DO SOCIO-ECONOMIC FACTORS MATTER FOR THE FINANCIAL DEVELOPMENT OF A MUSLIM COUNTRY? A STUDY IN BANGLADESH BANKING SECTOR

Ajim Uddin
Southern Illinois University Edwardsville

Mohammad Ashraful Ferdous Chowdhury♣
Shahjalal University of Science and Technology

Md. Nazrul Islam
Shahjalal University of Science & Technology

ABSTRACT

The development of a country depends on the combination of its social, financial, and economic development. Despite having the utmost importance on socio-economic equality in Islam, many Muslim countries are still hovering in the developing region. The quest to analyze the inconsistency of relationship between these three primary dimensions of development on a Muslim country substantiates this study. This study tries to analyze the impact of socioeconomic factors on the performance of both Islamic and conventional banks in a Muslim country i.e., Bangladesh. Using static and dynamic GMM model this study found that socio-economic factors especially corruption has a statistically significant negative impact on banks profitability. The study also corroborates some previous research findings about the relationship between the bank-specific determinants and bank profitability. The cost to income ratio and loan loss provision found negatively influence banks profitability. The findings of the negative impact of equity to total asset, on return on equity (ROE) and positive impact on return on asset (ROA) signifies the leverage effect on ROE and importance of capital adequacy. Finally, the study also explains the reasons for poor performance of the banking sector in Bangladesh despite significant economic growth of the country.

Keywords: Socio-economic factors; Financial Development; Muslim Countries; Dynamic GMM.

1. INTRODUCTION

The relationship between socio-economic growth and economic development is indispensable. A country's economic growth and its institutional reform largely influence its population, culture, and its socio-economic perspective. Earlier researchers were inclined to study the relationship between socio-economic development and economic growth and found both sets of factors have influences on each other's (King and Levine 1993, Rousseau and Watchel 2005, Todaro 2003). However, researchers seldom focus on the impact of socio-economic factors on the financial institution. The remarkable absent of literature about the relationship between socio-economic factors and the performance

---

♣ Corresponding author: Assistant Professor, Department of Business Administration, Shahjalal University of Science & Technology, Bangladesh, Email: ashraful_ferdous@yahoo.com

of financial institution coupled with the earlier findings of the positive relationship between various socio-economic indicators and economic growth are the main reasons to conduct this study.

The intriguing features of social and economic indicators of Muslim countries make this relationship more interesting. Theoretically, Islamic principles should promote respect for human rights, freedom of choice, property rights, rule of law, good governance, and a fair economic system in a Muslim country. But in reality, so-called Islamic countries are far away from the adherence to these basic principles. None of the Muslim countries stand in first 30 in overall Islamicity index (Islamicity rankings 2017). Only two countries Qatar (39) and United Arab Emirates (40) are in the first 40 and Bangladesh is at 112th position in this index. Which is a decent improvement from 152nd in 2009 (Rehman and Askari 2010). This deviation of the Muslim countries from the basic Islamic principles and their impact on the institutional and financial development encouraged this study to be conducted in a Muslim country.

This study sought to investigate the impact of socio-economic factors such as corruption, property rights, and political stability on the financial performance of banks. The primary purpose of this study is to find out if there is any impact of socioeconomic development on banking industry (both Islamic and conventional) of the country. Although there is a common perception that Islamic banks are more likely to be influenced by its participant socio-economic perspective (Arshad & Rizvi 2013, Chowdhury et al. 2016), there is not much empirical evidence on how significant it is to the whole banking industry in a Muslim country.

Bangladesh, the fourth largest Muslim country in terms of the population consist most of the socio-economic features of other Muslim countries. Having notable economic growth in recent years, the socio-economic conditions and institutional reform of the country are yet to reach the desired level for the optimum business transaction. In last 10 years, despite political unrest and an average CPI of 23.10 the country's ability to maintain an average GDP growth rate of 6.201 (World Bank, 2015) make very interesting to study the heart of the country's economic system, its banking industry.

Finally, the presence of a robust Islamic banking sector also played a crucial role in selecting Bangladesh as the sample country. In Southeast Asia, Islamic banking first introduced by Bangladesh in 1983 (Kabir et al. 2012). Now there are 56 banks in Bangladesh, and from these 8 banks are operated as full-fledged Islamic banks and 16 other conventional banks using Islamic banking branch in order to avail Islamic banking service to their customers (Bangladesh Bank, 2015). The motivation for this research rises from a dearth in existing literature linking the effects of socio-economic factors with the performance of Islamic and conventional banks. In order to gather and contribute knowledge in this novel area, this study tries to identify the effect of socio-economic factors on the profitability of commercial banks in Bangladesh, while considering both bank-specific and macroeconomic determinants that affect banks' profitability.

2. LITERATURE REVIEW

This study is conducted to investigate the impact of socio-economic development on banks performance. Till to date, only a few studies focus on this aspect of banking performance. Researchers are mainly concerned with profitability and efficiency in studying the determinants of bank performance. Using ratios and frontier approach most studies are conducted to examine the internal and external factors and their effect on the performance of banks. Researchers have used return on assets (ROA) and/or the return on equity (ROE) as the indicator of profitability and found bank size, capital adequacy, level of liquidity, provisioning policy, and expenses management as internal determinants and economic growth rate, inflation, and interest rate as external determinants of bank profitability. Some of the empirical studies have conducted on a single country basis (Berger 1995, Sufian and Habibullah 2009) while others focused on a panel of countries (Srairi 2010, Abdul-Majid et al. 2010, Belanes and Hassiki, 2012, Beck et al. 2013).

The comparative studies between the performance of Islamic and conventional banks are also well researched. Contemporary researcher used frontier analysis approaches to analyze the efficiency of Islamic banks (Abdul-Majid et al. 2010, Srairi, 2010, Belanes and Hassiki, 2012), the management, regulatory and supervisory challenges (Murjan and Ruza 2002, Solé, 2007, Jobst 2007), features and profitability of Islamic Banks (Karim and Ali 1989, Khediri and Khedhiri 2009, Srairi 2010, Abedifar et al. 2013, Beck et al. 2013), and whether it is possible to distinguish between Islamic and conventional Banks (Metwally 1997, Iqbal 2001, Olson and Zoubi 2008). In addition, few researchers also devote their attention to testing the resilience, soundness, and financial stability of Islamic banks during the financial crisis (Cihak and Hesse 2010, Hasan and Dridi 2010, Beck et al. 2013, Caby and Boumediene, 2013, Bourkhis and Nabi 2013).

However, the studies related to the socio-economic development and bank profitability is still in its infancy. This area of study first receives notable attention in late 1990 after the Asian financial crisis. The role a stable banking sector can play to avert the financial crisis, turn researcher interest to analyze the relationship between financial and economic development. The use of speculative investment and rapid inflow of short-term capital was the main catalyst of 90's financial crisis. Countries with robust banking industry and strong financial structures could avert the devastating impact of the crisis (Armenta 2007).

The pioneering growth theory of finance (King and Levine 1993, Barro 1991) postulates that the development of financial sector leads economic growth. King and Levine (1993) used variables like liquid liabilities ratio and ratio of claims on the private sector to GDP to measure a country's level of financial development. They conducted their analysis on a set of data ranging from 1960-1989 using traditional growth regression models and found a strong and statistically significant relationship between financial development and economic growth.

