

# COMPARATIVE ANALYSIS OF CONVENTIONAL AND ISLAMIC BANKING: IMPORTANCE OF MARKET REGULATION

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# **COMPARATIVE ANALYSIS OF CONVENTIONAL AND ISLAMIC BANKING: IMPORTANCE OF MARKET REGULATION<sup>1</sup>**

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### ***Abstract***

*Unlike conventional banks, whose main goal is maximizing profit based on loans, Islamic banks comply with the Islamic law (Shariah), which strictly prohibits the use of interest. Because of this is precise characteristic of Islamic banks, many were skeptical when the first Islamic banks were established, considering that interest-free banking can't survive. Despite this skepticism, Islamic banks are one of the fastest growing financial industries. Interest-free banking doesn't mean banking without profit, but a more stable and secure ethical alternative, because instead of interest, Islamic banks receive fees and commissions for their services, participate in a profit(loss)-sharing with their clients and they are protected with contracts. The purpose of this paper is to identify and analyze the similarities and differences*

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*between conventional and Islamic banks and draw conclusions about the stability and efficiency of conventional and Islamic banks before, during and after the crisis. In obtaining these results, special attention was given to the phenomenon of the banking sector regulation, highlighting the advantages of regulation over Adam Smith's "invisible hand" as one of the key reasons for the last economic crisis. From the example of conventional and Islamic banks, it becomes clear that any regulation policy needs to be carefully adapted to the specific conditions of individual industries, and that the same basic principles and uniform legal solutions for all market participants will not achieve desired results, as pointed out by the Nobel laureate, Jean Tirole.*

**Keywords:** *Conventional vs Islamic banks, financial crisis, regulations, efficiency, stability.*

## 1. INTRODUCTION

Banks whose primary goal is to maximize profits represent the most significant financial institutions in most countries. Unlike this fact which refers to conventional banks (hereafter CBs), Islamic banks (hereafter IBs) are trying to be socially responsible while operating in accordance with religious principles, prohibiting the use of interest and following the model of profit and loss sharing with their clients. Despite its relatively short history compared to CBs, IBs and Islamic finance in general represent one of the fastest growing financial industries.

The financial crisis of 2007-2008 had a global impact on banking institutions; therefore this research focuses on the effect of the financial crisis on CBs and IBs' financial stability and efficiency, with a special emphasis on the importance of regulation in the banking sector, which is also described by Jean Tirole, an economist and a Nobel Prize winner. It is becoming clear that bank regulatory measures should be in alliance with banking principles conditioned by economic, institutional and cultural environment.

Considering the differences in business operations between CBs and IBs, as well as the difference in the approach to regulation between the stated banks, which exist only due to the principles according to which they operate, *the focus of this research paper* is on the differences in the operations of these banks as well as on the impact of these differences on the stability and efficiency of CBs and IBs. In this regard, *the objective of the paper* is to analyze CBs and IBs' characteristics, explore the differences and similarities in their business, provide an overview of empirical studies on the stability and efficiency of these banks prior to, during and after the last financial crisis, and finally, to draw conclusions about the impact of CBs and IBs' specific characteristics of business on the stability and efficiency of these banks.

## 2. HISTORICAL DEVELOPMENT OF BANKING

Further in the paper, the development of conventional and Islamic banking is described. Even though in its early forms conventional banking is over 5000 years

older than Islamic, analyzing their intense development, it is noticeable that conventional banking has a kind of historical advantage of about 500 years.

## 2.1. Development of Conventional Banks

The first precursors of banks can be traced back to ancient times (the Middle East, Greece, Rome), with the emergence of exchange of goods in the areas rich in natural resources. In the period from 3400 to 3200 BC in the Middle East, the appearance of banks was related to religious beliefs, thus the temples were bank founders. After Hammurabi's Code on the Banks from 2500 BC, the banking changes from a religious to a commercial activity, it is taken out of the temples and the real banking industry begins. Still, the banks as we know them develop only with the emergence of money. The first beginnings of banking similar to modern conventional banking were seen in Italy, in the region of Lombardy, while Casa di San Giorgio in Genoa is considered the first bank and was established in 1407.

Interestingly, following the development of banks in Italy in the 15<sup>th</sup> century, Benedikt Kotruljević from Dubrovnik, in his book "On Trade and the Perfect Merchant" from 1458 (published in Venice in 1573), besides trading, merchants, market, monetary and commercial ethics, writes about banking instruments, credit loans and interest rates (Cerović, et al., 2012, p. 37). In his book, Kotruljević describes bankers as merchants rather than moneylenders, because according to him, loans were considered support for which commission was paid, not interest, and if there is no interest, there is no usury (Perišin, 1996, p. 102).

The development of banking through history was largely influenced by the growing human needs in the fields of production and trade. The increasing concentration of capital in production and trade resulted in an increasing concentration of capital in banking. Various economic and political conditions led to new processes in banking as we know it today, so the period between the 19<sup>th</sup> century and the 1<sup>st</sup> World War is characterized by the process of concentration of banks. The period between the 1<sup>st</sup> and the 2<sup>nd</sup> World War is characterized by bank specialization, whereas the development of modern banking is seen through the process of globalization. According to Nikolić and Pečarić (2007, p. 198), this globalization process initiated de-specialization of banking operations whose goal is to create a bank as a universal financial institution which offers all services. The de-specialization process is a precondition for their survival in the globalized financial market and a way to fight off stiff competition from non-bank institutions.

