Journal of Economics and Development Studies
September 2014, Vol. 2, No. 3, pp. 177-192
ISSN: 2334-2382 (Print), 2334-2390 (Online)

Published by American Research Institute for Policy Development
DOI: 10.15640/jeds.v2n3a13
URL: http://dx.doi.org/10.15640/jeds.v2n3a13

Does the PLS Paradigm Spur the Islamic Banks Vs Conventional Banks Soundness: Case of the Global Financial Crisis

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Abstract

This study aims to explore the difference in terms of soundness between conventional banks and Islamic banks. The literature review doesn't identify whether Conventional banks or Islamic banks are sounder during recent global financial crisis that resulted in the collapse of the majority of large conventional banks across the globe. At this time, Islamic banks were emerging as an alternative banking system which is supposed to be resistant toward a financial distress. [Boumediene and cabby (2009), Cihak and Hesse (2008), Omar and Duasa (2011), Zarrouk (2012) Beck (2013)]. More, this work aims to examine if the Profit Loss Sharing (PLS), as the main feature to Islamic banks, enhance its capability to resist face to a financial crisis. By performing this comparative analysis between this duality of banks, this project is an extension of the study begun by Cihak and Hesse (2008), and Bourkhis and Nabi (2013). Using cross-country bank data in 14 countries of the MENA region where Islamic banks and Conventional banks co-exist, we calculate the Z-score for a sample of 71banks (31 conventional bank, 40 Islamic bank) over the period 2004-2011. Based on the empirical research, we show that the Subprime Crisis has affected deeply the solidity of conventional banks during this event. Moreover, we mention that these banks were capable to reduce the negative impact and remain their solidity after this financial trouble. According to Islamic banks, our results are in line with those of Isa and Siddiqi (2006), Miniaoui and Gohou (2011), Gamaginta and Rokhim (2011) and Nabi and Bourkhis (2013). We find that even Islamic banks were not able to avoid the crisis and the PLS paradigm did not help these banks to be immunized against financial crisis.

Keywords: Islamic Banks, Conventional Banks, the Subprime Crisis, Soundness, PLS paradigm, MENA region

1. Introduction

Thanks to its major role in ensuring a nation's growth, banking sector as an activity dates back to ancient civilizations in Greece and Rome when credits to certain industries formed the vital part of trade. For instance, Banks occur as a crucial and major role in economic growth. More, the health of the banks and the health of economy are closely correlated.Thus, a healthy and sound banking sector is a key ingredient for growth, economic prosperity and general welfare. (Romeo-Avila (2007), Levine (2011), Ben Naceur S (2013), Ayadi R (2013))

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The decade before the recent global financial crisis which is called The Subprime Crisis, Conventional banks have been trying to innovate and being more creative in order to extend its outreach of products to satisfy its customers' needs and to promote economic development. As a result ofthis accelerated development in the world, traditional banking sector becomes a well-developed and sophisticated sector.(Lee KheeJoo,ChinNyuk Sang ,Pamela Chin(2010) Mohamed SabriHaron, Shofian Bin Hj. Ahmad, Mohamed Idiab (2011))

Unfortunately, during the last two decades of the 20th century, the financial world has witnessed indefinite financial depression that is more than 100 crises have occurred in the banking system across the globe, starting with the crisis of 1930-31,the 2007-2008 crisis called the Subprime crisis, the European financial crisis in 2009, and concluding until with the 2013's world crisis. These crises are particularly harmful for the health of banks since their cost is very enormous[3]. Accordingly, due to the Subprime Crisis which is more severe than any other in the past, a series of breakdowns, of failure and impairment of the majority of conventional financial institutions was happened, as witnessed by the collapse of *the Lehman Brothers*[4]and *Bear Stearns*[5]*in USA*, *London Scottish Bank* [6]*in Manchester…,* after 2007-2008.This crisis, started in USA and slopped rapidly over into other economies and banking markets due to the financial globalization and liberalization.

It has not only negative impact on banks in developed countries as the USA and Europe, but the financial system of *the Middle East North Africa (MENA)* [7]region has also deeply suffered from the negative effect of this financial lesion.

Regarding the close connection between the banks' soundness and the health of the economy, the Subprime crisis damage led to a decline in the economic situation and a nervous distress about the future of the global economy. Experts agree that, this turbulence in the financial system which has created anxious impression about the functioning of the banking system is caused by something erroneous with the system since almost conventional banks suffer from bankruptcy.

Theoretical researches performed by Bryant (1980), Diamond (2000)Stiglitz (2008), Siddiqi (2008), Brooks (2009) and Matthews and Tlemsani (2010), show that the structure of conventional banking is inherently unstable and, therefore, it is fertile to economic trouble. More, principles of interest-based transactions and risky investments on which the western banking is based, could be the origin of crisis. Moreover, the recurrent feature of financial crises, the similarity of their essence and the severity of the last one i.e. Subprime crisis, recommended a better financial architecture able to avoid such lesion in the future. By another way, this recent financial scandals led to a focus on "ethics" and the need for reviewing the financial strategies.

During the last decade and exactly in 1970s, a new financial engineering called "Islamic Finance" which is different from the conventional one, has emerged. Islamic finance is a system which identifies its principles, practices, operations and objectives with the spirit of Islamic law. Thus newa branch shows key differences from Western system since it is based on interest-free transactions and Profit Loss Sharing between banks and investors. Thus, while the reputation of traditional system was blackening and losing their shine due to the financial crisis, this new financial architecture attracts the international attention of experts thanks to its ethical principles.

[3]From the Bank of England (2008). "Financial stability report": No. 24, October 2008.London: Bank of England ", banks are estimated to have lost around US$2.8 trillion during the 2007-08 financial crisis

[4]Lehman Brothers Holdings: the fourth largest investment bank in the USA

[5]The Bear Stearns companies are one of the largest investment banks in the USA, failed in 2008.

[6]London Scottish Bank, even, it had been established for over a century, it buried all its activity in November 2008 after the crisis.

[7] The MENA region involves 22 independent countries: Morocco/Algeria/Tunisia/ Bahrain / Djibouti/ Egypt/Iran / Iraq/ Israel/ Jordan /Kuwait/ Lebanon/ Libya/ Malta / Oman / Qatar/Saudi Arabia /Syria/ United Arab Emirates /Sudan/Yemen.