In 2005, Rousseau and Watchel retested the hypothesis of King and Levine with 43 years' (1960-2003) data. They found the coefficient of liquid liabilities and private sector credit as a percentage of GDP somehow disappeared because of globalization and rapid financial liberalization in developing countries. Their findings also suggest that without robust financial sector, rapid liberalization can become counterproductive for economic growth.

It provides perverse incentives for banks to lend imprudently. Which can increase the level of non-performing loans, illiquidity, insolvency, capital flight and ultimately a collapse of the whole financial sector.

From the Socio-economic perspectives, a number of studies have been conducted to analyze the impact of socio-economic freedom on economic growth (Reedom & Rowth 2000, Adkins et al. 2002, Altman 2008, Heckelman and Knack 2009). Most of these studies suggest that there is a positive relationship between various measures of economic freedom and economic growth. However, there is no significant literature that links between socio-economic freedom and bank performance. The ample evidence of the impacts of bank-specific factors on economic development (Chinn & Ito 2007, Levine & Zervos 1998) suggests that socioeconomic freedom also likely to influence the banking sector. But the lack of interest of researcher in this area seems surprising.

There are many studies which used various economic freedom indexed from various aspect of the economy and found high degree of economic freedom can lead better economic outcomes. Using traditional indicator of common law, creditor rights, the rule of law La Porta et al. (2002) find that countries with strong investor protection have larger capital markets. Sala-I-Martin et al. (2007) analyzed the effects of economic freedom on inequality and found that income convergence affects the aggregate productivity and efficiency.

The effect of government influences and corruption on capital allocation and financial transactions is also widely researched. Previous studies have found that corruption has a negative effect on GDP growth rate, firm valuation, and capital investment (Wei 1999, Lee and Ng 2009). Many economists suggest that corruption can adversely affect an economy (Asiedu 2006). In 2003, Todaro points out that economic development and economic freedom also has huge bearings on commercial banks efficiency and profitability. According to Todaro (2003) government influence on the financial market such as interest rate ceilings, directed lending, and corruption may restrain financial institution from their optimum performance. He further restated that repressive policies and macroeconomic instability can severely reduce the amount of saving and loanable fund in the economy and leads to a "credit crunch".

The negative impact of corruption on banks profitability and efficiency are also evidenced in previous studies. Aburime (2008) found that an increase in Corruption Perception Index (CPI) leads to a decrease in bank profitability in Nigeria. Similarly, Pagano (2008) found that government involvement and the levels of corruption are important factors that can help to describe cross-sectional dispersion in bank lending rate across Latin American countries. La Porta et al. (2002) found that corruption lead to greater information asymmetries and, therefore, support the idea that corruption can have a significant adverse effect on the functioning of a financial system.

The principles of Islamic finance do not permit corruption and other malpractices. As Islam wants to ensure justice in human society, the general perception is that any unjust and corrupt practices might have a greater impact on Islamic financial system. The implementation of the risk sharing philosophy of Islamic bank largely depends on the honesty, accountability, and transparency of its participants (Askari, Iqbal and Mirakhor,

2014). Earlier literature suggests that, for these features of Islamic banks, it tends to be more influenced by a country's socio–economic determinant than its conventional counterpart (Chowdhury et al. 2016).

The general theme developed from the above discussion of existing literature is that, socio-economic factors like property rights and political stability have a positive impact on economic growth and there is an adverse relationship exists between Islamic bank profitability and corruption (Aburime 2008, Pagano 2008, La Porta et al. 2002). However, there is a research gap between the link of socio-economic factors and banks financial performance. Hence, the current paper attempts to investigate whether the performance of a bank is affected by the country's socio-economic factors such as property rights, political stability, and corruption while considering the other bank-specific and macroeconomic factors. In addition, the study will try to shed some light on this unexplored area of empirical research and contribute to identifying the effect of socio-economic factors on the performance of conventional and Islamic banks in a Muslim country like Bangladesh.

3. SOCIO-ECONOMIC AND FINANCIAL CONDITIONS OF BANGLADESH

3.1. *Socio-economic Condition of Bangladesh*

Despite global economic shocks, during last ten years, Bangladesh has been experiencing a real GDP growth rate. On average, more than six percent with only a single digit inflation rate. An increase in domestic crop production, moderate export and high level of remittance inflow was the main catalyst for this stable growth rate. Bangladesh Government's inclusive development strategies and Bangladesh Bank's (BB's) emphasis on socially responsible financing also played a vital role in this transformation.

Figure 1: Economic Growth
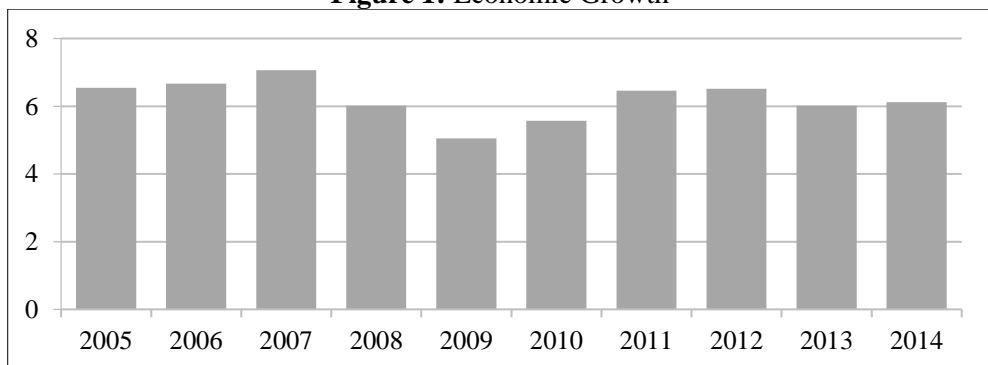

Source: Bangladesh Bank (2015)

The GDP Growth rate of Bangladesh was relatively stable around 6 percent during the period of 2006 to 2014 (Figure 1) with the only disturbance in 2009. This deviation is the after effect of 2008 global financial crisis and can be easily explained. However, the country was successfully able to recover from this slowdown and finds its way to reaching

7 percent. Although it is expected that economic growth is associated with inflation but Bangladesh was able to contain it in an expectable level. Despite an average growth rate of 6.2 the country's inflation never had been over above 11 percent. At present the inflation rate is at a very acceptable level, only 7 percent.

While the economic indicators of the country send a positive signal to investors and institutional buyers the social and political condition wasn't up to the mark. Like other emerging countries several indicators of economic and political freedom send a negative signal about the country. Bangladesh was positioned in the lowest point for consecutively four years (2001 to 2004) in corruption perception index. Though a gradual improvement takes place in the recent years but Bangladesh is still in 146th position with a score of only 25 (see Figure 2).