## 2.2. Development of Islamic Banks

The establishment of the first interest-free bank in Egypt in 1963 is considered the official beginning of Islamic banking (Ahmad, 2014, p. 158; Hadžić, 2005, p. 18). In 1974, the Organization of Islamic Countries (OIC) founded an IB called Islamic Development Bank (IDB), whose goal was to promote economic development in Muslim countries and providing the funds for the development in

accordance with the rules of Sharia<sup>2</sup>. By the end of 1970s, several banking systems were founded in the Muslim world; first private commercial bank in Dubai in 1975, in Sudan (Faisal Islamic Bank of Sudan) in 1977 and in Bahrain (Bahrain Islamic bank) in 1979 (Institute of Islamic Banking and Insurance, The Islamic Banker).

In the early stages of growth of the Islamic financial market in the 1980s, IBs were faced with the lack of quality investment opportunities, which enabled CBs from the West to become mediators in utilizing the funds of IBs. Therefore, Western banks helped IBs to direct the funds in business and trade-related activities, by agreeing that a merchant buys goods on behalf of an IB and sells them at an interest rate margin. Western banks noticed the significance of Islamic financial markets and started to offer Islamic financial products through so called *Islamic windows*<sup>3</sup>, attracting the clients directly, without IBs' mediation.

Today the world counts over 300 IBs in more than 70 countries, and except in Muslim countries they can be found in the following parts of the world: Australia, the Bahamas, Denmark, France, Ireland, Luxembourg, Germany, the USA, Switzerland, the UK, as well as Albania and Bosnia and Herzegovina, the only Southeast Europe countries in which there are banks that operate on Islamic financial principles (Hadžić, 2005, p. 25).

It should be noted that in Muslim countries today there are dual banking systems, i. e. the systems that comprise of both CB and IB. The example of the first country with a dual banking system is the United Arab Emirates, where the bank was established in Dubai in 1973 (Dubai Islamic Bank), that resembled the conventional commercial bank in the way it operated, but without paying and receiving interests (El Massah and Al-Sayed, 2015, p. 69).

### **3. BASIC CHARACTERISTICS, SIMILARITIES AND DIFFERENCES BETWEEN ISLAMIC AND CONVENTIONAL BANKING SYSTEM**

The origins of Islam and its prophet Muhammad laid a foundation for the Islamic financial system. It is built on religious principles and laws (*Sharia*) which imply that trade is allowed by Allah, who prohibits usury and the existence of interests (*riba*) as a safe, predetermined and fixed income. Therefore, Islamic banking is based on an agreement between the bank and its clients about profit and loss sharing.

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<sup>2</sup> Islamic religious law

<sup>3</sup> *Islamic windows* are not independent financial institutions, but specialized departments within conventional financial institutions, offering their clients the products that comply with Islamic Sharia Law. Due to the growing demand for Sharia-compliant products and the fear of losing clients, non-western CBs started to offer Islamic windows as well.

In Islamic banking, money represents potential capital until it is invested and united with human work through business activities of production, trade and services based on moral, ethical and religious principles (Čočić, 2012, p. 215).

According to Hadžić (2005, p. 51), Islamic ideology defines (criticizes) lending of the money at an interest rate as a way for the rich (those who have the capital) to make profit without giving anything in return for the income (interest) they receive. This Islamic approach to interest resembles the approach of ancient philosophers (Aristotle) and classical economists (Adam Smith)<sup>4</sup>. Islamic teachings indicate that interest discourages people from production and mutual exchange of manufactured goods. If the interest is forbidden, it is considered that individuals borrow to each other with pleasure and thus do good deeds not only to others, but to themselves as well. According to Islam, the interest slows down the process of investment, and consequently, economic and overall social development. In Islamic banking, the risk is shared between the bank and the capital user. The bank is directly interested in the success of a client and participates actively in managing a future company. With such a utilization of funds, it can generate greater profits than from interest income; nevertheless, risk exposure is higher.

Imam and Kpodar (2010, p. 4) argue that, along with the prohibition of interest (*riba*), operations of an IB should abide by other restrictions of Islamic law as well:

- the prohibition of activities that generate asymmetric information, hence encouraging excessive uncertainty, i. e. financial uncertainty (*gharar*),
- the prohibition of speculative activities (*maysir*),
- the prohibition of activities that negatively impact the society (*haram*).

Considering those religious principles by which IBs operate, western analysts were skeptical about the establishment of first IBs, as they believed the absence of interest in the banking system would disable bank operations, arguing that interest-free banking implies (Iqbal and Mirakhor, 2009, p. 16):

- unlimited demand for available funds and the lack of supply,
- the lack of savings,
- unrealized investments and growth,
- the failure of monetary policy, because no instrument of liquidity management could exist without a fixed, predetermined interest rate, and

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<sup>4</sup>In addition to the prohibition of interest, financial justice is considered the central concept of Islamic banking, which Subbarao (2009) associates with liberal views of Adam Smith, who fought against state control, trade monopoly and advocated a free market (Hasan and Dridi, 2010, p. 7-8). As Smith sees it, in order to maximize profit, an entrepreneur invests their capital where they realize the highest production and thus becomes driven by “an invisible hand”. Furthermore, he considers the wealth is not just the invested money, but also useful work which creates value. This can be compared to IBs that invest (lend) their capital with a goal of maximizing profit and share both profit and risk with the debtor, and since there is no interest, they comply with the principles of ethical business (lending to individuals without interest rates results in collective well-being).