According to International Monetary Fund (IMF) statistics, "Islamic banks were more resilient to crisis than conventional Banks thank to its essentially different character". As opposed to conventional banking, some of the theoretical and empirical literatures show that Islamic finance is sounder than the other banking system and can avoid the worst effect of a crisis thanks to its ethical principle. Al Haddad and El Diwany (2008), Hassan and Kayid (2009),Mirakhor and Krichene (2009), Smolo&Mirakhor (2010)and Derbel et al (2011) agree that Islamic finance as a competent model has avoid the negative effect of a crisis and keep their solidity even during crisis. More, recently in 2013 Nawal Hussein and Abbas El Hussein state that**"** the profit sharing feature on the asset and by avoiding a domino effect also adds to the stability of the financial system as a whole" However, in practice, as experience shows, some Islamic banks were affected negatively by the crisis and even closed their doors. (Al Rajhi bank in Saudi Arabia, Dubai Islamic Bank in UAE and Kuwait finance house in Kuwait)

In research studies, Hasan and Dridi (2010), HajerZarrouk (2012)and Nabi and Bourkhis (2013), have demonstrate that Islamic financial institutions are exposed and vulnerable to financial trouble like conventional ones.

Until nowadays, this conflict is not resolved. In this context, the present study is an attempt to fill this gap and to investigate the difference in terms of soundness between Conventional Banks and Islamic Banks. It examines these questions:"*Have the Islamic banking been sounder than Conventional banking during and after the subprime crisis?"Is the PLS paradigm, which is a special feature distinguishing the Islamic banking from the conventional banking, allows Islamic institution to escape the crisis effect?*

This paper consists of four sections.Section one concentrates on the background of Islamic banking and its specific principles and products which differentiate it from the conventional one.Section two reviews the literature related to the topic of the solidity comparaison between Islamic banks and Conventional ones face to the Subprime crisis.

Then, section 3 after presenting the Sample, period and methodology, provide an empirical answer to the problematic.Finally, the last section deals with the main results and conclusions stipulated by this article.

2. The Islamic banking Model

The aim of this section is to provide a brief introduction to the basic concepts of Islamic banking. Some authors are interested in a more detailed background which can look at the overview articles named at the end of this paper. (Mirakhor (1987), Khan and Mirakhor (1991), El Gamal (2000), Hassan (2003), Siddiqi (2004), ELQorchi (2005), Sole (2007), Jobst and Sole (2012).

Islamic or Shariah-complaint banking can be defined as *"the provision and use of financial services and products that conform to Islamic religion practices and law*". (Cihak and Hesse 2008)

The General Secretariat of the Organisation of Islamic Conference (OIC) defined Islamic banks as, *"An Islamic bank is a financial institution whose status, rules and procedures expressly state its commitment to the principle of Islamic Shariah[8]and to the banning of the receipt and payment of interest on any of its operations"*

In recent years, Islamic banking has become an increasingly well-developed form of banking across the globe. It is one of the fastest growing sector and one of the most topical developments in global financial markets.

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[8]Shariah: it is an Arabic word meaning "path" or "way". Under INVESTOPEDIA DICTIONNARY: 'Shariah' is Islamic religious law that governs not only religious rituals, but aspects of day-to-day life in Islam. Shariah, literally translated, means "the way." There is extreme variation in how Shariah is interpreted and implemented among and within**.**

To illustrate, according to the International Monetary Fund(IMF)statistics, Islamic banking assets globally grew to $1.3 trillion in 2011, suggesting an average annual growth of 19% over past four years (2011: 24%) and the Islamic banking system growth story continues to be positive, growing 50% faster than the classic banking sector. “The Islamic market is about 1.8 billion consumers and worth more than 2 trillion dollars until April 2013” (Oliver Agha 2013) “Islamic banking assets are forecast to grow beyond the milestone of $2 trillion by 2014 and estimated to surpass the USD 605 trillion in 2020”.(AsharNazim and Gordon Bennie 2012)

Currently, Islamic banking as the only form of Islamic finance is practiced in more than 105 countries worldwide.[9]From Miniaoui and Gohou(2011) “there are now more than 300 Islamic financial institutions worldwide including banks, mutual funds, mortgage companies and insurance firms in 2011”.

In other words, Islamic banking which is run in accordance with the Islamic law is based on social justice, equity and fairness in all banking transactions. Generally, Islamic law forbidden receiving or paying interest which is calledRiba in Islam.In others words, any positive, fixed, predetermined interest or payment over and above the actual amount of principle and tied to the maturity, that is guaranteed regardless of the performance of the investment, is strongly prohibited by the Holy Quran [10]and the Sunnah.[11]Moreover, Riba is banned in order to avoid an economic and social lesion since it affects borrowers and lenders unfairly as it is in Conventional banks.

In this topic, experiences show that interest is the most crucial causes of the price increase and creates monopoly in society by encouraging the concentration of wealth. Instead, Profit-Loss Sharing (PLS) arrangements which are the specialfeature of Islamic financesince it reflects the value of Islam: Justice and social equity. This notion of equitable sharing aspires to social justice and equity in transactions since that an investor share gains as it is exposed to losses and suppliers of funds become investors rather than creditors.Thus, PLS paradigm encourages entrepreneurship and wealth creation and leads to an equitable, stable economic development.

One basic difference in the practical point is that “the conventional bank intermediation is generally based on debt and allow the “transfer of risk”, while Islamic banks are more likely asset-based and focused on “risk sharing”.(Hasan and Dridi 2010)

In another side, Gharar and Maysir are prohibited in the Islamic banking sector. Gharar and Taghrir are generally known as uncertainty, hazard risk or ambiguity: unknowingly expose oneself (property) to jeopardy (excessive risk). This means that a contract must be concluded without specifying or predicting whether the result will come or not. So, “Gharar can be any contract for sale or purchase that includes uncertainty in genus, species, quantity of the object, price, time of payment in deferred sales, existence of object, and identity of object”.(Alsadek H. Gait & Andrew Worthington 2009)

Maysir is defined as the act of betting on the realization of an event, based on subjective and future expectations i.e. high degree of asymmetric information. Moreover it is regarded as gambling; any games of chance as lotteries, lotto, or casino type games.

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[9]Islamic banking is practiced and coexists with traditional banking in, but not limited to, the following countries: Albania, Algeria, Australia, Bahamas, Bahrain, Bangladesh, British Virgin Islands, Brunei, Canada, Cayman Islands, North Cyprus, Djibouti, Egypt, France, Gambia, Germany, Guinea, India, Indonesia, Iran, Iraq, Italy, Ivory Coast, Jordan, Kazakhstan, Kuwait, Lebanon, Luxembourg, Malaysia, Mauritania, Morocco, Netherlands, Niger, Nigeria, Oman, Pakistan, Palestine, Philippines, Qatar, Russia, Saudi Arabia, Senegal, Singapore, South Africa, Sri Lanka, Sudan, Switzerland, Tunisia, Turkey, Trinidad & Tobago, United Arab Emirates, United Kingdom, United States and Yemen. In some countries (Iran, Pakistan and Sudan only Islamic banks are allowed.