Figure 2: Corruption Perception Index
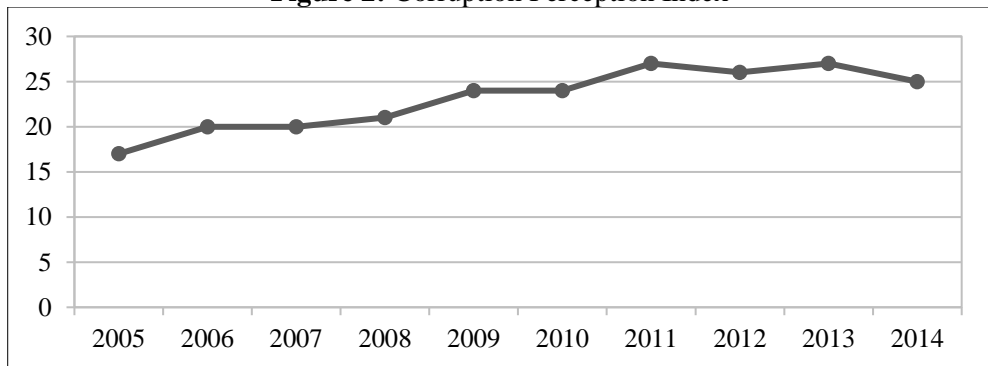
Note: Measure in Points, 100=No Corruption
Source: Transparency International (2015).

The political situation was also not conducive to business in recent years. A series of unfavorable event keep the country's political stability index negative. Though the situation is improved in recent years, recovering from -1.84 to -0.88 in the World Bank index. (figure 3).

Figure 3: Political Stability Index
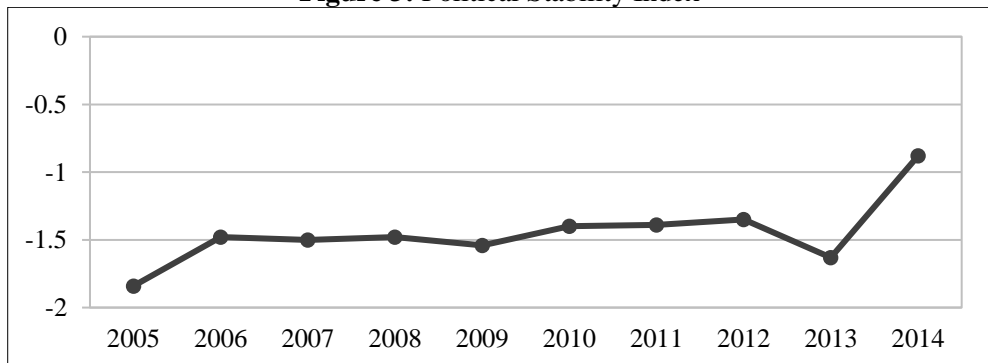
Source: World Bank (2015).

The indicators like property rights, economic and financial freedom provide an important signal about a country's rule of law its population and their economic freedom. The property rights index measures a country's ability to protect its population's private property. It also assesses the degree to which law are enforced by the government and the existence of contractual enforcement and corruption. In 2010 Bangladesh experience a fall in property right index from 30 to 20 and still poses the same point (figure 4).

Figure 4: Property Right Index
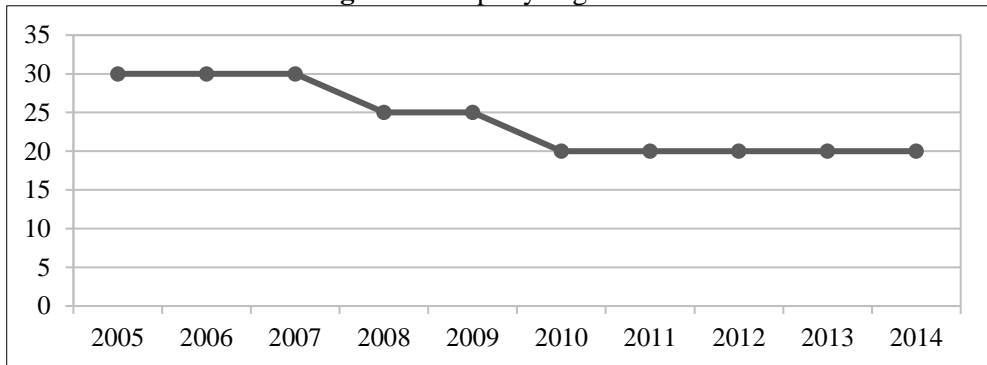
Source: Heritage.org, (2015)

Bangladesh also receives very low score in financial and economic freedom index. Though the situation is improving Bangladesh is still in 132nd position in overall economic freedom index. They are trailing behind other South-Asian countries like India, Pakistan, Sri Lanka and Bhutan.

Figure 5: Economic Freedom Overall Index
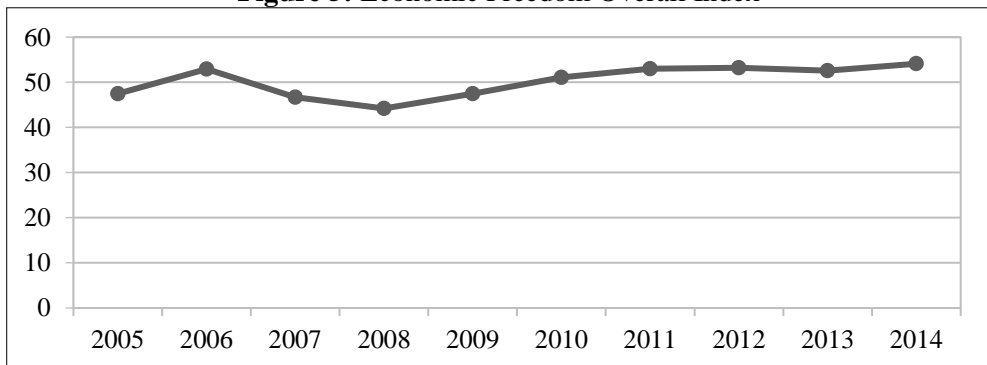
Source: Heritage.org, (2015)

3.2. *Condition of Financial Institutions in Bangladesh*

The financial system of Bangladesh consists of scheduled and non-scheduled banks, non-bank financial institutions, microfinance institutions, co-operative banks, insurance companies, brokerage houses, stock exchanges and credit rating companies. It includes 6

Table 1: Structure of Banking System

Bank Type	2015 (June)					(billion taka)
	Number of banks	Number of branches	Total assets	Percent of industry assets	Deposits	Percent of deposits
SCBs	6	3669	2755.7	28.4	2105.4	28.4
DFIs	2	1405	289.4	2.9	226.1	3.1
PCBs	39	3982	6130.5	63.3	4743.5	64.1
FCBs	9	75	518.2	5.4	331.5	4.4
Total	**56**	**9131**	**9693.8**	**100**	**7406.5**	**100**

Source: Bangladesh Bank (2015)

Table 2: NPLs to Total Loans Ratios by Type of Banks (measure: Percent)

Bank Type	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
SCBs	21.4	22.9	29.9	25.4	21.4	15.7	11.3	23.9	19.8	22.2	21.9
DFIs	34.9	33.7	28.6	25.5	25.9	24.2	24.6	26.8	26.8	32.8	25.5
PCBs	5.6	5.5	5.0	4.4	3.9	3.2	2.9	4.6	4.5	4.9	5.7
FCBs	1.3	0.8	1.4	1.9	2.3	3.0	3.0	3.5	5.5	7.3	8.2
Total	**13.6**	**13.2**	**13.2**	**10.8**	**9.2**	**7.3**	**6.1**	**10.0**	**8.9**	**10.0**	**9.7**

Source: Bangladesh Bank (2015)