- one-way “escape” of capital.

Based on the above, the question is how Islamic financial system and IBs can perform banking operations like CBs, and what services (financial arrangements) they offer to their clients. Despite the interest-free principle, IBs have the right to charge a fee and a commission for the work done. Furthermore, they protect their business on the basis of clearly defined contracts that will be explained below.

As Antić illustrates (2008, p. 64), the forms of financial arrangements in the Islamic financial system, on which business relations are based, can be divided into:

- *Mudarabah* (agent arrangement) – a contractual agreement between at least two parties in which one contracting party is a financier of the other party – the entrepreneur, where the profits are shared according to pre-agreed terms, while the losses are borne by the financier of the project.
- *Musharakah* (joint venture) – a contractual agreement where two or more parties, that want to become partners in a business endeavor, contribute financial resources and thus gain the right of profit sharing in any ratio agreed, while losses are shared in proportion to respective contribution to capital.
- *Murabaha* (cost plus financing) – a purchase from a financier on a deferred payment basis; the bank purchases goods for the client and gives it to their use, binding them to repay the purchase cost plus an agreed profit margin in more instalments.
- *Qard Hassan* (benevolent loans) – crediting without contractual fees.
- *Ijara, Ijara wa-Iqtina* (lease arrangements) – correspond to operational and financial leasing in conventional financial systems.
- *Istisna'* (concession agreement) – a model suitable for long-term financing of the acquisition of capital goods.

Among the aforementioned financial arrangements, *Mudarabah* and *Musharakah* represent the two fundamental forms upon which Islamic finance is based, which makes them the most common in Islamic banking.

The main difference between CBs and IBs can be seen in risk sharing and the prohibition of interest. Those are the basic characteristics of Islamic banking, while conventional banks, with the use of interest and various instruments to insure loan repayments, protect themselves against the risk of capital investments. In this way, CBs entirely transfer the risk to the debtor, thus becoming uninterested in the client's business success. Clients' deposits in IBs are considered safer because, since only successful investments bring them profit, IBs will not invest into uncertain projects. Therefore, IBs are investment-oriented (most products carry this feature) and concerned for the client's success (as banks share the same “destiny” with clients). In addition, IBs are considered socially more responsible than CBs (they do not finance the industry of alcohol, tobacco, prostitution, pornography, gamble, military) and religiously-bound (within the limits of their power, they help clients who are in trouble against their will).

On the other hand, IBs(Bosna Bank International) offer its customers different products and services such as those inCBs:

- the use of interest-free credit cards, for which a person pays a one-time fee (which includes the costs of the bank),
- fixed-term savings for which clients do not receive interest, but a certain income as a joint venture of a bank and a client (*halal*<sup>5</sup>income),
- an overdraft on a current account for which a client does not pay interest, but a fixed commission predetermined by the bank.

With regard to the abovementioned, one can conclude that in Islamic banking, commissions and various fees for bank services are allowed, as they are not considered the interest, which is forbidden by Islam. This answers the most common questions about the making of the profit and IBs' survival given the lack of interest, because interest-free banking is not banking without profit, but a stable and secure ethical alternative. Moreover, IBs are protected with clearly defined agreements signed with their clients, so if they finance the purchase of an apartment for a client, IB becomes a partner; i. e. it requires a minimum share in the property, protecting themselves against client's non-payment. It should be pointed out that IBs' products are not necessarily cheaper than CBs' regardless of the lack of interest, because in such cases banks are protected by contacts, fees and commissions paid by the clients.

#### **4. CONVENTIONAL AND ISLAMIC BANKS BEFORE, DURING AND AFTER THE FINANCIAL CRISIS**

Following, the paper brings an overview of CBs and IBs' operations from the perspective of their financial stability and efficiency. Then, in the context of the analysis of market power in the banking sector, it explains the relationship between the regulation and the financial crisis in the banking sector, and considers the impact of regulation on CBs and IBs' operations.

##### **4.1. Operations of Conventional and Islamic Banks**

Today, when there are numerous financing resources, which limits the competition between banks, Islamic banking is one of the fastest growing industries in the world. In the report by Ernst &Young (2012) on the competitiveness of Islamic banking in the world, the assets of IB in 2011 were estimated at \$1.3 trillion and it recorded growth despite the financial crisis. During this period, in the Islamic countries, IBs recorded 50% faster growth than CBs. According to data from 2014, Abedifar et al. (2015, p. 2) state that the assets of Islamic finance are estimated at \$2 trillion, 80% of which belongs to IBs (or *Islamic windows*). In the period from 2009 to 2013, IBs' assets grew at a rate of 17.6%, and by 2018 the expected growth rates 19.7% (The Economist, 2014).