[10] The Holy Quran is the primary source of the Shariah: It is the greatest miracle given to the prophet Muhammadﷺ.It contains laws and rules on how to regulate political, economics, social and moral matters in society.

[11] The second source of Islamic law is the Sunnah which is the sayings, deeds and approvals of the prophet Muhammadﷺtransmitted orally in the form of the hadiths.

It consists on obtaining positive return through taking excessive risk. Iqbal and Molyneus (2005) provide some arguments explaining the reasons why Islam forbids gambling and games of chance. They are persuaded that *"due to high risk available in these transactions, people don't win fairly the amount of money. This lead to greater financial and social problems. On the other hand, games and gambling cannot add any surplus to social wealth".*

The third significant prohibition is illegal sectors. Islamic finance encourage people to invest their money .However, it is awaited that investment sectors are conform to the tenets of shariah. Indeed, According to Islamic doctrine, some commodities and activities, which violate to shariah rules, are strictly forbidden. Armaments, alcohol, Pork industry, Tobacco, Gambling industry, Conventional banks and Insurance are among others forbidden items As follows, investors should not use items banned by the Holy Quran. Gait& Worthington (2007) arguethat*«The intention of Islamic finance in this attention is to promote and stimulate "ethical" investments that do not affect people adversely and unfairly through the violation of Islamic prohibitions."*

The last principle on which Islamic banking is based is Islamic finance is based mainly on real assets. Money which is not tangible should be used only as a "medium of exchange" or a "unit of measurement".Thus, to contribute to the development of the real economy encouraging direct investment, each financial transaction must be tied to a "tangible, identifiable and underlying ". Islamic finance defends the creation of wealth and surplus through real trade and investment.

Profit-Loss-Sharing is the unique feature of Islamic banking,and the second pillar (after interest-free transactions of the modern Islamic banking. It reflects the value of Islam: honesty, justice, fairness, solidarity and cooperation. As known, Iqbal and Mirakhor (2007) confirm that *"Islam encourages business and trade activities that generate fair and legitimate profit but interest based transactions are prohibited».* Thus, if interest-based financing is forbidden because Islam prohibits interests, participation in the financing of a businesses is possible only on a free- interest basis.

In the banking industry, PLS is a partnership between banks and clients. These partners share earnings and losses on the basis of the profit sharing pre-agree ratio which is decided through a mutual process considering the contributions of both partners. By achieving Islamic aims, PLS allows a more efficient allocation of capital because the return on capital depends on the productivity and viability of the project not on the interest rate.

Concerning differences in balance sheet, *"Islamic intermediation is asset-based which mean that an investment is structured on exchange or ownership of assets placing Islamic banks closer to the real economy. In contrast, conventional bank allows for risk transfer and it is debt-based that can structure products that are notional or virtual within an infinite range"*.(Hasan and Dridi 2010).Chishti (1985) constructs a model and concludes that "*PLS financing makes payment commitments a function of cash flows and strongly discourages the financing of speculative borrowers-this, eliminating the main sources of volatility in capitalist economies*". Many economists Khan (1987) and Ahmed (2002) argue that *"the PLS process escape the deterioration of Islamic Bank's balance sheets in the case of economic trouble".*Indeed, *"the PLS allows the Islamic Bank to transfer the credit risk from its Asset side to its liability side i.e. the investment deposits"*.

The Profit Loss sharing paradigm enables to resolve asymmetric information by favoring a better mobilization of savings and saving rates and improving risk mitigating. (Ben jedidia, Ben Ayed 2012).Consequently,risk sharing vehicle by PLS encourages new projects to integrate production and is more apt to enhance growth since financial transactions are underlying by a productive economic activity[12].

Moreover, PLS finance engenders a macroeconomic stability (Chapra2000, Iqbal 1997).

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[12] Since 1969,Friedman demonstrate that zero nominal interest rate is a necessary condition for optimal allocations of resources.

Islamic financial intermediation is an "anti-crisis" intermediation (Saidane 2010), while the non Profit loss sharing system is subject to losses and repetitive crisis.Moreover, financial stability is a precondition for the real economy to create jobs, expansion and growth. More than ever, transparency and stability of the financial system becomes vital. In this regard, Islamic banking, distinguished by its special PLS principle, can help build financial discipline and stability.

On the other side, there has been a debate over "whether the financial development facilitates economic growth".Beck (2000), Bekaert (2001) and Levine (2005) strongly supported the idea that "there is a positive relationship between financial development and economic growth due to its productive investment financing."Romeo-Avila (2007), Antonio N. Bojanic(2012), Gazi Salah Uddin and Muhammad Shahbaz(2013) also confirmed "the positive impact of sound financial system on economic growth". So, an efficient and sound financial system stimulates the economic development and it is a key element for economic expansion.

In this contextAli Said (2012) claims that, *"operating a bank in the manner of profit-loss-sharing actually increases the stability of the banking system because it encourages banks to diversify their investments, to minimize risks and increase profits".*Moreover, PLS intermediation constitutes the best conductive of economic development by promoting productive projects through the efficient use of funds and improving the efficiency of resources allowance.(Ben Ayed, Ben Jedidia 2012)

In fact, judging from the actual record and experience, Profit-Loss-Sharing institutions seem to have transformed the amount of previously "idle savings" in the hands of fruitful sectors.These sectors have traditionally and unlikely been uneasy and unexploitable. These various sectors did not satisfy the conventional criteria. In this context, according to KaraAhmet (2002) *"it would facilitate the creation, in various sectors, of large numbers of firms that they would be unlikely to come into existence under the conventional financing methods"*.

Thus, the presence of the financial institutions of Profit and Loss Sharingcould be considered a potential source of economic growth and inflation reduce.That's why, scholars have suggested "the conventional system should learn and mimic the alternative Islamic system which by using equity for risk sharing contribute to economic growth . (Rogoff2011)**.**

In his work performed in 2008, Al-Suwailem uses a simulation-based system and shows that "interest-free lending yields better results than interest-based system in terms of wealth distribution and accumulation of less gross debt". In this topic, as a recent work, Sugema, Bakhtiar, and Effendi,(2010) show by means of a theoretical modeling that *"PLS based banking system is welfare improving".*

On the other hand, this feature has its drawback which is the asymmetric information[13] and adverse selection[14]which are present in such investments.For more explanation, customers may not communicate to their bank the full information about the project undertaken such the true costs and revenue. In fact, without these details, Islamic banks would not be able to make the project's specific and adequate financing decisions in an optimal manner. Thismarket friction could beseen in another side in which it enhances bank stability. In fact, the PLS concept allows Islamic banks a greater market discipline. They are required to try hard to distinguish good customers from bad ones because they have more to lose than conventional banks and they are subject to asymmetric information and adverse selection. In this manner, Islamic institutions must control their investments and borrowers more closely to ensure truthful reporting of profits and losses.