Table 3: Profitability Ratios by Type of Banks

Bank Type	Return on assets (ROA)									
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
SCBs	0.0	0.0	0.7	1.0	1.1	1.3	-0.6	0.6	-0.6	-0.6
DFIs	-0.2	-0.3	-0.6	0.4	0.2	0.1	0.1	-0.4	-0.7	-1.5
PCBs	1.1	1.3	1.4	1.6	2.1	1.6	0.9	1.0	1.0	0.9
FCBs	2.2	3.1	2.9	3.2	2.9	3.2	3.3	3.0	3.4	3.1
Total	**0.8**	**0.9**	**1.2**	**1.4**	**1.8**	**1.5**	**0.6**	**0.9**	**0.6**	**0.5**
Bank Type	Return on equity (ROE)									
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
SCBs	0.0	0.0	22.5	26.2	18.4	19.7	-11.9	10.9	-13.6	-22.5
DFIs	-2.0	-3.4	-6.9	-17.7	-3.2	-0.9	-1.1	5.8	-5.97	-8.2
PCBs	15.2	16.7	16.4	21.0	20.9	15.7	10.2	9.8	10.3	9.7
FCBs	21.5	20.4	17.8	22.4	17.0	16.6	17.3	16.9	17.7	15.7
Total	**14.1**	**13.8**	**15.6**	**21.7**	**21.0**	**17.0**	**8.2**	**11.0**	**8.1**	**6.6**

Source: Bangladesh Bank (2015)

state-owned commercial banks (SCBs), 2 specialized development banks (SDBs), 39 domestic private commercial banks (PCBs), 9 foreign commercial banks (FCBs), 4 Non-scheduled banks and 31 non-bank financial institutions (NBFIs) (Bangladesh Bank 2015). The banking sector of Bangladesh shows great resiliency to recover from recent financial crisis. Because of new micro-prudential regulation, the assets of the total banking sector have increased significantly. Volatile macroeconomic and business environment made banks cautious in loan distribution and encouraged to invest in safe liquid assets. As a result, a large portion of bank asset is consisting of government bills and bonds. In 2014, the non-performing loans (NPL) of the banking sector is increased because of unstable

macroeconomic condition and tighter loan rescheduling standards (table: 2). Which improve the capital absorption quality of the banks but affect their profitability (table: 3).

The table 3 clearly indicates that the banking industry of Bangladesh received a setback in recent years. Despite the global financial crisis in 2007-2008, the performance of the banks was satisfactory, maintaining a stable growth rate from 2007 to 2010. However, from 2011, the indicators of profitability (ROA and ROE) fall gradually in every type of banks. Especially for state-owned commercial banks, both ROA and ROE was negative. This rapid decline in the indicators of profitability is very alarming for the total banking industry. If the situation is not rectified soon, poor banking performance can affect the total economy. Hence, this study will also serve as a means to identify what going wrong in this sector.

4. DATA AND METHODOLOGY OF THE STUDY

4.1. Data and their Collection

The financial statements of the 7 Islamic banks and 18 conventional banks have been collected for the period 2005 to 2014 from the annual reports of the banks. For socio-economic indicators, property rights data are collected from the Heritage Foundation, corruption index data are collected from Transparency International and political stability index data have been collected from the database of World Bank.

4.2. Data Analysis and Models

This research is conducted to econometrically analyze the relationship between bank performance and socio-economic factors. The methodologies applied in this study are both static and dynamic. The basic framework for the panel data is defined as per the following regression model:

$$P_{nt} = \alpha + \beta X_{nt} + \varepsilon_{nt} \text{ or}$$
$$P_{it} = \alpha + \sum_{i=1}^{i} \beta_i X_{it}^i + \sum_{k=1}^{k} \beta_i X_{it}^k + \sum_{m=1}^{m} \beta_i X_{it}^m + \varepsilon_{it} \tag{i}$$

Econometric specifications:

$$ROA_{it} = \alpha + \beta_1 CIR_{i,t} + \beta_2 LTA_{i,t} + \beta_3 LLPGL_{i,t} + \beta_4 EQASS_{i,t} + \beta_5 GDP_t +$$
$$\beta_6 INFL_t + \beta_7 CPI_t + \beta_8 PR_t + \beta_9 PS_t + \varepsilon_{i,t} \tag{ii}$$

$$ROE_{it} = \alpha + \beta_1 CIR_{i,t} + \beta_2 LTA_{i,t} + \beta_3 LLPGL_{i,t} + \beta_4 EQASS_{i,t} + \beta_5 GDP_t +$$
$$\beta_6 INFL_t + \beta_7 CPI_t + \beta_8 PR_t + \beta_9 PS_t + \varepsilon_{i,t} \tag{iii}$$

Here, P represents the dependent variable ROA and ROE respectively.

The above model denotes the profitability equation of static model. It defines the relationship of profitability and socio-economic factors with regards to bank-specific (Size, Operating efficiency, Capital adequacy and Credit risk) and Macroeconomic

variables (GDP and inflation rate). Where i refers to individual banks; t refers to year, y_{it} refers to the return on assets (ROA) or Return on Equity (ROE) and the observations of banks i in a year t, X^i represents the internal determinants of a bank; X^k represents the external determinants of a bank; X^m represents the socio-economic determinants. ε_{it} is a normally distributed random variable disturbance term.

In banking literature, fixed and random effects models are usually employed for panel data. However, it is argued that persistence of bank profitability over time could affect next year's profit (Athanasoglou et al.2008). Thus, a difficulty arises with these models when a lagged dependent variable (or possible other regressor) is concerned, particularly in the context of very few time periods and many observations (Nickell, 1981). To address this issue, Arellano and Bond (1991) develop the difference GMM model by differencing all regressors and employing GMM (Hansen 1982). However, the difference GMM estimators can be subject to serious finite sample biases if the instruments used have near unit root properties. Use of the system GMM results in notably smaller finite sample bias and much greater precision when estimating autoregressive parameters using persistent series (Bond 2002). In addition, The GMM system controls for unobserved heterogeneity and for persistence of the dependent variable. The following formula for GMM is used to conduct the empirical analysis:

$$\text{II}_t = C + \delta \ \text{II}_{i,t-1} + \sum_{j=1}^{j} \beta_j \ X^j_{it} + \sum_{k=1}^{k} \beta_j \ X^k_{it} + \sum_{m=1}^{m} \beta_j \ X^m_{it} + \varepsilon_{it} \qquad \text{(iv)}$$

Where, II_t is the probability of bank i at time t where i=1…N, t=1, C is the Constant Term. $\text{II}_{i,t-1}$ = is the lag value of dependent variable, X_{it} are the explanatory variables and ε_{it}. the disturbance term, with v_{it} the unobserved bank-specific effect and u_{it} the idiosyncratic error. This is a one-way component regression model, where v_{et} ~ IIN (0, σ_v^2) and independent of u_{it} ~(0, σ_u^2). The X_{it} are grouped into bank-specific X^j_{it}, macroeconomic X^k_{it} and socio-economic variables X^m_{it} .

4.3. Variables and their Explanations

The variables of the model and the rational to be included in this study is described in this section. At first, the definition and a brief description of the variables are presented in table 4 which will be then followed by the detailed explanation.