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<sup>5</sup> Clean, allowed by Islam



Although the data refer to 31<sup>st</sup> December 2015 and are expressed in €, and thus are not fully comparable to those referring to IBs, it is interesting to add that the assets of the largest (conventional) European bank (HSBC Holdings, UK) are estimated at €2,18 trillion, the assets of the TOP 10 European banks at €15,06 trillion, while the assets of the TOP 50 European banks are worth as much as €29,99 trillion. Out of the 50 largest banks, as many as 7 are from Germany, while 6 are from France, Spain and the UK respectively (HSBC, 2016).

#### **4.1.1. Financial Stability of Conventional and Islamic Banks**

As many authors agree, defining financial stability is not easy (Gadanecz and Jayram, 2009, p. 365), taking into account the complex nature of financial systems and the existence of complex connections between different sectors. No clear consensus exists on how to define financial stability, how to assess it or what policy measures to apply for its realization (Kakes et al., 2004, p. 4). Lai (2002, p. 1) defines financial stability as the ability of a financial system to resist a crisis for a given shock to the system. Houben et al. (2004, p. 11) and Schinasi (2004, p. 8, 10) see financial stability as the ability of a financial system to facilitate an efficient allocation of economic resources and the effectiveness of economic processes, such as wealth accumulation, economic growth, and ultimately social prosperity, to manage financial risks and to perform these functions, even when the system is affected by external shocks. In order to protect the financial system and ensure financial stability, Lai argues (2002) that it is necessary to remove the sources of instability (sources of risk and vulnerability) by reducing likelihood of financial crisis and to mitigate the costs of the crisis when they occur, and that all relevant parties (financial institutions and authorities) should be introduced with risks. According to the European Central Bank (ECB), the first line of defense against financial crisis consists of banks, insurance companies and other financial institutions. It is their duty to remain liquid and solvent, to check the creditworthiness of borrowers and in that way manage the risks they undertake. The second line of defense is made of measures taken by public authorities to mitigate the financial crisis. This leads to the conclusion that bank stability is a segment of financial stability, and given the significance of banks as financial institutions, the concept of banking stability is often identified with financial stability. Münür et al. (2008, p. 10) point out that banking stability is the most important segment of financial stability. Schwartz (1987) claims that financial stability cannot be achieved without banking stability, and also that financial crisis occurs when banking stability is threatened. Furthermore, Barth et al. (2001, p. 3) state that a stable banking system is an important component of a stable financial system. With the identification of the concepts of financial and banking stability in definitions, the notions of financial and banking crisis are often used, since the stability implies the absence of a crisis.

There are many empirical studies that compared the stability of CBs and IBs, some of which are presented in the Table 1 below.

Table 1.

An overview of empirical studies on the stability of conventional and Islamic banks

	<b>Sample</b>	<b>Author</b>	<b>Methodology</b>	<b>Research results</b>
Before the crisis	20 out of 57 countries of OIC 1993-2004	Čihák and Hesse (2010)	Ordinary least squares (OLS) regression	- small IBs are more stable than small CBs - large CBs are more stable than large IBs
Before and during the crisis	141 countries 1995-2007	Beck et al. (2013)	OLS regression	- at the beginning of the crisis, IBs have better-quality assets <sup>6</sup> and a higher capitalization rate <sup>7</sup> than CBs
	20 countries 1995-2010	Pappas et al. (2014)	Duration model, hazard rates	- IBs have lower business risk
	24 countries of OIC 1999-2009	Abedifar et al. (2013)	Regression – random effect	- before the crisis small IBs are more stable than small CBs - during the crisis large CBs are more stable than large IBs
	17 IBs and 21 CBs Malaysia 2005-2010	Rahim and Zakaria (2013)	Panel data	-during the crisis IBs are more stable than CBs
During the crisis	8 countries 2007-2009	Hasan and Dridi (2010)	OLS regression	- in the period of 2008-2009 IBs achieved twice higher credit growth and asset growth compared to CBs - in 2009 IBs suffer a more significant profitability decline
	Pakistan 2008-2009	Farooq and Zaheer (2015)	OLS regression	- CBs are more liable to panic reactions of depositors (withdrawal of bank deposits) - IBs' lending is less susceptible to change of deposits (withdrawal of bank deposits)
During and after the crisis	11 CBs and 5 IBs The United Arab Emirates 2008-2014	El Massah and Al-Sayed (2015)	Financial ratio analysis (FRA)	- CBs are more solvent, liquid and profitable and less risky than IBs

Source: Authors' design

Based on the overview of empirical studies on the stability of CBs and IBs, it can be noticed that the results differ due to the time and place of observation, the sample size, etc. Several authors (Čihák and Hesse, 2010; Abedifar et al., 2013) differentiate between small and large banks, and conclude that before and during the crisis, small IBs were more stable than small CBs,

<sup>6</sup>The quality of bank assets is estimated according to the indicators of the institution's total assets, the share in total assets, institution profit and capital adequacy ratio