[13] Asymmetric information :unequal distribution of information among actors
[14] Adverse selection when a lender is not capable of distinguishing between projects with different credit risk when allocating credit problems.

3. Literature Review

The recent global crisis, despite of its severe impact and the series of conventional bank's failures, has shown that *"bank's business model and funding structure are important to its -resilience"* Organisation for Economic Co-operation and Development (OECD2010), and has triggered an attention and questioning to the resilience of banks.

According to Bryant (1980) and Diamond and Dybvig (1983) *"traditional banks are inherently unstable since they are deposit-taker institutions; they do not expect all depositors demand money back in the same time and naturally bans cannot satisfy their demands in the same time."*Thus, if a bank is enable to repay simultaneously theirs depositors, then, it is considered unstable and a prey to bankruptcy. Khan (1991) has explained that the Islamic Banking model is related to the vulnerability of banks.

He argues in his theoretical analysis that, *"the business model (developing interest-free financing instruments), of Islamic banks can explain the failure of traditional banks in maintaining stability and soundness during crisis".*

Other theoretical studies performed by Ahmed (2002), ,Kia and Darrat (2003)and Syed (2007), showed that "the PLS principle plays also a critical role in keeping banks solidity by allowing the bank to maintain its net worth under difficult economic conditions and avoiding the balance sheets deterioration". Thus thanks to PLS intermediation Islamic system may be more resistant face to the financial crisis.

Again, in the same topic, the author Ahmed (2002) argues *"that this Islamic banking system could prevent the financial crisis and instability by the prohibition of Riba and the linkage with the real economy"*. In fact, under the principle of Prohibition of Gharar and Maysir and Tangible asset backing ,there is no place for speculative behavior and any financial assets based on other financial assets cannot be traded, that leads to instability like what is happen in the U.S subprime crisis.

In the other side, the findings of Isa (2006) are not in line with previous results. He found that *"the Islamic and conventional banks systems are both vulnerable and can be badly impacted by financial shocks».* In this line, ShamshadAkhtar (2009) affirmed *"Islamic banks have been impacted because of their higher exposure to real estate and their limited reliance on risk sharing or equity based transactions."*

Many existing theoretical studies have been developed in order to answer this questioning. However, unfortunately, they have not provided a clear view on how and whether Islamic banks aspects including business model and reaction face to crisis differ from traditional banks. This conflict may refer to the restrictive number of empirical studies examining the solidity of Islamic and traditional banks against financial crisis.

The first empirical study examining the theme of Islamic Banking solidity compared to conventional peers, was established by Cihak and Hesse (2008) *"in which stability of full-fledged banks were measured with an insolvency risk indicator in 18 countries with significant Islamic Banking Industry".* This study is the only study discussing the solidity of Islamic banks compared to conventional banks in a cross-country analysis during the period 1993-2004.

They found "that small Islamic bank tend to be more stable than small conventional banks. On the contrary, large conventional banks are more stable than large peers. Also, small Islamic banks are more stable than large one".

In the same year, Hasan and Dridi (2008), assessed and compared the impact of the global financial crisis on the performance of the two types of banking industry. They show that *"in terms of assets and loans, Islamic banks showed much higher growth in the times of crisis and the assessment of external rating agencies indicates relatively stable ratings for Islamicones.*

"Another study in this topic performed by Boumediene and Caby (2009) examining soundness of Islamic banks and the western ones during the subprime crisis in 2007. The fruit of this research reveal that "in the period of crisis Islamic banks are more resistant than conventional peers. But, even Islamic banks are more resistant during crisis; they are not protected from negative impact after crisis."Chong and Liu (2009), argue that Islamic banking deviates from the PLS paradigm, so, they suggest that Islamic banks should be treated similarly to their traditional counterparts.Hasan and Dridi (2010) also found that "Islamic bank system has limited the adverse impact on bank solidity, in 2008. But, in 2009, Islamic banks were been more and more weak compared to conventional banks". Imam and Kpodar(2010) discussed this findings in their study: In countries with lack of prudential regulation, the uncertain financial environment may not be beneficial for banks wealth as it can weaken their soundness" .Also they affirmed that "Islamic banking is a complement to the traditional system and don't differ from it."In another side, Turk-Ariss (2010) found that *"Islamic banking is less competitive than conventional banking so less stable and more vulnerable to the crisis's effect".* The author recommended that future research should examine whether Islamic banking industry differ from the conventional banking industry.Kassim and Majid (2010),proved that "the Islamic and conventional banks systems are both vulnerable to financial shocks".Smolo andMirakhor (2010), analyzed the effects and the implications of the global financial crisis on the Islamic financial industry. The findings reveal that *"although the crisis had restricted impact on Islamic Financial Institutions (IFI), Islamic and conventional banks are both vulnerable to financial shocks".* Omar and Duasa (2011) found that Islamic banking system is more stable against the financial crisis than conventional one thanks to profit and loss sharing nature.

Contrarily, Zarrouk (2012) agrees that *"even Islamic banks have avoided the subprime exposure". Besidesshe is persuadedthat these unconventional institutions are subject to another global crisis effect".*

More, these findings indicated that Islamic banks solidity has decreased in two phases during the global recession originated by the sub-prime chock. The first decrease was in 2008.And, the second decrease was in 2009. The long duration of this crisis has affected Islamic banks.Moreover, in 2013, other authors (Beck, Deminrguç-Kunt, and Merrouche)demonstrate that *"Islamic banks perform better during crisis in terms of capitalization and asset quality".*In2013, Nabi andBourkhis, using Z-score, conclude that, *"before the financial crisis, Islamic banks were sounder than Conventional banks. Then in 2008, and during the crisis, only large Islamic banks could escape the negative effect of the crisis .Also in 2009, after the crisis, Islamic banks outperforms conventional peers."*

4. Empirical Research

4.1. Methodology

To assess the impact of the crisis on the solidity of Islamic Banks and Conventional peers, we use bank-level data on Islamic and conventional system. To construct this comparative study, individual bank data are drawn from the widely used Bankscope database. Our sample includes71 banks i.e. 41 conventional banks and 30 Islamic banks, over the period 2004 to 2011, covering 14 countries in the Middle East and North Africa (MENA) Region.

Thanks to its geographical position situated at the junction point of three continents: Europe, Africa, and Asia", the region was a prosperouscentre of trade and finance which help it to be the world's leading economic power from the seventh to the thirteenth centuries.Moreover,the Middle East and North Africa region is one of the world's fastest growing banking markets. Its banking sector is moderately to highly concentrate. Religion which plays a crucial role has helped developing of two different banking disciplines: *The conventional system and the Islamic system.*

Further, this region is one of the fastest growth Islamic banking markets in the world: The world's largest Islamic banks are situated in the MENA region and its banking sector mixed of conventional and Islamic banks permits a comparison of soundness by type of bank.

We analyze the effect of the financial crisis on the Islamic banks and conventional peers by performing aninter-temporal: during and after crisis and inter-bank: Islamic and conventional comparaison using the Z-SCORE for each bank *i* at time *t* in the country *j.*

The Z-SCORE ratio is a popular measure of bank soundness since it is inversely related to the probability of a bank's insolvency which is the probability that the value of its assets becomes inferior to the value of the debt. It can be denoted as

$$Z = (\mu + K)/\sigma$$

µ : denotes the bank's average return on assets (ROA= net income /total assets)
K: the ratio of equity to assets (the equity capital in percentage of total assets)
σ : is the estimated standard deviation of the ROA as a proxy for return volatility.

An elementary characteristic of the Z-SCORE is that is fairly and objective measure of soundness across different other such as financial ratio and Financial Soundness Indicators… It focuses on the risk of insolvency which every whether the bank is Islamic or conventional runs out of assets.

Čihák (2007) also states that *"this indicator has the advantage that it can be used for institutions where more sophisticated market data are not available. With the Z-score, the risk of default in different groups of institutions can also be compared".*

Moreover,Demirgüç-Kunt and Detragiache (2009) argue that "this measure is the improvement of the measures used in the previous studies, such as loan spread, and capital adequacy, especially for cross-country studies"

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Based on panel data analysis, we estimate a modified version of Cihak and Hesse(2008)and Nabi andBourkhis (2013)'s econometric models that enable us to assess the impact of the financial crisis while controlling for the bank specific vector of variables, industry vector specific variables and macroeconomic variables.

$$Z_{i;j;t} = \alpha + \beta_1 B_{i;j;t} + \beta_2 I_{j;t} + \beta_3 M_{j;t} + \sum \theta_j C_j + \sum \varphi_j PC_j + \varepsilon_{i;j;t}$$

i:the bank ***j***:the country ***t***:the year

Variable Name	Definition		Sources
$Z_{i;j;t}$	Z-score for bank *i* at time *t* in country *j*		Personal's calculations based on Bankscope data(2012)
$B_{i;j;t}B_{i;j;t}$	Vector of Bank specific variables	Total assets of a bank(in U.S billion dollars)	Bankscope(2012)
		Loan deposit(used only for Islamic bank)	
		Debt ratio(used only in Islamic banks)	
$I_{j;t}I_{j;t}$	Vector of industry specific variables	Herfindahl Hirschman Index (the sum of squared markets share in terms of total assets of all banks in the country) This index vary from 0 to 10.000)	Personal's calculations based on Bankscope data(2012)
		Governance	Kaufman Kraay and Mastruzzi (2010)
		Bank Concentration	Personal's calculations based on Bankscope data(2012)
$M_{j;t}$	Vector of Macroeconomic variables	GDP Growth(Growth rate of nominal GDP ,adjusted for inflation)	World Bank Development Indicators (2012)
		Inflation (year on year change of the CPI index	
		Exchange depreciation(used for conventional banks)	
C_j	Crisis dummies variables	Equals 1 for the crisis –period (2007-2008), 0 otherwise.	
PCj	Post crisis dummies variables	Equals 1 for the after crisis-period (2009-2010-2011), 0 otherwise.	

The first technique used is the Ordinary Least Square (OLS) which is based ona simple linear model. Then, we use the Generalized Least Square (GLS) which is categorizedinto GLS Fixed effects and GLS Random Effects. TheGLS Fixed effects approach is built on model with fixed individual effects. Under this approach, individuals which are observed, have well-definedandspecific characteristics that do not vary over time. By this way, they areindependent anduncorrelated; in this case individual are the Banks.

The second approach is GLS with Random Effects in which the differencesbetween individualsare random. Whatis the most accurate methodamongthemwhich givesa non-biased estimate?

4.2. Findings

4.2.1. Conventional banks

Table 1: Z-ScoreOLS Estimate for Conventional Model

	Z-SCORE			
	Crisis Period		***Post-Crisis Period***	
Variables	**Coefficients**	**t**	**Coefficients**	**T**
Governance	(0.0032299)	(0.25)	(-0.0040951)	(-0.31)
ExchangeDepreciation	(0.1548198)	(0.40)	(0.1092)	(0.30)
Size	$(-0.0103672)^{*}$	(-1.69)	(-0.006643)	(-1.08)
Bank Concentration	$(-0.1612391)^{***}$	(-2.76)	(-0.114267)	(-1.93)
Growth(GDP rate)	(-0.0043182)	(-1.43)	(-0.0030348)	(-1.24)
Inflation	$(-0.0037496)^{**}$	(-2.13)	(-0.010775)	(-0.49)
Crisis	(-0.0015125)	(-0.09)		
Post Crisis			$(0.1168823)^{*}$	(1.87)
Observations	54		54	
R^2	0.5464		0.5784	
F	7.92		9.02	
Prob>F	0		0	

Note: this table presents the estimation results by Ordinary Least Square method of the Z-ROA score for conventional banks. The first column shows the coefficient of each variable. The second column, mentions t-Student statistic.(***),(**),(*) denote respectively the degree of significance (1%),(5%),(10%)

In this part of our work, we analyze results provided by the OLS estimation and showed in table2 regards Conventional banks. This analysis covers the crisis period and the post crisis period for the Conventional banks. Concerning conventional banks and during the Subprime crisis, we notice that in our model only Size, bank concentration and Inflation has affected significantly and negatively the soundness of these banks. In other terms, when the bank's size increases, the bank allows itself to run restrictive and riskier operations, so that it becomes more vulnerable to financial shocks and its solidity declines.

In fact, from a theoretical point ,Siddiqi(2006) state that "*in practice all over the world, Islamic banks rely more on debt-like financing on their assets side rather than PLS based financing instruments*". Thus, these types of banking are fertile to financial shock and can be damaged.

