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

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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

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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).


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 (Reedem & 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,
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**

![Corruption Perception Index](image)

*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**

![Political Stability Index](image)

*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)

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)

### 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
Do Socio-Economic Factors Matter for the Financial Development of A Muslim Country?
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Table 1: Structure of Banking System

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

Source: Bangladesh Bank (2015)

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

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SCBs</td>
<td>21.4</td>
<td>22.9</td>
<td>29.9</td>
<td>25.4</td>
<td>21.4</td>
<td>15.7</td>
<td>11.3</td>
<td>23.9</td>
<td>19.8</td>
<td>22.2</td>
<td>21.9</td>
</tr>
<tr>
<td>DFIs</td>
<td>34.9</td>
<td>33.7</td>
<td>28.6</td>
<td>25.5</td>
<td>25.9</td>
<td>24.2</td>
<td>24.6</td>
<td>26.8</td>
<td>26.8</td>
<td>32.8</td>
<td>25.5</td>
</tr>
<tr>
<td>PCBs</td>
<td>5.6</td>
<td>5.5</td>
<td>5.0</td>
<td>4.4</td>
<td>3.9</td>
<td>3.2</td>
<td>2.9</td>
<td>4.6</td>
<td>4.5</td>
<td>4.9</td>
<td>5.7</td>
</tr>
<tr>
<td>FCBs</td>
<td>1.3</td>
<td>0.8</td>
<td>1.4</td>
<td>1.9</td>
<td>2.3</td>
<td>3.0</td>
<td>3.0</td>
<td>3.5</td>
<td>5.5</td>
<td>7.3</td>
<td>8.2</td>
</tr>
<tr>
<td>Total</td>
<td>13.6</td>
<td>13.2</td>
<td>13.2</td>
<td>10.8</td>
<td>9.2</td>
<td>7.3</td>
<td>6.1</td>
<td>10.0</td>
<td>8.9</td>
<td>10.0</td>
<td>9.7</td>
</tr>
</tbody>
</table>

Source: Bangladesh Bank (2015)

Table 3: Profitability Ratios by Type of Banks

<table>
<thead>
<tr>
<th>Bank Type</th>
<th>Return on assets (ROA)</th>
<th>Return on equity (ROE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCBs</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>DFIs</td>
<td>-0.2</td>
<td>-0.3</td>
</tr>
<tr>
<td>PCBs</td>
<td>1.1</td>
<td>1.3</td>
</tr>
<tr>
<td>FCBs</td>
<td>2.2</td>
<td>3.1</td>
</tr>
<tr>
<td>Total</td>
<td>0.8</td>
<td>0.9</td>
</tr>
</tbody>
</table>

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:

\[ P_{nt} = \alpha + \beta X_{nt} + \varepsilon_{nt} \]
\[ P_{it} = \alpha + \sum_{l=1}^{L} \beta_l X_{lt}^l + \sum_{k=1}^{K} \beta_k X_{kt}^k + \sum_{m=1}^{M} \beta_m X_{mt}^m + \varepsilon_{it} \] (i)

Econometric specifications:

\[ \text{ROA}_{it} = \alpha + \beta_1 \text{CIR}_{i,t} + \beta_2 \text{LTA}_{i,t} + \beta_3 \text{LLPGL}_{i,t} + \beta_4 \text{EQASS}_{i,t} + \beta_5 \text{GDP}_{t} + \beta_6 \text{INFL}_{t} + \beta_7 \text{CPI}_{t} + \beta_8 \text{PR}_{t} + \beta_9 \text{PS}_{t} + \varepsilon_{i,t} \] (ii)

\[ \text{ROE}_{it} = \alpha + \beta_1 \text{CIR}_{i,t} + \beta_2 \text{LTA}_{i,t} + \beta_3 \text{LLPGL}_{i,t} + \beta_4 \text{EQASS}_{i,t} + \beta_5 \text{GDP}_{t} + \beta_6 \text{INFL}_{t} + \beta_7 \text{CPI}_{t} + \beta_8 \text{PR}_{t} + \beta_9 \text{PS}_{t} + \varepsilon_{i,t} \] (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. $\epsilon_{it}$ 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:

$$II_i = C + \delta II_{i,t-1} + \sum_{j=1}^{J} \beta_j X_{jit} + \sum_{k=1}^{K} \beta_j X_{kit}^j + \sum_{m=1}^{M} \beta_j X_{mit}^m + \epsilon_{it}\quad (iv)$$

Where, $II_i$ is the probability of bank i at time t where i=1…N, t=1, C is the Constant Term. $II_{i,t-1}$ is the lag value of dependent variable, $X_{jit}$ are the explanatory variables and $\epsilon_{it}$, the disturbance term, with $\nu_{it}$ the unobserved bank-specific effect and $u_{it}$ the idiosyncratic error. This is a one-way component regression model, where $\nu_{it}$ ~ $\mathcal{N}$ (0, $\sigma_{it}^2$) and independent of $u_{it}$ ~ (0, $\sigma_u^2$). The $X_{jit}$ are grouped into bank-specific $X_{jit}^j$, macroeconomic $X_{kit}^k$ and socio-economic variables $X_{mit}^m$.