<sup>7</sup>Capitalization or capital adequacy is a measure which represents the ratio of the regulatory capital to the risk-weighted assets of the bank

while the opposite is true for big banks. They argue that small IBs have a significantly lower risk of insolvency than large IBs. Beck et al. (2013) point out that at the beginning of the crisis, IBs had better-quality assets and a higher capitalization rate (compared to CBs), which increased their ability to absorb possible losses due to bad loans, which further implies greater security for depositors and lower business risks. Greater stability of IBs before and during the crisis is confirmed by Pappas et al. (2014) and Rahim and Zakaria (2013), who claim that the factors affecting the stability of IBs and CBs are similar, except for the diversification of income, which is exclusively a function of stability of CBs. Therefore, during the crisis when a bank income was subject to change, IBs proved to be more stable than CBs. Hasan and Dridi (2010) and Farooq and Zaheer (2015) confirm higher confidence in IBs during the crisis, stating that the factors of IBs' business model helped in limiting the adverse impact of the crisis on the profitability of IBs in 2008, whereas the weakness in risk management practice of some IBs led to the decline in profitability in 2009. They emphasize the twice higher credit growth and asset growth of IBs during the crisis, which contributed to the financial stability of these banks. Furthermore, they stress out that rating agencies favor IBs, considering them less prone to business risks than CBs.

Unlike the stated opinion, El Massah and Al-Sayed (2015), analyzing mostly the period before the crisis, give advantage to CBs regarding solvency, liquidity and profitability. The following assertions support their opinion:

- CBs are basically large and strong (as opposed to IBs, which are generally smaller), and coped with the crisis more easily,
- their tradition in banking business gives them an advantage of more than 500 years over IBs,
- CBs are able to impose their products through *Islamic windows*, getting the Western culture interested and closer to the East,
- unlike IBs, which share their clients' "destiny" and thus carried greater burden during the last crisis, CBs were protected of the same with all available mechanisms and instruments.

#### 4.1.2. Efficiency of Conventional and Islamic Banks

The literature differentiates between the two fundamental concepts of efficiency, *technical* and *price efficiency*. Farrell (1957) defines *technical (production)* efficiency, essentially, as the ratio between the results (outcomes, outputs) and investments (invested resources, inputs), and describes it as the ability of a company to obtain maximum outputs from available inputs, or in other words, the ability of a company to obtain given (desired) outputs with minimum inputs. On the other hand, he defines *price efficiency (cost, allocative or Pareto efficiency)* as the ability of a company to engage different inputs in their optimal ratio (combination) regarding their price and production technology.

According to this author, the perfect efficiency is achieved if both technical and price efficiency are achieved, and it is called *thetotal (economic) efficiency*.

Taking into account the specific features of IBs, numerous studies attempted to measure the efficiency of IBs, compare it to CBs and estimate efficiency before, during and after the crisis.

An overview of the results of selected scientific researches is shown in Table 2.

Table 2.

An overview of scientific studies on the efficiency of conventional and Islamic banks

	<b>Sample</b>	<b>Author</b>	<b>Methodology</b>	<b>Research results</b>
Before the crisis	44 IBs and 37 CBs 21 out of 57 countries of OIC 1990-2005	Bader et al. (2008)	Data envelopment analysis (DEA)	- no significant difference in cost, profit and revenue efficiency between CBs and IBs -IBs are more efficient in spending resources than in making profit
	21 countries of OIC 1990-2005	Mohamed et al. (2008)	Stochastic Frontier Analysis (SFA)	- no significant difference in cost and profit efficiency between CBs and IBs
	82 banks: commercial, investment, IBs, etc. Bahrain, Egypt, Jordan, Saudi Arabia 1992-2000	Al-Jarrah and Molyneux (2005)	SFA	- IBs achieve higher cost and profit efficiency than CBs and investment banks
	43 IBs 21 Islamic countries 1995-2001	Hasan (2006)	DEA Malmquist total factor productivity	- IBs are less efficient than CBs
	Malaysia 1996-2002	Abdul-Majid et al. (2011)	SFA	- IBs and <i>Islamic windows</i> are less cost-efficient than CBs
	18 IBs 1997-2000	Yudistira (2003)	DEA	- the crisis of 1998-1999 caused lowering of efficiency of IBs
Before and during the crisis	6 Arab countries 2004-2007	Johnes et al. (2009)	DEA Malmquist productivity ratio analysis	- IBs are less efficient than CBs
	18 countries with mostly Muslim population 2004-2009	Johnes et al. (2014)	DEA, metafrontier Two stage approach examining determinants of efficiency	- IBs are less efficient than CBs
	62 IBs 16 countries of MENA (Middle East and North Africa) 2004-2010	Mghaieth and Khanchel (2015)	SFA	- IBs are more efficient in profit generating than in cost control

	47 IBs 2006-2009	Said (2012)	DEA	- IBs' efficiency is growing in 2006-2008, and is falling in 2009 - small and medium-sized IBs are more efficient than large IBs - during the crisis IBs outside the Middle East are more efficient than those in the Middle East
	IBs in the countries of MENA 2006-2009	Said (2013)	DEA	- credit and operational risk are negatively correlated to IBs' efficiency - liquidity risk insignificantly correlates with IB's efficiency
During the crisis	15 countries 2007-2009	Rashwan (2010)	Multivariate analysis of variance (MANOVA)	- before the crisis IBs are more efficient and profitable than CBs - during the crisis CBs are more profitable and efficient than IBs

