



# Other people's money: The profit performance of Bangladeshi family dominated banks

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# **Other People's Money: The Profit Performance of Bangladeshi Family Dominated Banks**

(Revised) November 2018

## ***Abstract***

Studies in developed economies show that family-owned non-financial firms outperform others, explained by agency theory and protection of family capital. Findings in emerging economies are equivocal, while studies of family domination and banks' performance are scant. This paper examines the profit-performance of family-dominated banks in Bangladesh under competing hypotheses of bank-market structure. Using panel estimation, we model the profit-performance of banks and show that the principal drivers are costs, efficiency and non-performing loans. Family-dominated banks are less efficient and less profitable. The sources of weaker performance are higher non-performing loans and higher costs, with indirect evidence of poor corporate governance.

**Keywords:** Bangladesh Banking Market, Profit Performance, Family Dominated Banks, Corporate Governance

**JEL Codes:** G21, G28

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# 1. Introduction

The global financial crisis has stimulated a decade of debate about the vulnerability and soundness of the banking system. The Basel committee on banking supervision has highlighted the central roles of corporate governance<sup>1</sup> and internal control (Maati and Maati-Sauvez, 2012). Several studies have examined the relationship between ownership structure and bank performance (La Porta et al., 2002; Hasan and Marton, 2003; Berger et al., 2005; Bonin et al., 2005, Douma et al., 2006) with respect to differences in identity, concentration and resource allocation among owners, as well as their relative power on the board, incentives, and ability to monitor managers.

Mainly, researchers have examined the banking sectors of developed economies (Bonin et al., 2005; Weill, 2007), with less attention to the bank performance of emerging economies. This paper examines the Bangladesh banking system, which has a history of only half a century. The Bangladesh banking structure is important to understand because the financial system is heavily bank based. The government promotes the establishment of new banks through periodically issuing new licences. Furthermore, the ownership structure of the banks is more important in developing country economies where overall the protection of shareholders' rights is weak (Ayadi et al., 2011), including in Bangladesh.

Our data sample<sup>2</sup> covers the private commercial banks in Bangladesh. They can be classified into three generations according to their year of incorporation. The earliest is known as generation 1 banks, and these are largely dominated by family owners.<sup>3</sup> Generation 2 and 3

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<sup>1</sup> Corporate governance is a set of transparent relationships between an institution's management, its board, shareholders and other stakeholders; hence, involves composition and role of the board of directors, enhancement of shareholders value, protection of shareholders rights, the integrity of accounting practices and disclosure and internal control system (Al-Farooque *et al.*, 2007).

<sup>2</sup> We deliberately choose the years between 2001 and 2012 for this paper to capture the full effect of generation 1, 2 and 3 banks. From 2013-14, 9 new banks came into the industry which are classified as 4 banks. Data for these banks are not readily available.

<sup>3</sup> Different definitions of family-dominated firms have emerged in recent years, but there is no clear consensus on a definition. However, most interpretations highlight ownership, family involvement, family control and the intention of transferring the business to future generations as key components of what could be classified as family-dominated firms (Chrisman, Chua and Sharma, 2005).

banks were consecutively incorporated a decade later. The performance of generation 1 banks relative to generation 2 and 3 banks is the focus of this paper.

We aim to test the hypothesis that banks with family-dominated ownership under-perform other commercial banks, as measured by profitability performance. Most previous studies have examined the performance of non-banking firms in terms of ownership, and the incentive structure that arises from the use of the owner's capital. This paper focuses on the ownership of banks, which deal with 'other people's money'.

In the case of Bangladesh, it is argued in the literature that one of the reasons for bank underperformance is due to weak corporate governance in the family-dominated banks (Reaz and Arun, 2006). To pre-empt our results, we find that the data is consistent with this interpretation of weak corporate governance coincident with family dominance. Our finding is also supported by primary data from a qualitative survey.

This paper is organised as follows. The next section reviews the literature on bank profitability, the Bangladesh banking system, governance, agency theory, and the role of family-dominated ownership. Section 3 analyses the dataset and describes the methods employed. Section 4 presents and explains the results. The final section explains our contribution and indicates paths for further research.

## **2. Literature Review**

In developing financial markets, banking regulation evolved with the periodic introduction of laws and codes of corporate governance. In reality, due to the ineffective implementation of regulation and improper evaluation of corporate governance, many banks have indulged in irregular activities that hamper their efficiency and profitability (Matama, 2005). This section provides an overview of the banking structure of Bangladesh and highlights the concept of bank profitability, corporate governance and the importance of ownership composition on bank

performance in a developing country. Banking research has not focused heavily on this type of economic and political setting to date.