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

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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.
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Table 7: Result when ROE as the Measure of Profitability

<table>
<thead>
<tr>
<th>Variable</th>
<th>Static Model</th>
<th>Differenced GMM</th>
<th>System GMM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fixed</td>
<td>Random</td>
<td>One-step</td>
</tr>
<tr>
<td>Intercept</td>
<td>44.88***</td>
<td>44.48***</td>
<td>62.69***</td>
</tr>
<tr>
<td>ROE – lag of dep.</td>
<td>0.1630**</td>
<td>0.1343</td>
<td>0.3161***</td>
</tr>
<tr>
<td>LTA</td>
<td>-0.5163***</td>
<td>-0.4684**</td>
<td>-0.6769***</td>
</tr>
<tr>
<td>LLPGL</td>
<td>-0.1438***</td>
<td>-0.1323***</td>
<td>-0.3138***</td>
</tr>
<tr>
<td>EQASS</td>
<td>-0.6071***</td>
<td>-0.4719***</td>
<td>-1.019***</td>
</tr>
<tr>
<td>GDP</td>
<td>-4.6520***</td>
<td>-4.596***</td>
<td>-3.308***</td>
</tr>
<tr>
<td>INFL</td>
<td>1.1540***</td>
<td>1.1150***</td>
<td>0.5546*</td>
</tr>
<tr>
<td>PR</td>
<td>0.6267***</td>
<td>0.5939**</td>
<td>0.2814</td>
</tr>
<tr>
<td>PS</td>
<td>1.407</td>
<td>1.2081</td>
<td>0.0238</td>
</tr>
<tr>
<td>CPI</td>
<td>0.3084</td>
<td>-0.3551</td>
<td>-0.6873**</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.3012</td>
<td>0.2998</td>
<td>-</td>
</tr>
<tr>
<td>Sargan test</td>
<td>-</td>
<td>-</td>
<td>42</td>
</tr>
<tr>
<td>F-stat/ Wald-χ²</td>
<td>11.42***</td>
<td>92.57***</td>
<td>182.80***</td>
</tr>
<tr>
<td>AR(1) test</td>
<td>-</td>
<td>-</td>
<td>Z=-3.4058</td>
</tr>
<tr>
<td>AR(2) test</td>
<td>-</td>
<td>-</td>
<td>Z=-0.5287</td>
</tr>
<tr>
<td>No of Obs.</td>
<td>245</td>
<td>245</td>
<td>197</td>
</tr>
</tbody>
</table>

Notes: (***) (**) (*) indicates significance at 1, 5, and 10% level respectively.
### Table 8: Result when ROA as the Measure of Profitability

<table>
<thead>
<tr>
<th>Variable</th>
<th>Static Model</th>
<th>Different GMM</th>
<th>System GMM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fixed</td>
<td>Random</td>
<td>One-step</td>
</tr>
<tr>
<td>Intercept</td>
<td>4.6451***</td>
<td>4.5450***</td>
<td>5.9520***</td>
</tr>
<tr>
<td>ROA -lag of dep.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LTA</td>
<td>0.0642**</td>
<td>0.0754**</td>
<td>0.1654*</td>
</tr>
<tr>
<td>LLPGL</td>
<td>-0.0319*</td>
<td>-0.3292**</td>
<td>-0.0139**</td>
</tr>
<tr>
<td>CIR</td>
<td>-0.0156***</td>
<td>-0.0147***</td>
<td>-0.0211***</td>
</tr>
<tr>
<td>EQASS</td>
<td>0.0285</td>
<td>0.0441***</td>
<td>-0.0175</td>
</tr>
<tr>
<td>GDP</td>
<td>-0.4486***</td>
<td>-0.4358***</td>
<td>-0.4311***</td>
</tr>
<tr>
<td>INFL</td>
<td>0.1012***</td>
<td>0.0964***</td>
<td>0.0559**</td>
</tr>
<tr>
<td>PR</td>
<td>0.0064</td>
<td>0.0031</td>
<td>-0.004</td>
</tr>
<tr>
<td>PS</td>
<td>0.0154</td>
<td>0.0006</td>
<td>0.0084</td>
</tr>
<tr>
<td>CPI</td>
<td>-0.0382</td>
<td>-0.0416*</td>
<td>-0.0687**</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.3082</td>
<td>0.2998</td>
<td>-</td>
</tr>
<tr>
<td>Sargan test</td>
<td></td>
<td></td>
<td>42.36</td>
</tr>
<tr>
<td>F-stat/ Wald-χ²</td>
<td>11.81***</td>
<td>109.01***</td>
<td>122.63***</td>
</tr>
<tr>
<td>AR(2) test</td>
<td></td>
<td></td>
<td>p=0.0003</td>
</tr>
<tr>
<td>No of Obs</td>
<td>245</td>
<td>245</td>
<td>197</td>
</tr>
</tbody>
</table>

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

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

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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