Moreover, In 2007, El-Hawary, Grais, and Iqbal (2007) and Greuning and Iqbal (2008) are convinced that the dominance of transactions with concentrated risks, low return assets due to the application of PLS principle deprives the bank of the benefits of portfolio diversification .Thus, the solidity of these banks decline.

Concerning inflation, the unstable and uncertain financial environment may not be beneficial for banks wealth as it can weaken its soundness.

Moreover, Concentrated banking markets seems to be a block to conventional banks to attain a high degree of solidity. For more explanation, high market concentration leading to a high competition affected negatively the solidity of banks. This result is in accordance with the previous descriptive analysis in which we mention that western banks suffer from a suddenly drop in their Z-score during the 2007-2008 economic trouble.

For the other variables, which are the GDP rate, Inflation and Crisis, it is clear that they don't have any significant effect on the soundness' measure.

The variable post crisis which refers to the period of 2009-2011 has a positive and significant impact on the dependent variable which is the Z-score measure. In another side, after the subprime crisis, the Z-score of conventional banks registers a staggered increase which can be explained mainly by this variable. Indeed after the financial trouble, Western banks are more released in their working and succeed in remaining its soundness degree and compete other banks.(Cihak and Hesse 2008)

4.2.2. Islamic Banks

Table 2: Z-score GLS Random Effect Estimate in the Islamic Model

	Z-SCORE			
	Crisis Period		***Post-Crisis Period***	
Variables	***Coefficients***	***T***	***Coefficients***	***T***
Governance	(0.2664229)	(0.91)	(0.2651587)	(0.90)
Bank Concentration	(-0.013466)	(-0.07)	(0.0743305)	(0.39)
Loan Deposits	$(-0.0736153)^{**}$	(-2.29)	$(-0.0750717)^{**}$	(-2.32)
Debt ratio	$(-0.3148815)^{**}$	(-2.08)	$(-0.3751588)^{*}$	(-2.46)
Size	(0.0017133)	(0.10)	(-0.0047818)	(-0.29)
Crisis	$(-0.0576629)^{*}$	(-1.70)		
Post-Crisis			(0.0397039)	(1.19)
Observations	238		238	
Khi2	12.09		10.26	
Prob>Khi2	0.06		0.1028	

Note: this table presents the estimation results by Ordinary Least Square method of the Z-ROA score for Islamic banks. The first column shows the coefficient of each variable. The second column, mentions t-Student statistic. (***),(**),(*) denote respectively the degree of significance (1%),(5%),(10%).

Concerning the Islamic banks and during crisis, we notice that under this regression we observe that Loan Deposit and Debt ratio variables which are considered as PLS arrangements' proxies are affected significantly but , contrarily to expectation, it affects negatively the solidity of these banks. From a theoretical point, PLS contracts allow Islamic institutions to escape the crisis effects since it encourages sharing of profit and loss and reducesrisks. Unfortunately, as many authors(Bourkhis and Nabi) argue, that Shariah- conform banks are mimicking traditional banks and fail in adopting truly the PLS principle.

According to the International Association of Islamic Banks, "PLS covered less than 20 percent of investments made by Islamic banks world-wide."[15]In this way, Islamic banks should be considered as similar to Western banks and not different from them.

Also, we notice that subprime crisis has significantly and negatively affected Islamic Banks. In other words, these banks lose some pointsof their solidity degree due to the crisis.

In fact the mean of the Z-score decreases from (33.46) before crisis to attain (27.58) during the crisiswhile the majority of Islamic banks taken in consideration in our sample are leaders in the Gulf Cooperation Council(GCC) countries.

In 2009-2010-2011, again Loan Deposits and Debt Ratio are significant and negative. The Variable Post crisis was also not significant. We can explain this by the return of the financial calm after the troubles. It was not the cause which helps Islamic banks to redefine their soundness degree.

5. Conclusion

The world has known various financial crises over the course of history, particularly the recent global financial crisis in 2007-2008, called Subprime crisis.

[15]http://www.qfinance.com/information-sources/international-association-of-islamic-banks

Due to the central role of banks in the achievement of economic growth and prosperity, this financial hazards which launched in the USA and proliferate into others economies in all over the world owning to the liberalization and financial integration, has a great harmful for the economy and prejudicial for the health of financial sector.

While the conventional system has seen its reputation tarnished by the major financial distress, Islamic system was able to enter in the financial sector and to operate side by side to the traditional system and to record a high and unexpected growth rates and high degree of solidity.

The heart of our project is to evaluate the soundness of Islamic and Conventional banks during and in the aftermath of the Subprime crisis which is considered as the greatest financial crisis.

According to our empirical estimations,wefindthat Islamic banks are not sounder from conventional and also are not competent in reducing the severity of financial turndown. Moreover, the most critics addressed to shariah-compliant banks that their operations do not rely on profit and loss sharing PLS principle which is less risky and represents a guarantee and secure principles to the Islamic system (they are interest-free transactions).

Concluding, over the past few years, financial crises and economic trouble become a trend owning to their recurrent nature and severe impact.

Then, these crises are a good testing to the solidity of banks since their impact is detrimental for the health of banks. Unfortunately, Islamic and Conventional banks failed to maintain their soundness face to crisis.

Concerning, conventional banks, experts demonstrate that their principles are a catalyst for financial distress. A great risky lending, interest-based transactions, investments in excessive- risk projects are key elements to trigger the crisis. Islamic banks, in despite of its principles which protect and immunize it from the worst impact of financial lesion such as participative intermediation, Profit Loss sharing, no Gambling and interest free transaction, are mimicking the conventional system.

As a result, these shariah-complaint institutions are facing profound difficulties of closures and bankruptcies. Thus, to confirm their presence and to demonstrate their relevance as a powerful alternative to conventional banks, Islamic banks should, in order ensure a portfolio’s diversification, enlarge their range of activity and increase their investments fields. In this topic, due to a few years of emergence, individual Islamic banks are often small .So, to support each other; it is beneficial to enhance coordination and cooperation among them. Moreover, in order to avoid a massive withdrawal which leads to a bankruptcy, Islamic financial institutions should keep a rational proportion of their funds in liquid able to satisfy customer’s needs. Also, to be protected from the asymmetry of information and the moral hazards problems, Islamic banks are required to be more careful in selecting their clients and in raising their funds as well as prudent in investing in PLS projects. Additionally, Islamic banks should be strict and sever about criteria for membership in the Shariah-Board since this entity guarantee the compliance of banks’ products to Islamic law. The membership should be vigilant regarding the effective use of Profit Loss Sharing contracts.

References

Ahmed H (2002), "A microeconomic model of Islamic banking", Research Paper Islamic Research and Training Institute, N°59.

Ahmet Kara, (2002),"On the Efficiency of the Financial Institutions of Profit-and-Loss-Sharing", Journal of Economic and Social Research, Vol.3, Pp 99-104.

Ali Said, (2012), "Efficiency in Islamic banking during a Financial Crisis", Journal of Applied Finance and Banking, Vol.2, N°3, Pp163-197.

Al-Haddad, H. and El-Diwany, T. (2008), "Boom, bust, crunch: is there an Islamic solution?"[Online] Available online at:
http://www.islamic-finance.com/item153_f.htm.(October 29).

Alsadek H. Gait & Andrew Worthington,(2009), "A Primer on Islamic Finance: Definitions, Sources, Principles and Methods" Department of Accounting, Finance and Economics, Griffith University.

Al-Suwailem, Sami (2008), "Islamic Economics in a Complex World: Explorations in Agent- Based Simulation", Islamic Development Bank: Jeddah.

Andreas A. Jobst and Juan Solé,(2012), "Operative Principles of Islamic Derivatives Towards a Coherent Theory" IMF Working Paper, WP/12/63

Antonio N, Bojanic (2012), "The impact of financial development and trade on theeconomic growth of Bolivia",Journal of Applied Economics, vol. 15 pages 51-70

AsharNazim and Gordon Bennie (December 2012) The 19thanual world Islamic banking Conference, "Competitiveness Report 2012-2013", Ernest &Young

AyadiRym, EmrahArbak, Sami Ben-Naceur and Willem Pieter De Groen,(2013), "Financial Development, Bank Efficiency and Economic Growth across the Mediterranean", MEDPRO Technical Report No. 30

Bank of England (2008)."Financial stability report": N°. 24, October 2008.London: Bank of England

Beck, T.(2000), "Finance and the Sources of Growth", Journal of Financial Economics, Vol.58, Pp261-300.

Beck, Demirgüç-Kunt, Merrouche (2013), "Islamic vs. Conventional Banking: Business model, efficiency and stability", Journal of Banking and Finance, Vol.37, Pp443-447.

Bekaert, G. (2001), "Emerging Equity Markets and Economic Development‖", Journal of Development Economics, Vol.66, Pp. 465–504.

Beng Soon, Chong and Ming-Hua Liu, (2009), "Islamic banking: Interest-free or interest-based?" Pacific-Basin Finance Journal, Vol 17, Pp 125–144

Ben JedidiaKhoutem, Ben AyedNedra (2012)," Islamic Participative Financial Intermediation and Economic Growth", Journal of Islamic Economics, Banking and Finance, Vol. 8, No.3.

Boumediene A and Caby J (2009) "The stability of Islamic banks during the subprime Crisis" Available online at SSRN: http://ssrn.com/abstract=1524775

Brooks, D. (2009), "An economy of faith and trust", Available
http://wwwnytimes.com/2009/01/16/ opinion/16brooks.html

Bryant, J (1980), "A model of reserves, bank runs, and deposit insurance", Journal of Banking and Finance, Vol.4,Pp 335- 344

Chapra, M Umer,(2000), "The future of economics:an Islamic perspective", Leicester, UK: The Islamic Foundation

Chishti, Salim U,(1985), "Relative Stability of interest-Free Economy", J.Res Islamic Economies, Vol 3, Pp3-12

Čihák, M. (2007)."Systemic Loss: A Measure of Financial Stability". Czech Journal of Economics and Finance, Vol.57.

Čihák, M., &Hesse, H. (2008)."Islamic Banks and Financial Stability: An Empirical Analysis", International Monetary Fund Working Paper, Washington, N°. 08/16

Cihak. M and H. Hesse (2008), "Islamic banks and Financial Stability" ,IMF WP 08/19

Derbel, H., et al (2011), "Can Islamic Finance Constitute A Solution to Crisis?", International Journal of Economics and Finance, Vol. 3 N°. 3, pp. 75-83.

Demirgüç-Kunt, A., &Detragiache, E. (2009), "Basel Core Principles and Bank Soundness. Does Compliance Matter?", Policy Research Working Paper N°. 5129. The World Bank Development Research Group.

Diamond, DW and PH. Dybvig.(1983), "Bank runs, deposit insurance, and liquidity".The Journal of Political Economy, Vol91, No 3, Pp401- 419.

Diamond, Douglas W., and Raghuram G. Rajan (2000), "A Theory of Bank Capital" Journal of Finance, vol. 55 pp.2431-2465.

El-Hawary, Dhalia, WafikGrais, and ZamirIqbal, (2004), "Regulating Islamic Financial Institutions: The Nature of the Regulated," World Bank Working Paper 3227

Errico, Luca, and MitraFarrahbaksh, (1998), "Islamic Banking: Issues in Prudential

Regulation and Supervision," IMF Working Paper 98/30

Gamaginta and RofikohRokhim (2011), "The stability comparaison between Islamic banks and conventional Banks", 8th International Conference on Islamic Economics and Finance.

Gazi Salah Uddin and Bo Sjo& Muhammad Shahbaz,(2013), "The Causal Nexus between Financial Development and Economic Growth in Kenya", Linkoping University, Linkoping University, COMSATS Institute of information Technology, Pakistan

Greuning, H. V., &Iqbal, Z. (2008)."Risk analysis for Islamic banks". Washington, D.C.: The World Bank.

Hasan&Dridi. (2010) "The effects of the global crisis on Islamic and conventional Banks" International Monetary Fund working Paper N° 10/201.Hassan, M.K. and Kayed, R.N. (2009), "The global financial crisis, risk management and social justice in Islamic finance", ISRA International Journal of Islamic Finance, Vol. 1 No. 1, pp. 33-58.

Hassan, M. Kabir (ed.), (2003), "Textbook on Islamic Banking", (Dhaka, Bangladesh: IslamicEconomic Research Bureau).

Hassan, M.K. and Kayed, R.N. (2009), "The global financial crisis, risk management and social justice in Islamic finance", ISRA International Journal of Islamic Finance, Vol. 1 No. 1, pp. 33-58

Imam, P., and Kpodar.(2010) "Islamic Banking :How Has IT diffused?"IMF Working Paper No 10/195, Washington: International Monetary Fund

ImanSugema, Toni Bakhtiar, Jaenal Effendi,(2010), "Interest Versus Profit-Loss Sharing Credit Contract: Effciency and Welfare Implications" International Research Journal of Finance and Economics, Pp1450-2887

IqbalZamir, (1997), " Islamic financial systems", Finance and Development, Pp 42-45

Iqbal, M. &Molyneux, P. (2005). "Thirty Years of Islamic Banking: History, Performance, and Prospects". Palgrave Macmillan, Houndmills: New York.

Iqbal, Z. &Mirakhor, A. (2007)."An Introduction to Islamic Finance Theory and Practice". Singapore: John Wiley & Sons (Asia) Pte Ltd.

Isa, M. M. (2006), "Islamic banking and money demand function in Malaysia: an econometric analysis." Pakistan Economic and Social Review, Vol.44 (2), Pp277-290.

Kassim, S. H., &Majid, M. S. A. (2010). "Impact of financial shocks on Islamic banks: Malaysian evidence during 1997 and 2007 financial crises", International Journal of Islamic and Middle Eastern Finance and Management, Vol.3, N°4 , Pp. 291-305.

Kia, A. &Darrat, A. F. (2003), "Modeling money demand under the profit-sharing banking scheme: evidence on policy invariance and long-run stability." Carleton Economic Papers from Carleton University, Department of Economics, N° 03/13.

Khan Mohsen and Abbas Mirakhor (1987), "Islamic Interest-Free Banking: A theoretical Analysis", Theoretical Studies in Islamic Banking and Finance, The institute of Islamic Studies, Pp: 15-36.

Khan, Mohsen and Abbas Mirakhor, (1991), "Islamic Banking,"

IMF Working Paper No. 91/88

Khan Mohsen and Abbas Mirakhor,(1991),

"The Financial System and Monetary Policy in an Islamic Economy", Journal of King Abdulaziz University: Islamic Economics, Vol. 1, No.1 Jeddah (1409/1989)

KhawlaBourkhis& Mahmoud Sami Nabi (2013), "Islamic and conventional banks' soundness during the 2001-2008 financial crisis" Review of Financial Economics, Vol.22, Pp68–77.

Lee KheeJoo, Chin NyukSang ,Pamela Chin(2010), "Conventional Banking Handbook», Published by Institut Bank-Bank Malaysia, (35880-P) , FINANCIAL SECTOR TALENT ENRICHMENT PROGRAMME.

LevineRoss(2011), "Regulating Finance and Regulators to Promote Growth" This paper was prepared for the Federal Reserve Bank of Kansas City's Jackson Hole Symposium, "Achieving Maximum Long-Run Growth," on August 25-27, 2011

Matthews, R. and Tlemsani, I. (2010), "The financial Tower of Babel: roots of crisis", International Journal of Islamic and Middle Eastern Finance and Management, Vol. 3 No. 4, pp. 334-350.

Mahmoud A. El Gamal, (2006), "Islamic Finance, Law, Economics and Practice", Cambridge University Press, pp. 175-189.

Miniaoui H, Gohou G (2011), "Did the Islamic Banking Perform Better During the Financial Crisis?" International Conference on Management, Economics and Social Sciences

Mirakhor, A. (1987). "Analysis of Short-Term Asset Concentration in Islamic Banking".International Monetary Fund Working Paper, N°. 87/67

Mohammed el Qorchi, (2005), "Islamic Finance Gears Up", Finance and Development, Vol.42, Pp4.

Mohamed SabriHaron, Shofian Bin Hj. Ahmad, Mohamed Idiab,(2011),

"Commercial Banks & Historical Development" Journal of Applied Sciences Research, Vol 7, No7, Pp 1024-1029

Nawal Hussein Abbas El Hussein (August 2013), "Islamic finance: Is it a viable option to restrain financial crisis?"Interdisciplinary Journal of Contemporary Research in Business, Vol.5, N°4.

Omar, M. A. &Duasa, J. (2011), "The impact of crisis and macroeconomic variables towards Islamic banking deposits" .American Journal of Applied, Vol.8, N°12, Pp1413-1418.

Oliver Agha (14-16 April 2013), "The International Islamic Finance Conference"

Park Hyatt Hotel, Abu Dhabi, UAE"

RymAyadi, EmrahArbak, Sami Ben-Naceur and Willem Pieter De Groen, (2013), "Financial Development, Bank Efficiency and Economic Growth across the Mediterranean", MEDPRO Technical Report No. 30

Rogoff, K. (2011), "Global Imbalances without Tears."Project Syndicate.

Romeo, A. (2007), "Finance and Growth in the EU: New Evidence from the Harmonization of the Banking Industry", Journal of Banking and Finance, Vol. 31, Pp.1937-1954.

Ross Levine(2011), "Regulating Finance and Regulators to Promote Growth" This paper was prepared for the Federal Reserve Bank of Kansas City's Jackson Hole Symposium, "Achieving Maximum Long-Run Growth," on August 25-27, 2011

SaidaneDhafer(2010), "La finance Islamique : une finance libre d'intérêt ? » Colloque La finance islamique réalités et perspective, Tunis 15 Avril 2010.

Shamshad Akhtar,ex-Vice-president of the World Bank for MENA in her speech (11th November 2009) "Symposium on Islamic Finance in Roma: Developments in MENA regions", Bank Italia, Rome, Italy.

Siddiqi, M. (2004), "Riba, Bank Interest and the Rationale of Its Prohibition". Islamic Research and Training Institute, Islamic Development Bank, Jeddah.

Siddiqi, M. N. (2006). "Islamic banking and finance in theory and practice: A survey of State of the art". Islamic Economic Studies, Vol.13, N°2.

Siddiqi M.N. (2008), "The current financial crisis and Islamic economies", IIUM Journal of Economics and Management, Vol.16, No. 2, PP. 125-131.

Smolo, E. and Mirakhor, A. (2010), "The global financial crisis and its implications for the Islamic financial industry", International Journal of Islamic and Middle Eastern Finance and Management, Vol.3,N°4, Pp. 372-385.

Solé Juan (2007), "Introducing Islamic Banks into Conventional Banking systems", International Monetary Fund Working Paper, N° 07/175.

Stiglitz, J. E. (2008), "The Fruit of Hypocrisy", The Guardian,
http://www.guardian.co.uk/ commentisfree/2008/sep/16/economics.wallstreet

Syed A. (2007), "Financial Distress and Bank Failure: Lessons from Closure from IhlasFinans in Turkey."Islamic Economic Studies, Vol.14.

Turk-Ariss Rima, (2010), "On the implications of market power in Banking: Evidence from developing countries ", Journal of Banking and Finance, Vol.34, Pp765-775.

ZarroukHajer,(2012), "Does Financial Crisis Reduce Islamic Banks' Performance?", Journal of Islamic Finance and Business Research , Vol.1,.N°.1, Pp. 1 –16 .