## **2.1 Overview of the Banking Structure of Bangladesh**

In Bangladesh, the banking sector accounts for most of the total financial assets. In 2012, the banking sector of Bangladesh consisted of 4 state-owned commercial banks, 5 specialized development banks, 30 private commercial banks and 9 foreign commercial banks. The main assets of all banks are loans, advances and investment in government securities, while the main liabilities are time and demand deposits. Prior to 1982, the state-owned commercial banks dominated; after privatization and the emergence of the private commercial banks, the relative position of the state-owned commercial banks diminished.

Private commercial banks were established during the 1980s. They are classified under two categories: conventional and Islamic Shariah based. In 2012, 30 conventional private commercial banks operated and 7 were Islamic. The private-commercial banks are classified into 3 generations, based on their year of establishment. Generation 1 are those established between 1982 and 1990. At this time, ownership and control was transferred from the government to the private sector. Generation 2 were established between 1991 and 1998 and generation 3 between 1998 and 2001. In total, 8 banks are considered as 1<sup>st</sup> generation private commercial banks where 6 are conventional, and 2 are Islamic Shariah based. (Appendix 1 presents a classification of the scheduled banks).

It is arguable that the speed of transformation of the banking sector meant that poor training and weak regulation provided the first-generation banks with little in the form of guidance on lending criteria or proper corporate governance. The pre-reform system for the banks stressed disbursements rather than recoveries and the accounting and debt collection systems that the first-generation banks inherited were probably inadequate. It became more common for borrowers to default on loans than to repay them; the lending system was simply disbursing grant assistance to private individuals who were poorly qualified for loans. The rate of recovery of agricultural loans was only 27 per cent in 1986 (Gregory and Adams, 1986 and Ahmed, 1986)

and the rate for industrial loans was even lower.<sup>4</sup> On the other hand, the lending interest rates on priority sectors were kept deliberately low, which did not cover the risk and cost (Chowdhury and Ahmed, 2009; Islam et al, 2013; Islam et al, 2014). Thus, interest ceilings and financial repression was the main cause of poor performance resulting in high non-performing loans and overall lower profitability at that time.

Pressure from the International Monetary Fund (IMF) resulted in the Banking Companies Act 1991, which strengthened internal bank management and credit discipline. Following its implementation, the rate of growth of assets of the banking system increased rapidly.<sup>5</sup> The 2<sup>nd</sup> and 3<sup>rd</sup> Generation banks introduced greater account transparency in keeping with the Act, and instituted tighter risk management (Chowdhury and Ahmed, 2009; Islam et al, 2014). In 2012, a total of 30 private commercial banks existed with 7,664 branches. Table 1 outlines the distribution of assets, deposits and branches over the sample period.

**Table 1: Distribution of Assets, Deposits and Branches of Private Commercial Banks**

	Generation 1			Generation 2			Generation 3		
	2001	2012	Increase	2001	2012	Increase	2001	2012	Increase
<b>Asset</b>	234,975	1,502,730	540%	147,932	1,363,798	821%	54,675	1,328,550	2330%
<b>Deposits</b>	190,504	1,260,022	561%	122,714	1,148,772	836%	47,950	1,149,280	2297%
<b>NPL*</b>	12%	3%	-9	5%	3%	-2	0.6%	3%	2.4
<b>Branch</b>	980	1392	412	219	814	595	89	861	772

**Source: Bangladesh Bank Website, 2012 (www.bangladesh-bank.org)**

\*Non performing loans per assets

What Table 1 shows is that asset growth of the generation 2 and 3 banks far outpaced that of the generation 1 banks. The generation 1 banks began with a high Non-Performing Loans (NPLs)

<sup>4</sup> For much of the period following independence, Bangladesh inherited a repressed financial system in which the banks and other financial institutions were used as cheap sources of credit for export generation and import substituting industrialisation. During the period, control of interest rates, selective credit controls, regulations suppressing the development of money and capital markets, and the maintenance of an overvalued domestic currency contributed to financial repression, inefficiencies in investment, and non-repayment of loans by the borrowers (Rahman 2007). Furthermore, the banking system accumulated a large amount of classified loans due to politically motivated loan disbursement to unviable projects and corruption, weak risk management and poor portfolio management (Mujeri and Younus, 2009).