*Source: Authors' design*

In synthesizing the empirical results of the previous studies on CBs and IBs' efficiency, a wide variety of opinions is noticeable. While some (Bader et al., 2008; Mohamed et al., 2008) consider that there is no significant difference between the efficiency of CBs and IBs, others think that IBs are more efficient than CBs (Al-Jarrah and Molyneux, 2005), whereas the third suggest that CBs are more efficient than IBs (Hasan, 2006; Abdul-Majid et al., 2011; Yudistira, 2003). However, a closer analysis shows certain regularities. Looking at the period before the crises (smaller ones and the big one), it appears to be no considerable difference between CBs and IBs or slightly higher efficiency is noticeable in IBs' operations. But approaching the period of the crisis, the efficiency of IBs is getting lower compared to CBs. Additionally, there is a certain consensus among the authors who observed the banks at the time of the crisis, and generally, proved the impact of the crisis on bank efficiency.

Since 2004, all analyzed authors point out to greater efficiency of CBs over IBs, with the exception of two authors (Said, 2012; Rashwan, 2010), who give a certain advantage to IBs' efficiency, but again, only in the period before the great financial crisis. Mghaieth and Khanchel (2015) present an interesting finding about the possible source of IBs' problems (2004-2010), and that is that IBs are more efficient in generating profit than in controlling costs. Furthermore, Said (2013) draws special attention to credit and operational risk, which is negatively correlated to the efficiency of IBs, underlining their inexperience in risk management as one of the reasons for their poor efficiency, which is particularly evident during the crisis. In contrast, Bader et al. (2008) suggest that IBs (1990-2005) are more efficient in spending resources than in generating

profit, which is a well-grounded opinion. Namely, IBs share losses with their clients and promote partnership and fair risk distribution among bank stakeholders.

## **4.2. Analysis of Market Power in the Banking Sector**

Taking into account different obstacles for banks entering the banking market, the number of participants and inhomogeneity of the goods, the market structure prevailing in the banking system is not perfect competition, but certainly imperfect competition and the nearest type of differentiated oligopoly (Cota, 2002, p. 115).

### **4.2.1. Regulation and the Financial Crisis in the Banking Sector: the Opinion of a Nobel Prize winner**

The United States of America (USA) have the longest history of regulation and supervision of banking operations in the world, introducing the regulation before the foundation of American Central Bank and the Federal Reserve System (FED) in 1913, with the Federal Act of Financial Supervision (1863) and the National Bank Act (1864). The development of regulation continues in the USA with the outbreak of the Great Depression (1929-1933), after which the Federal Deposit Insurance Corporation (FDIC) was established (Miletić, 2008, p. 45). As a response to the financial crisis then, a regulatory agreement was introduced, known as the Glass-Steagall Act, which separated investment and traditional banking. It was in force until 1999, when it was repealed, starting the period of deregulation of the financial system, which lasted until the first half of the 2000s (Vujčić, 2013).

This period of deregulation (self-regulation), which essentially turned out to be a failure, can be related to the liberal theory of Adam Smith, who opposed state intervention and advocated the regulator known as the “invisible hand”. That financial liberalization had an influence on the occurrence of the crisis in the past can be seen in the research: Demirgüç-Kunt and Detragiache (1997) conducted in 65 countries in the 80s and 90s of the 20<sup>th</sup> century, where financial liberalization significantly increased the probability of banking crisis; as well as in the research by Kaminsky and Reinhart (1999), where financial liberalization preceded the banking crisis in 70% of the observed critical episodes.

It is considered that the banking and economic crisis, that first broke out in the USA in 2007 and spread to Europe in 2008, is among others, caused by insufficient regulation, which was scientifically proven by Jean Tirole, a French economist and the 2014 Nobel Prize winner for his analysis of market power and regulation. His research had a major role in investigating competitiveness and analyzing the ways to regulate the business of large companies. Tirole emphasized the importance of regulation in the statement: “The branches of industry like credit cards or Internet browsing are similar. They show a natural

tendency towards becoming a monopoly, which in itself is not bad as long as there is a possibility for more dynamic companies to take over the competition's place, but the regulators should make this possible" (Agency for the Protection of Competition).

Before Tirole published his first work on regulation, in the 1980s, the study of regulation was quite rare and it was mostly concerned about how the state could intervene and control prices in the two extreme market structures: monopoly and perfect competition. As opposed to this, Tirole began his research with the regulation of oligopoly and by analyzing various regulatory industries he laid a foundation for a new, deeper analysis of regulation and market power (Tirole, 2014). In the book "Balancing the Banks: Global Lessons from the Financial Crisis", the second chapter of which was written by Tirole (2010, p. 12-13), he described the financial crisis of 2007-2008 as follows:

- weakly implemented regulation, especially in the USA, but in Europe as well, allowed for the assumption of risk of business entities, which is mostly borne by taxpayers and investors
- market and ineffective regulation would not have had such an impact had the surplus liquidity not encouraged risky behavior.

Emphasizing the importance of regulation, Tirole (2010, p. 48) as its primary reason sees the protection of small depositors, policyholders and investors in pension funds. If the country risks saving financial mediators, the given situation becomes a problem of the protection of taxpayers. Another reason for the need for regulation is the protection against systemic risk or *domino effect* which in banking system implies the overflow of risk from one bank to another, which has just happened in the recent financial crisis.

Regulators should pay special attention to creating equal conditions for all market participants, so as not to violate the rules of a *free market competition*, a well-known dilemma which resulted in deregulation of the banking industry in the late 20<sup>th</sup> century (Pavlović, 2004, p. 61).

Relating the concepts of banking deregulation and the recent financial crisis, Dewatripont and Tirole (2012, p. 238) state: "The policy of ignoring macroeconomic shocks contained in the Basel I and Basel II has led to too much intervention in recession and excessive leniency in the boom period".

In any case, in response to the crisis, regulation again becomes a necessary practice in all segments of the economy, especially in the banking sector. However, while economists and legislators before Tirole applied the same basic principles of regulation to all economy branches and the same, simple legal solutions for all markets, Tirole has shown that such a practice in some conditions gives good results, while in others it does more harm than good. Therefore, the principles of regulation should be carefully applied to each branch of industry, taking into account all of its peculiarities. Thanks to Tirole, regulatory and competition protection bodies have come up with a new set of tools that can serve

as a framework for adaptation of industries with a strong market, such as the banking sector. In that regard, arises the question of whether Basel II and Basel III are universal tools of regulation in the banking sector or they need to be adapted to the specific needs and business principles of CBs and IBs.

#### **4.2.2. The Impact of Regulation on Operations of Conventional and Islamic Banks**

A stable banking system is one of the basic requirements for economic growth and development, hence the necessity for its regulation, since it helps in achieving solvency, liquidity and efficiency of the banking system.

The regulatory framework of banks is present at the international level since 1988, with the establishment of Basel I framework by Basel Committee on Banking Supervision. It is followed by Basel II in 2004, the purpose of which was to ensure financial stability by maintaining the level of risk to which each bank is exposed with capital requirements. In response to insufficient financial regulation and the resulting financial crisis, an idea was born about Basel III, which aimed at finding a solution for procyclicality of capital requirements and the quality of the capital. Among other things, it suggested that share capital be increased from 4% to 6% of risk-weighted assets, and the additional increase of capital requirements in the form of capital buffers in the amount of 2.5% in times of credit expansion as a counter-cyclical measure, and other protective layers for maintaining the same amount of the capital. The adjustment to new capital requirements will be carried out in stages for different aspects of the adjustment in the period from 2013 to 2019 (Kundid Novokmet, 2015, p. 160).

Vujčić claims (2013) that the financial crisis, the costs of which were very high, nearly 20% of GDP at the global level, including the direct cost of bank rescue and the lost GDP, showed how faulty the deregulation of the banking system has been over the past twenty years.

In this regard, the reforms of the regulatory framework are necessary, and they should:

- increase the capital of banking institutions, as higher capitalization and lower indebtedness guarantee greater stability of banks
- make big financial institutions in the system's center or systemically important institutions even more resilient, requiring from them higher capital adequacy and stricter risk control
- increase business transparency
- provide a mechanism for solving problems in systematically important big institutions, i. e. a restructuring mechanism, with a minimum risk/cost for taxpayers
- regulate other aspects of the financial system, directly and indirectly associated with banks, which are sometimes a direct substitute for



banking operations, and which have not been regulated so far or have been poorly regulated, such as shadow banking and derivative trade.

Considering the abovementioned differences in business operations between CBs and IBs, the regulatory framework of these banks should be adjusted to their business principles, conditioned by economic, institutional and cultural environment.

Alam (2013, p. 34) highlights three obstacles for the establishment of an effective legal and regulatory framework of Islamic financial institutions:

- the lack of harmonization between Sharia principles underlying Islamic finance and the legal framework;
- introduction of a just tax system, which would not punish the users of Islamic finance, because in Islamic finance transactions are related to activities of profit and loss, while in conventional finance transactions are tax-free, as these activities are defined as lending or borrowing
- application of the laws of the Western world leads to anomalies, and are often contradictory to Sharia principles.

Despite of Islamic finance being present on the global stage, Basel II and Basel III make no difference between CBs and IBs concerning the adaptation of regulatory measures to the specific characteristics of the financial system. Islamic Financial Services Board (IFSB) makes every effort to adapt Basel guidelines to Islamic business, although there is still a need for a standardized legal framework, which would regulate IBs' operations. Ahmad and Hassan (2007) point out to this problem on the example of Bangladesh, arguing that IBs need a defined regulatory and supervisory framework for their successful business in accordance with Sharia.

The studies presented below confirm the thesis that the bank regulation is necessary as it contributes to the financial security and the efficiency of banks.