Table 4: Details of the Variables Selected

Variable	Definition	Descriptions
P	Profitability of banks	Return on Assets (ROA), Return on Equity (ROE)
CIR	Cost to Income Ratio	It refers the operational efficiency of a bank
LTA	Bank Size	Natural log of total asset
LLPGL	Credit Risk	Loan loss provision/Total loan for each year averaged
EQASS	Capital Adequacy	Equity/ Total assets
GDP	Annual GDP Growth rate	Economic growth
INFL	Inflation rate	Represented by annual Consumer Price Inflation Rate
CPI	Corruption Perception Index	Range 0 (high level of corruption) to 10 (low level of corruption)
PR	Property Rights	The property rights index (0-100)
PS	Political Stability	Ranges from -2.5 (weak) to 2.5(strong)

4.3.1. Profitability of Banks

To measure the performance of the banks, both Return on Assets (ROA) suggested by Kosmidou (2008), Sufian and Habibullah (2009) and Return on Equity (ROE) have been used as an indicator of profitability (Athanasoglou et al. 2008).

4.3.2. Bank Specific Determinants

This study is primarily conducted to identify the impact of socio-economic determinants of banks performance but without considering the bank specific variables the true picture of a bank performance cannot be revealed. The bank size, operating efficiency, credit risk and asset management are the variables that are considered influential on the profitability of banks and hence need to be considered when measuring performance (Sufian and Habibullah 2009). The size of a bank is a very important variable as larger banks can minimize fixed cost, help to capture a large market share and receive a higher profit margin (Kosmidou 2008). Here, natural log of total assets has been used as a determinant of bank size (see Beck et al. 2013). Because of the economics of scale, size perceived to have positive effects on bank profitability. The cost-to-income ratio depicts the relationship between banks income to its expenses. As productive and efficient bank have low operating cost, researcher suggests that cost-to-income ratio has a negative relationship with profitability (Pasiouras and Kosmidou 2007). To represent credit risk, the ratio of loan loss provisions to total loans is used. The relationship between credit risk and profitability are expected to be negative as bad loans tend to reduce bank profitability (Miller and Noulas 1997). Finally, the capitalization of a bank is measured by the ratio of equity to the total asset. Though lower capitalized bank has higher leverage but it might induce additional risk. There is literature supporting both positive and negative relationship of capital adequacy to bank profitability. Goddard et al. (2004) found a positive relationship between capital adequacy ratio and profitability but Hassan and Bashir (2003) found a negative relationship.

4.3.3. External Determinant

Along with bank-specific determinants, macroeconomic determinants such as GDP and Inflation have been considered in this study. The previous studies on both conventional and Islamic bank shows a significant positive relationship between GDP growth rate and profitability of banks (Bikker and Hu 2002, Bashir 2003, Wasiuzzaman and Tarmizi 2010). Depending on the predictability of inflation, it can have either positive or negative effect (Perry, 1992). If inflation is not properly predicted it can significantly increase the overhead cost and, therefore, reduce bank profitability (Teng 2012). However, few other studies found a positive relationship between inflation and profitability (Molyneux and Thornton 1992, Kosmidou 2006, Chowdhury and Rasid, 2015).

4.3.4. Socio-economic Determinants

The primary focus area of this study is the socio-economic determinant and their impact on banks performance. There are many socio-economic factors available to choose from but for this study, we used corruption, property rights and political stability in this study. Although there are several corruption indices available for measuring the degree of

corruption in any country, there is evidence that these indices are highly correlated with each other (Treisman 2000). For this reason, in this study, the Transparency International Corruption Perception Index (CPI) is used. CPI used non-parametric statistics for standardizing the data and reflects the views of country analysts, risk agencies, business people and the public (Transparency International 2015). Previous credibility test showed that CPI has a positive correlation with economic growth, that is, an increase in GDP is associated with lower level of corruption. Previous researcher also found corruption has a significant negative impact on banks profitability (Arshad & Rizvi 2013, Chowdhury et al. 2016).

As the heart of the business, banking industry is perceived to be affected by political unrest (Chowdhury et. al.2016). In this study, Word Bank political stability index is used to measure the political stability of Bangladesh. Finally, government involvement, economic freedom and individual's property right also have great bearing on the business condition of a country. By considering aggregate productive efficiency Sala-I-Martin et al. (2007) found economic freedom influence profitability. In our study, property right has been used as a measure of economic freedom and data is collected from the Heritage Foundation Annual Index of Economic Freedom.

5.   RESULTS AND DISCUSSION

5.1   *Descriptive Study*

To understand the preliminary features of the data, the descriptive statistics of all the variables selected are presented in table 5. The average of our dependent variables, the return of average asset and the return on equity of 25 banks used in the study is 1.397 and 17.34 percent respectively. The mean of all other independent variables is also positive except political stability. From the variables, the highest standard deviation is on the cost to income ratio (13.91 %.), its mean is 45.01% and significantly varies across banks as its minimum is 19.23 and the maximum is 85.59. The mean of the variable LLPGL which is the proxy for credit risk is 1.927 and its standard deviation is 2.280. From the socioeconomic perspective, the negative mean of the PS signifies that the political stability of Bangladesh is less than the standard level.

5.2.   *Correlation Matrix*

The correlation matrix between the selected variables is presented in table 6. The cost to income ratio is negatively correlated with both the ROA and ROE. Where equity to the total asset are negatively related to ROA and positively correlated with ROE. From the macroeconomic variables, GDP is negatively correlated where inflation is positively correlated with the profitability measured by ROE and ROA. From the main variables of our study, socioeconomic determinants of banks both political stability and corruption are negatively correlated with ROE and ROA, where property rights are positively correlated with ROE and ROA. Signifying our initial assumption that corruption and political stability undermine bank performance, where a stable political situation can improve banks performance. Finally, since there is no value more than 0.85, we can say that there should not be any multicollinearity.

Table 5: Descriptive Statistics

	CIR	CPI	EQASS	INFL	GDP	LLPGL	PR	PS	ROA	ROE	TA
Mean	45.01	23.2	9.694	7.68	6.19	1.927	23.8	-1.44	1.397	17.34	109733.2
Median	42.50	24.0	9.910	7.50	6.12	1.550	20.0	-1.48	1.340	16.51	86213.00
Max.	85.59	27.0	18.76	10.7	7.06	27.67	30.0	-0.88	3.540	43.00	765241.0
Min.	19.23	17.0	0.240	5.40	5.05	0.000	20.0	-1.84	0.024	0.33	14442.00
Std. Dev.	13.91	3.17	2.862	1.49	0.55	2.280	4.33	0.23	0.676	8.00	96583.23
Obs.	245	245	245	245	245	245	245	245	245	245	245

Table 6: Correlation Matrix

	CIR	CPI	EQASS	GDP	INFL	LLPGL	PR	PS	ROA	ROE	TA
CIR	1										
CPI	-0.063	1									
EQASS	-0.203	0.014	1								
GDP	0.089	-0.345	-0.041	1							
INFL	-0.060	0.063	0.085	0.389	1						
LLPGL	0.155	0.140	0.104	0.160	0.057	1					
PR	0.06	-0.911	0.015	0.405	-0.086	-0.103	1				
PS	-0.005	0.445	-0.001	-0.043	0.013	0.123	-0.511	1			
ROA	-0.383	-0.076	0.322	-0.249	0.085	-0.212	0.034	-0.094	1		
ROE	-0.211	-0.312	-0.055	-0.090	0.036	-0.243	0.290	-0.198	0.716	1	
TA	0.274	0.513	0.097	-0.112	-0.049	0.179	-0.529	0.387	-0.171	-0.259	1

5.3. Model Estimation

The analysis of the variables confirms with the findings of several previous literatures while providing some new ground for study. The results of the analysis proved several variables have a significant impact on the profitability of a bank. In all our analysis credit risk measured by LLPGL, found to have a significant negative impact on both ROE and ROA confirming Miller and Noulas (1997) findings. Having consistent with Pasiouras and Kosmidou's (2007) findings our study also found that cost to income ratio has a significant negative impact on profitability. By denying Goddard et al. (2004) while supporting Hassan and Bashir (2003) our study proved that EQASS has a significant negative relationship with banks profitability (ROE). A probable explanation for this negative relation might be the leverage effect on ROE as the relationship found insignificant in different GMM technique when ROA is considered as dependent variables. Total asset has a significant effect on both ROA and ROE of the sampled banks.