<sup>5</sup> Asset growth of the conventional commercial banks over the full period of this study was around 855%.

per asset rate but by the end of the period had converged on similar rates as the generation 2 and 3 banks. While branch increases by the generation 2 and 3 banks have outstripped the increase in the branch network of generation 1 banks, the latter retains a very large branch network that almost equals the sum of the former two.<sup>6</sup>

## **2.2 Bank Profitability**

A wide range of papers explore the relationship between market structure, competition level, bank efficiency and profitability in the banking industry (Berger, 1995; Bikker and Bos, 2008, Guillén et al., 2014, Tabak et al., 2011). The theoretical basis for these studies is the Structure-Conduct-Performance (SCP) hypothesis. This assumes a direct positive link between market concentration and profitability and a negative correlation between concentration and competition (Bain, 1956). Studies of bank profitability also follow the approach of the Efficient Structure (EFS) hypothesis and the Relative Market Power (RMP) hypothesis (Gilbert, 1984). These hypotheses investigate whether a highly concentrated market causes collusive behaviour among the larger banks, resulting in superior market performance or whether it is the efficiency of larger banks that enhances their performance.

The SCP model is concerned with questions about the trilateral connection which relates the three poles of structure, conduct and performance. The traditional SCP framework suggests that the possibility of collusive behaviour increases when the market is concentrated in the hands of a few firms. The higher the market concentration is, the larger the profitability of the firms in that industry. The assumption is that the degree of concentration exerts a direct influence on the degree of competition among firms where a highly concentrated market will lower the cost of collusion and foster tacit and/or explicit collusion on the part of firms. Because of this collusion, all firms in the market will earn monopoly rents. The SCP hypothesis assumes a causal relationship running from the structure of the market to the price setting behaviour of firms and ultimately to profitability through the market power channel.

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<sup>6</sup> It is also notable that the number of branches of the generation 2 and 3 banks are larger than generation 1 in 2012, dismissing the scale inefficiency argument for the difference in profit-performance.

Demsetz (1973) formulated an alternative explanation and proposed the Efficiency Structure (EFS) Hypothesis. Applied to the banking sector, this hypothesis stipulates that a bank which operates more efficiently than its competitors gains higher profits resulting from lower operational costs and holds an important share of the market. Since more efficient firms are expected to capture a higher market share, one way of distinguishing between the market power and efficient structure hypothesis is to include both market share and concentration in the profitability equation. If concentration becomes insignificant, this goes against the SCP hypothesis and indicates that market share has influence on profitability.

In contrast to the efficient structure hypothesis, the Relative Market Power (RMP) hypothesis argues that banks with a higher market share and well-differentiated products exert more market power and earn higher profits, independently of how concentrated is the market (Shepherd, 1986). It is uniquely the banks a large market share and diversified products who exert their market power to determine prices and make profits. Consequently, under the RMP hypothesis, individual market shares accurately determine market power and market imperfections.

The RMP hypothesis is empirically supported when concentration introduced in the explanatory equations of performance is found to be non-significant in contrast to market share, which should be positively and significantly correlated with price and/or profitability. Nevertheless, it is not obvious that employing market structure in these equations produces unambiguous results. A bank with a strong position in the market may either reinforce its domination over the market or achieve a higher efficiency. The RMP hypothesis posits that the more efficient firms can earn supernormal profits (Lloyd-Williams et. al., 1994).

The empirical evidence for each of these hypotheses is mixed. Many studies find evidence in support of the hypothesis that market concentration enhances banks' profitability. In a review of studies Gilbert (1984) found that 32 out of 44 studies showed supporting evidence for the SCP. Since then numerous studies have confirmed this finding (Bourke, 1989; Molyneux and Thornton, 1992; Lloyd-Williams et. al., 1994).<sup>7</sup> However, contrary findings by Gillini et. al. (1984), Smirlock (1985) and Evanoff and Fontier (1988) found evidence in support of the

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<sup>7</sup> An alternative specification that examines price rather profit, Berger and Hannan (1989) find support for the SCP.



efficient structure hypothesis, while studies of the relative market power hypothesis are unable to distinguish between competing hypotheses (Lloyd-Williams and Molyneux, 1994, and Molyneux and Forbes, 1995). Typically, researchers use external measures of efficiency as an independent variable to distinguish between the RMP and ESF hypotheses.<sup>8</sup>

Studies on bank profitability in Bangladesh reflect the consensus of mixed findings. Samad (2008) tests the SCP and ESF hypotheses and finds support for the ESF model. In contrast Ahamed (2012) using a 3-bank concentration ratio finds strong support for the SCP hypothesis which is supported by Sayeed et al (2012) who use a Herfindahl-Hirschman Index<sup>9</sup> (HHI) measure of concentration.