In a research on banks conducted in 72 countries in the period 1999-2007, Barth et al. (2013) prove that restrictions and stricter limitations concerning bank activities are negatively related to bank's efficiency, while higher capital regulation is positively related to bank's efficiency. Furthermore, they claim that independent bodies which regulate the banks play a significant role in achieving the bank efficiency. Analyzing 70 IBs in 11 countries in the period of 2006-2010, Alam (2013) shows that regulations and stricter supervision of the banking system positively affect the technical efficiency of IBs, and similarly, tighter restrictions in the banking system lower the business risk of IBs. Chortareas et al. (2012) studied the dynamics between the key regulatory and supervisory policies and different aspects of bank efficiency on a sample of 22 EU countries over the period of 2000-2008. The results of their study show that stricter capital restrictions and official bank supervision can improve the bank's efficiency. Moreover, the regulatory policy which restricts banking activities can result in a higher level of bank inefficiency. Observing the relation between the regulation

and the efficiency of banks on a sample of 46 African countries, Triki et al. (2013) conclude that tighter restrictions can have an adverse impact on the bank's efficiency, while the availability of safety net<sup>8</sup> positively affects the bank's efficiency, although it also depends on the bank's size and the degree of risk of banking operations. Small banks achieve lower efficiency in cases of increased capital requirements, and similarly, greater control and supervision of banks negatively affects efficiency of the banks with a lower level of risk assumption, regardless of the bank's size. All presented results support the thesis that the bank regulation should be adjusted to the principles of banking operations with regard to its size and the business risk, conditioned by economic, institutional and cultural environment.

## 5. CONCLUSION

Unlike CBs, whose goal is to maximize profit and whose basic operations are related to the granting of loans, receiving loans and interventions in the payment system, IBs' operations are based on Islamic laws, which strictly prohibit the use of interest. Due to this characteristic of Islamic banking, many were skeptical about the establishment of first Islamic banks, arguing that interest-free banking is not sustainable. Despite the skepticism, Islamic banking is one of the fastest growing financial industries at the global level. Interest-free banking does not imply banking without profit, but a stable and secure ethical business alternative.

As a result of the relatively short history of Islamic banking and different business principles in relation to CBs, their comparison and analysis of their financial stability and efficiency have been the subject of many empirical studies, including this one.

Although the results of previous empirical studies reveal certain inconsistencies when comparing the financial stability and efficiency of CBs and IBs, it is possible to identify certain trends and confirm the effect of the crisis on their financial stability and efficiency. When analyzing efficiency and financial stability in particular, before and at the time of the crisis, IBs show certain advantage over CBs. Greater stability, and even efficiency, is the result of the "purity" of their business based on commissions and fees (but not interest), aversion to risk (profit/loss sharing due to risk-sharing model), promotion of partnership (interest in business endeavors of the clients), religious principles (help and share their clients' "destiny"), social responsibility (not funding the industry of alcohol, tobacco, prostitution, etc.) and so on. On the contrary, in the period after the crisis, CBs show higher financial stability and efficiency in business. It is probably on account of their long history in business and therefore clients' higher confidence, a wider range of financial products offered to Western

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<sup>8</sup>The safety net includes bank regulation, supervision (the lender of last resort, i.e. central bank) and a deposit insurance system.

and Eastern culture (*Islamic windows*), regulations adjusted to the specifics of the business of CBs (Basel I, II, III), etc.

The regulation of financial markets and financial institutions, banks in particular, is an important precondition for financial stability and efficiency of the sector. Moreover, reduced regulation, deregulation or self-regulation is one of the main causes of the recent global economic crisis, as confirmed by Jean Tirole, the Nobel Prize winner for his analysis of market power and market regulation. The criticism of inadequate regulation and the responsibility of it in the recent crisis is in a way a criticism of liberalism and the liberal theory of Adam Smith, who opposed state intervention and advocated a regulator known as the “invisible hand” of the market. In any case, in response to the crisis, regulation again becomes an imperative of market organization, especially in the banking sector.

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## **KOMPARATIVNA ANALIZA KONVENCIONALNOG I ISLAMSKOG BANKARSTVA: ZNAČAJ REGULACIJE TRŽIŠTA**

***Sažetak***

*Za razliku od konvencionalnih banaka, čiji je glavni cilj ostvariti što veći profit na kreditima, islamske banke pridržavaju se islamskog zakona (šerijata) koji strogo zabranjuje kamate. Zbog ove karakteristike islamskih banaka, mnogi su bili skeptični kad su se prve islamske banke otvorile, misleći da bankarstvo bez kamata ne može opstati. Usprkos tom skepticizmu, islamske banke su među najbrže rastućim financijskim industrijama. Bankarstvo bez kamata ne znači bankarstvo bez profita, već jednu stabilniju i sigurniju etičku alternativu, jer umjesto kamata islamske banke uzimaju naknade i komisije za svoje usluge, sudjeluju u podjeli profita/gubitka svojih klijenata i zaštićene su ugovorima. Ovaj rad nastoji identificirati i analizirati sličnosti i razlike između konvencionalnih i islamskih banaka prije, za vrijeme i nakon krize. Prilikom skupljanja podataka posebna pažnja posvećena je fenomenu regulacije bankarskog sektora, isticanju prednosti regulacije nasuprot "nevidljivoj ruci" Adama Smitha, kao jednom od ključnih razloga za posljednju ekonomsku krizu. Na primjeru konvencionalnih i islamskih banaka, postaje jasno da svaku regulacijsku politiku treba pažljivo prilagoditi specifičnim uvjetima individualnih industrija, te da isti temeljni principi i jedinstvena pravna rješenja za sve sudionike tržišta neće donijeti željene rezultate, kako je to istaknuo nobelovac Jean Tirole.*

***Ključne riječi: Konvencionalno vs. islamsko bankarstvo, financijska kriza, propisi, učinkovitost, stabilnost.***

***JEL klasifikacija: G21, G01, G38***