Since the Hausman test has proven that in our case random effect is more suitable than fixed effect.[1] For reliability of the dynamic model, Table-7 and Table-8 reports that the null hypothesis of no first-order autocorrelation is rejected. The rejection of the null hypothesis of no first-order autocorrelation does not result in an inconsistent System GMM estimator. This is only the case when second-order correlation is present, but the p-value of the Arrelano and Bond test of second order correlation does not reject the null

---

[1] This study tested the Hausman test and found the probability of Chi-square value (5.36) with P-value 0.373, we can say that random effect model is comparatively more suitable than fixed effect.

Table 7: Result when ROE as the Measure of Profitability

Variable	Static Model		Differenced GMM		System GMM	
	Fixed	**Random**	**One-step**	**Two-step**	**One-step**	**Two-step**
Intercept	44.88***	44.48***	62.69***	62.06***	63.48***	60.95***
ROE –lag of dep.			0.3161***	0.3341**	0.2929***	0.3192***
LTA	0.1630**	0.1343	0.1226	0.1433***	0.1642	0.1345***
LLPGL	-0.5163***	-0.4684**	-0.6769***	-0.7554**	-0.6659***	-0.7279
CIR	-0.1438***	-0.1323***	-0.3138***	-0.2577***	-0.3179***	-0.2557***
EQASS	-0.6071***	-0.4719***	-1.019***	-0.9799	-1.020***	-0.9670*
GDP	-4.6520***	-4.596***	-3.308***	-2.925***	-3.433***	-2.955*
INFL	1.1540***	1.1150***	0.5546*	0.4734	0.5967**	0.5329
PR	0.6267***	0.5939**	0.2814	0.0708	0.2974	0.0692
PS	1.407	1.2081	0.0238	-1.0021	-0.1525	-0.9842
CPI	0.3084	-0.3551	-0.6873**	-0.7269**	-0.7034**	-0.6882***
R-squared	0.3012	0.2998	-	-	-	-
Sargan test	-	-	Prob>chi2= 0.1934	Prob>chi2= 0.1832	Prob>chi2= 0.4290	Prob>chi2= 0.4290
F-stat/ Wald-χ^2	F stat= 11.42***	92.57***	182.80***	72.48***	227.98***	63.44***
AR(1) test	-	-	Z= -3.4058 p=0.0007	Z= -2.096 P= 0.0361	Z= -3.149 P= 0.0016	Z= -2.404 P= 0.0162
AR(2) test	-	-	Z=-0.52878 P= 0.5970	Z=-0.4238 P= 0.6717	Z= -0.5935 P= 0.5528	Z= -0.4638 P= 0.6428
No of Obs.	245	245	197	197	222	222

Notes: (***), (**), (*) indicates significance at 1, 5, and 10% level respectively.

Table 8: Result when ROA as the Measure of Profitability

Variable	Static Model		Differenced GMM		System GMM	
	Fixed	**Random**	**One-step**	**Two-step**	**One-step**	**Two-step**
Intercept	4.6451***	4.5450***	5.9520***	6.5901***	5.7947***	5.501
ROA –lag of dep.			0.3859***	0.4533**	0.3667 ***	0.4181***
LTA	0.0642**	0.0754**	0.1654*	0.1046***	0.9630**	0.9570***
LLPGL	-0.0319*	-0.3292**	-0.0139	-0.0076	-0.0147	-0.0038
CIR	-0.0156***	-0.0147***	-0.0211***	-0.0186*	-0.0202 **	-0.0157**
EQASS	0.0285	0.0441***	-0.0175	-0.0311	-0.0092	-0.0338
GDP	-0.4486***	-0.4358***	-0.4311***	-0.4086***	-0.4133***	-0.4636***
INFL	0.1012***	0.0964***	0.0559**	0.03612	0.0490*	0.0618
PR	0.0064	0.0031	-0.004	-0.0232	-0.0049	-0.0002
PS	0.0154	0.0006	0.0084	-0.0771	-0.0038	0.0626
CPI	-0.0382	-0.0416*	-0.0687**	-0.0849***	-0.0682**	-0.0513***
R-squared	0.3082	0.2998	-	-	-	-
Sargan test	-	-	42.36 Prob>chi2= 0.1832	42.36 Prob>chi2= 0.1832	45.3266 Prob> chi2 = 0.3752	45.32663 Prob> chi2 = 0.3752
F-stat/ Wald-χ^2	F stat= 11.81***	109.01***	122.63***	68.89***	98.21***	75.67***
AR(1) test	-	-	Z= -3.5916	Z= -2.853	Z=-3.6559	Z=-3.0217
			p=0.0003	P= 0.0043	P=0.0003	P= 0.0025
AR(2) test	-	-	Z= 0.3649	Z= 0.3842	Z=0.3583	Z=-0.3312
			P= 0.7151	P= 0.7008	P= 0.7201	P=0.7405
No of Obs.	245	245	197	197	222	222

Notes: (***), (**), (*) indicates significance at 1, 5, and 10% level respectively.

hypothesis, indicating that there is no second-order correlation. These results confirms the usage of a dynamic panel data model in which several variables are instrumented; using lags of these variables removes autocorrelation in the second-order. Furthermore, over-identification is tested using the Sargan's test (Roodman 2006). Both of Arrelano and Bond test of first and second-order autocorrelation in the residuals and the Sargan test of over-identification have been performed in this study[2].

The two macroeconomics variables indicate different relationship with banks profitability. As expected, by confirming theoretical prediction and earlier researchers (Molyneux and Thornton 1992, Kosmidou 2008, Chowdhury and Rasid 2015) inflation found to be a significant positive relationship with banks profitability (both ROE and ROA). However, both two-step dynamic GMM and two step system GMM shows inflation has no significant relationship with profitability. As two-step model use lag variables from last two years it is expected that the economy adjusted their interest rate per the inflation and, therefore, the impact might have been mitigated.

However, the interesting findings is the impact of GDP growth rate on bank performance. Rejecting most of the previous researchers finding our analysis found GDP growth rate has a significant negative impact on banks profitability. The most sophisticated measure of this study, two step difference GMM found a value of -2.925 with ROE (table: 7) and -0.4086 with ROA (table: 8) in 1% level of significance. The study confirms that the bank profitability is negatively related with GDP growth rate. A probable explanation may be the GDP growth rate are occurred mainly because of the countries well performing capital and foreign exchange market. However, there is more explanatory research needed to detect and rectify the actual reason for such aberration.

The focus area of this study, the socio-economic determinant also found to have some important relationship with bank profitability. The static model signifies that property rights have a significant positive impact on ROE (0.6267 on fixed effect and 0.5939 on random effect). Reflecting that an improvement in property rights and investment freedom can significantly improve the performance of the banking sector. Although none of the analysis confirm any statistically significant relationship between political stability and banks profit performance, it cannot be said that there is no relation exist. However, the analysis proves that corruption is the most significant socio-economic determinants that impact the profitability of a Muslim country's banks. In all models, it is found that corruption has statistically significant negative relation with banks profitability and the more sophisticated the model, the stronger the relationship. At both one step and two step difference GMM corruption has -0.6873 and -0.7269 impacts on ROE at 5% level of significance and -0.0687 and -0.0849 impacts on ROA at 5% and 1% level of significance respectively.

6. CONCLUSION

The ideal financial system of a Muslim country requires the adoption and implementation of a system that ensures human rights, a legitimate political authority, well-functioning

---

[2] Chi² value is 78.11 and the prob> Chi²=0.067 which is higher than 5% level of significance, meaning that the restrictions are valid

markets, absence of corruption, and social and economic justice. Unfortunately, today's Muslim countries are institutionally deficient. Thus, both social and economic indicators of Muslim countries fall very low in the world social and financial indexes. However, as the core principles of Islam provide the better roadmap for reforms and institution building, by adhering to these principles Muslim countries can improve their economic and financial condition.

In this study, it has been examined that the level of socioeconomic development could matter for banking performance. Especially, corruption has a significant impact on the profitability of a bank. This study used 25 banks over the period of 2005-2014 to identify how socioeconomic development could affect the banks performance. Along with corruption, there is some sketchy evidence that other socio-economic variables like, property rights and degree of economic freedom could impact a bank's performance. The study also confirms previous well-established literature on banking performance (Chowdhury *et al*. 2016). In addition to socioeconomic variables the bank-specific and macroeconomic determinant also, exhibit measureable effects on bank performance. From the bank-specific variables, it has been found that the relationship between cost and risk to banks performance is negative. Meaning that, by cutting down cost or reducing risk exposure banks can increase their profit margin. Although the significant negative impact of GDP growth rate on banks performance answered a preliminary question but it also leaves room for further study. In addition, the significant negative impact of corruption implies that by improving moral values and removing corruption a Muslim country can improve the condition of their banking sector.

Finally, this paper suggests that policy maker such as Bank management; regulators and investors should follow a comprehensive approach. They need to consider socioeconomic factors along with bank-specific and macroeconomic factors in developing policy alternatives. As the study prove that corruption is not only a restrain for equity it is also a major obstacle for efficient performance of financial institution. Therefore, as an implication of this study, both regulatory authorities and bankers should work together to remove the corrupt practices form institutions. However, the researchers strongly believe that these are preliminary results that require additional data for variables, more sample countries, and more extensive study to draw a concrete conclusion of the findings.

REFERENCES

Abdul-Majid, M., Saal, D. S., & Battisti, G., (2010). Efficiency in Islamic and conventional banking: an international comparison. *Journal of Productivity Analysis*, *34*(1), 25-43.

Abedifar, P., Molyneux, P., & Tarazi, A. (2013). Risk in Islamic Banking. *Review of Finance*, *17*(6), 2035-2096.

Aburime, T. (2008). Determinants of Bank Profitability: Macroeconomic Evidence from Nigeria. *SSRN Electronic Journal*. Retrieved July 7, 2015, from http://dx.doi.org/10.2139/ssrn.1231064

Adkins, L., Moomaw, R., & Savvides, A. (2002). Institutions, Freedom, and Technical Efficiency. *Southern Economic Journal*, *69*(1), 92-108.

Altman, M. (2008). How Much Economic Freedom Is Necessary for Economic Growth? Theory and Evidence. *Economics Bulletin*, *15*(2), 1-20.

Arellano, M., & Bond, S. (1991). Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations. *The Review of Economic Studies*, *58*(2), 277-297.

Armenta, M. W. (2007). The Financial Sector and Economic Development: Banking on the Role of Human Capital. *Journal of Public & International Affairs*, *18*, 188-203.

Arshad, S., & Rizvi, S. (2013). Impact of corruption on bank profitability: an analysis of Islamic banks. *International Journal of Business Governance and Ethics*, *8*(3), 195-203.

Asiedu, E. (2006). Foreign Direct Investment in Africa: The Role of Natural Resources, Market Size, Government Policy, Institutions and Political Instability. *The World Economy*, *29*(1), 63-77.

Askari, H., Iqbal, Z., & Mirakhor, A. (2014). Risk-Sharing Finance and the Role of Public Policy. In H. Askari, Z. Iqbal & A. Mirakhor (Eds.), *Challenges in Economic and Financial Policy Formulation* (pp. 47-62). US: Palgrave Macmillan.

Athanasoglou, P., Brissimis, S., & Delis, M. (2008). Bank-specific, industry-specific and macroeconomic determinants of bank profitability. *Journal of International Financial Markets, Institutions and Money*, *18*(2), 121-136.

Bangladesh Bank. (2015). *Bangladesh Bank Annual Report*. Dhaka: Bangladesh Bank.

Barro, R. (1991). Economic Growth in a Cross Section of Countries. *The Quarterly Journal of Economics*, *106*(2), 407-443.

Bashir, A. (2003). Determinants of profitability in Islamic banks: some evidence from the Middle East. *Islamic Economic Studies*, *11*(1), 31-57.

Beck, T., Demirgüç-Kunt, A., & Merrouche, O. (2013). Islamic vs. conventional banking: Business model, efficiency and stability. *Journal of Banking & Finance*, *37*(2), 433-447.

Belanes, A., & Hassiki, S. (2012). Efficiency in Islamic and conventional banks: a comparative analysis in the MENA region. *Bank. Mark. Invest.*, *120*, 36-49.

Berger, A. (1995). The Relationship between Capital and Earnings in Banking. *Journal of Money, Credit and Banking*, *27*(2), 432-456.

Bikker, J. A., Hu, H. (2002). Cyclical patterns in profits, provisioning and lending of banks procyclicality of the new Basel capital requirements. *BNL Quarterly Review, 55*(221), 143-175.

Bond, S. (2002). Dynamic panel data models: a guide to micro data methods and practice. *Portuguese Economic Journal*, *1*(2), 141-162.

Bourkhis, K., & Nabi, M. (2013). Islamic and conventional banks' soundness during the 2007-2008 financial crisis. *Review of Financial Economics*, *22*(2), 68-77.

Caby, J., & Boumediene, A. (2013). The financial volatility of Islamic banks during the subprime crisis. *Bank. Mark. Invest*, *126*, 30-39.

Chinn, M., & Ito, H. (2007). Current account balances, financial development and institutions: Assaying the World 'Savings Glut'. *Journal of International Money and Finance*, *26*(4), 546-569.

Chowdhury, M. A. F., Haque, M. M., Alhabshi, S. O., & Masih, A. M. M. (2016). Socioeconomic Development and Its Effect on Performance of Islamic Banks: Dynamic Panel Approaches. In M. Zulkhibri, A. G. Ismail & S. E. Hidayat (Eds.), *Macroprudential Regulation and Policy for the Islamic Financial Industry* (pp. 229-243). Switzerland: Springer International Publishing.

Chowdhury, M., & Rasid, M. (2015). The determinants of the profitability of Islamic banks: a cross-sectional study from Asia and Africa. *International Journal Business and Globalisation, 15*(3), 375-388.

Cihak, M., & Hesse, H. (2010). Islamic Banks and Financial Stability: An Empirical Analysis.

Journal of Financial Services Research, *38*(2-3), 95-113.

Dridi, J., & Hasan, M. (2010). *The Effects of the Global Crisis on Islamic and Conventional Banks: A Comparative Study.* IMF Working Papers WP/10/201.

Goddard, J., Molyneux, P., & Wilson, J. (2004). The profitability of European banks: a cross-sectional and dynamic panel analysis. *Manchester School*, *72*(3), 363-381.

Hansen, L. (1982). Large sample properties of generalized method of moments estimators. *Econometrica, 50*(4), 1029-1054.

Hassan, M. K., & Bashir, A. (2003). *Determinants of Islamic banking profitability.* Paper presented at the Proceedings of the Economic Research Forum 10th Annual Conference, Marrakesh, Morocco.

Heckelman, J., & Knack, S. (2009). Aid, Economic Freedom and Growth. *Contemporary Economic Policy*, *27*(1), 46-53.

Heritage org, (2015). *Index of Economic Freedom: Promoting Economic Opportunity and Prosperity by Country*. Retrieved November 13, 2015, from http://www.heritage.org/index/

Iqbal, M. (2001). Islamic and conventional banking in the nineties: a comparative study. *Islamic economic studies, 8*(2), 1-27.

Islamicity rankings. (2017). Retrieved March 31, 2017, from http://www.heritage.org/index/].http://islamicity-index.org/wp/islamicity-rankings/

Jobst, A. (2007). *The Economics of Islamic Finance and Securitization*. IMF Working Papers WP/07/117.

Kabir, M. R., Ullah, M. H., & Khan, M. M. (2012). Comparative Analysis Of Profit Rate Of Islamic Banks On Investment (ROI) And Fixed Rate Of Interest On Loan Of Conventional Banks In Bangladesh. *World Journal of Social Sciences, 2*(6), 39-48.

Karim, R., & Ali, A. (1989). Determinants of the Financial Strategy of Islamic Banks. *Journal of Business Finance & Accounting*, *16*(2), 193-212.

Khediri, B. K., & Khedhiri, H. B. (2009). Determinants of Islamic bank profitability in the MENA region. *IJMEF*, *2*(3/4), 409-426.

King, R., & Levine, R. (1993). Finance and Growth: Schumpeter Might Be Right. *The Quarterly Journal of Economics*, *108*(3), 717-737.

Kosmidou, K. (2008). The determinants of banks' profits in Greece during the period of EU financial integration. *Managerial Finance*, *34*(3), 146-159.

La Porta, R., Lopez de Silanes, F., & Shleifer, A. (2002). Government Ownership of Banks. *Journal of Finance, American Finance Association, 57*(1), 265-301.

Lee, C., & Ng, D. (2009). Corruption and International Valuation: Does Virtue Pay? *Investing*, *18*(4), 23-41.

Levine, R., & Zervos, S. (1998). Stock Markets, Banks, and Economic Growth. *American Economic Review*, *88*(3), 537-558.

Metwally, M. (1997). Differences between the financial characteristics of interest-free banks and conventional banks. *European Business Review*, *97*(2), 92-98.

Miller, S., & Noulas, A. (1997). Portfolio mix and large-bank profitability in the USA. *Applied Economics*, *29*(4), 505-512.

Molyneux, P., & Thornton, J. (1992). Determinants of European bank profitability: A note. *Journal of Banking & Finance*, *16*(6), 1173-1178.

Murjan, W., & Ruza, C. (2002). The competitive nature of the Arab Middle Eastern banking markets. *International Advances in Economic Research*, *8*(4), 267-274.

Nickell, S. (1981). Biases in dynamic models with fixed effects. *Econometrica, 49*(6), 1417-1426.

Olson, D., & Zoubi, T. (2008). Using accounting ratios to distinguish between Islamic and conventional banks in the GCC region. *The International Journal of Accounting*, *43*(1), 45-65.

Pagano, M. (2008). Credit, cronyism, and control: Evidence from the Americas. *Journal of International Money and Finance*, *27*(3), 387-410.

Pasiouras, F., & Kosmidou, K. (2007). Factors influencing the profitability of domestic and foreign commercial banks in the European Union. *Research in International Business and Finance*, *21*(2), 222-237.

Perry, P. (1992). Do banks gain or lose from inflation. *Journal of Retail Banking*, *14*(2), 25-40.

Reedom, C., & Rowth, E. (2000). Exonomic Freedom and Economic Growth: A Short Run Causal Investigation. *Journal of Applied Economics*, *3*(1), 71-91.

Rehman, S., & Askari, H. (2010). How Islamic are Islamic Countries? *Global Economy Journal*, *10*(3), 1-37.

Roodman, D. (2006). *How to do xtabond2: An introduction to difference and system GMM in Stata*. Center for Global Development Working Paper No.103.

Rousseau, P. L., & Wachtel, P. (2005). *Economic Growth and Financial Depth: Is the Relationship Extinct Already?* Development Economic Research (UNU-WIDER) Working Paper DP2005/10.

Sala-I-Martin, X., Blanke, J., Hanouz, M. D., Geiger, T., Mia, I., & Paua, F. (2007). *The Global Competitiveness Index: Measuring the Productive Potential of Nations.* The global competitiveness report 2007-2008. Switzerland: World Economic Forum.

Solé, J. (2007). *Introducing Islamic Banks into Coventional Banking Systems*. IMF Working Paper WP/07/175.

Srairi, S. (2010). Cost and profit efficiency of conventional and Islamic banks in GCC countries. *Journal of Productivity Analysis*, *34*(1), 45-62.

Sufian, F., & Habibullah, M. (2009). Bank specific and macroeconomic determinants of bank profitability: Empirical evidence from the China banking sector. *Front. Econ. China*, *4*(2), 274-291.

Teng, K. Y. (2012) *The Determinants of Islamic Banks Profitability in Malaysia*. Doctoral dissertation, Universiti Tunku Abdul Rahman.

Todaro, M. (2003). *Economic development*. 8th ed. Boston, MA: Addison Wesley.

Transparency International. (2015). *The Global Anti-Corruption Coalition*. Retrieved January 24, 2016, from https://www.transparency.org/news/feature/corruption_perceptions index.

Treisman, D. (2000). The causes of corruption: a cross-national study. *Journal of Public Economics*, *76*(3), 399-457.

Wasiuzzaman, S., & Tarmizi, H. (2010). Profitability of Islamic banks in Malaysia: an empirical analysis. *Journal of Islamic Economics, Banking and Finance, 6*(4), 53-68.

Wei, S-J. (1999). *Corruption in Economic Development: Beneficial Grease, Minor Annoyance, or Major Obstacle?* World Bank Policy Research Working Paper 2048.

World Bank. (2015). *Worldwide Governance Indicators.* Washington DC: World Bank.