### **2.3 Ownership Concentration and Impact of Family Dominance on Profitability**

Ownership structure and its influence on firm's performance stems from Agency Theory. This is based on a principal-agent relationship between the owners and the managers where they differ in terms of preferences (Jensen and Meckling, 1976). Berle and Means (1967) argued that diffused shareholders influence their rights through the election of the Board of Directors. The literature on family-dominated firms discusses the potential hazards and benefits from a theoretical perspective (Fama and Jensen, 1983; Demsetz and Lehn 1985; Shleifer and Vishny, 1986) where the empirical evidence is still lacking and is often contradictory, as national corporate governance characteristics differ across countries. Research on U.S. family firms' performance concludes that family firms outperform non-family firms when family members serve as CEO (Anderson and Reeb, 2003). Positive results also have been reported for European countries (Sraer and Thesmar, 2007; Thomsen and Pedersen, 2000; Barontini and Capiro, 2006;

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<sup>8</sup> For example, Scott Frame and Kamerschen (1997) use an econometrically estimated cost function to identify x-efficiency (X-efficiency measures the optimal use of resources by a unit/firm that defines the benchmark for all others) Al-Muharrami and Matthews (2009) employ Data Envelopment Analysis to measure both technical and scale efficiency in their examination of the SCP hypothesis for the Gulf Cooperation Council (GCC) economies.

<sup>9</sup> The Herfindahl-Hirschman Index (HHI) is a common measure of market concentration that is used to determine market competitiveness. It is calculated by squaring the market share of each firm competing in a market and then summing the resulting numbers. It can range from close to zero to 10,000. The closer a market is to a monopoly, the higher the market's concentration (and the lower its competition). If, for example, there were only one firm in an industry, that firm would have 100% market share, and the HHI would equal 10,000, indicating a monopoly. If there were thousands of firms competing, each would have nearly 0% market share, and the HHI would be close to zero, indicating nearly perfect competition (Bourke, 1989).

Andres, 2008) and for Japan (Mehrotra *et al.*, 2013). However, the results from emerging markets are mixed (Khanna and Yafeh, 2007). As suggested by many studies (Bennedsen and Nielsen, 2010; Bertrand and Schoar, 2006; Claessens *et al.*, 2002; Stewart and Hitt, 2012 and Westhead and Cowling, 1997), family-controlled firms in emerging markets often extract more private benefits, although they may be better than non-family firms in identifying valuable investment opportunities.

In contrast, Faccio *et al.* (2001) find that family firms managed by non-family members perform worse than those managed by family members. Miller *et al.* (2007) find that Fortune 1000 firms that are owned by families or employ relatives as managers never exhibit superior performance. Principally, family control may negate or significantly reduce agency problems by reducing the conflict between shareholders and managers, resulting in low information asymmetry and moral hazard issues (Jensen and Meckling, 1976). However, it can be argued that this line of reasoning does not extend to banks. Family domination in banks is different from the family ownership in non-bank firms because of the difference in the leverage of the bank firm relative to the non-bank firm. In the case of the non-bank firm, the family has equity invested in the enterprise and has an incentive to maximize performance and shareholder value. In the case of banks, the family is able to influence loan advances for personal and wider family benefit in excess of the equity invested. The expropriation of bank assets leads to low performance and profitability in the short term.

In the case of Bangladesh, family ownership in the corporate sector is widespread.<sup>10</sup> For example, Sobhan and Werner (2003) note that 73 per cent of non-bank listed companies are family dominated. Muttakin (2012) notes that for the period 2005-2009, 64 per cent of non-bank, non-utility firms in Bangladesh can be classified as family dominated. Family ownership control is also documented by Rashid and Lodh (2008), using data on 94 non-financial firms listed on the Dhaka Stock Exchange from 2000-2009. Rashid (2011) finds support for the predictions of

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<sup>10</sup> Indeed, family-dominated firms is the norm in Asia which raises tensions between the family shareholders and other shareholders (see Gunter Dufey, 'Corporate Governance in Asia – Challenges and Prospects', Presentation to the World Banking & Finance Symposium, Bangkok, 14-14 December 2017)

Agency Theory. Further confirmation of the Agency Theory is reported in Muttakin *et al.* (2014) in their study of 141 listed firms in Bangladesh.<sup>11</sup>

## 2.4 Governance of Banks in Bangladesh

Corporate governance in banks differs because of their unique capital structure of being the custodian of ‘other people’s money’. Banks are highly leveraged institutions where a bank’s profit increases directly with the volume of lending. This also increases the probability of default. As banks’ balance sheets are more opaque than non-financial firms’, information asymmetries are larger with banks.

Many studies address the relationship between ownership and bank performance.<sup>12</sup> Little has been researched, particularly in the emerging economies, on the effects of family-dominated ownership on bank performance. It can be argued that the leverage associated with conventional commercial banks leans towards the expropriation thesis rather than the maximisation of intergenerational wealth. