effects of the Global Crisis on Islamic and Conventional Banks: A Comparative Study, IMF Working Paper WP 10/201.
- International Monetary Fund, (2015). *IMF Annual Report 2015: Tackling Challenges Together*.
- Johnes, J., Izzeldin, M., & Pappas, V., (2014). A comparison of performance of Islamic and conventional banks 2004–2009. *J. Econ. Behav. Organ.* 103, S93-S107.
- Kabir, M.N., Worthington, A., Rakesh Gupta, R., Comparative credit risk in Islamic and conventional bank, *Pac.-Basin Financ. J.* vol. 34, 327-353.
- Kader, J. M., Asarpota, A. J. and Al-Maghaireh, A. (2007). Comparative Financial Performance of Islamic Banks vis-à-vis Conventional Banks in the UAE. Proceeding on Annual Student Research Symposium and the Chancellor's Undergraduate Research Award. (Online) Available: <http://sra.uaeu.ac.ae/CURA/Proceedings> (May 31, 2007).
- Karim, M. A., Hassan, M. K., Hassan, T., & Mohamad, S., (2014). Capital adequacy and lending and deposit behaviors of conventional and Islamic banks. *Pac.-Basin Financ. J.* 28, 58-75.
- Olson, D., & Zoubi, T. A. (2008). Using accounting ratios to distinguish between Islamic and conventional banks in the GCC region. *The International Journal of Accounting*, 43(1), 45-65.
- Ramlan, H., & Adnan, M. S., (2016). The Profitability of Islamic and Conventional Bank: Case study in Malaysia. *Procedia Economics and Finance.* 35, 359-367.
- Sabi, M. (1996) Comparative Analysis of Foreign and Domestic Bank Operation in Hungary." *Journal of Comparative Economics*, 22, 179-188.
- Saleh, A. S., & Zeitun, R. (2006). Islamic Banking Performance in the Middle East: A Case Study of Jordan. Department of Economics, University of Wollongong, <https://ro.uow.edu.au/commwkpapers/157>
- Samad, A., (2004). Islamic banking and finance in theory and practice: The experience of Malaysia and Bahrain. *The American Journal of Islamic Social Sciences* 22(2), 69-86.
- Samad, A. (2004). Performance of Interest-free Islamic banks vis-à-vis Interest-based Conventional Banks of Bahrain. *IJUM Journal of Economics and Management*, 12(2): 1-15.
- Samad, A. (1999), Comparative efficiency of the Islamic bank vis-à-vis conventional banks in Malaysia. *IJUM Journal of Economics and Management*, 7(1), 1-27.
- Samad, A., & Hassan, M. K. (2000), The performance of Malaysian Islamic bank during 1984-1997: An exploratory study. *International Journal of Islamic Financial Services*, 1(3), 1-14.
- Sarker, A. A. (1999). Islamic banking in Bangladesh: Performance, problems & prospects. *International Journal of Islamic Financial Services*, 1(3).
- Smolo, E. (2011). An Overview of Microfinance Sector in Bosnia and Herzegovina: Is There a Room for Islamic Microfinance?. *Journal of Islamic Economics, Banking and Finance*, 7(2), 85-105.
- Srairi, S. A. (2010). Cost and Profit Efficiency of Conventional and Islamic Banks in GCC Countries. *Journal of Productivity Analysis*, 34 (1): 45-62.
- Wilson, R. (2006). *Bosnia and Herzegovina might not be considered a heartland of the Ummah*. Retrieved January 24, 2012 from <http://www.zawya.com/story.cfm/sidzawya20060702104851>.
- Van Greuning, H., & Brajovic, S. (2011). Analisis Resiko Perbankan. Jakarta: Salemba Empat.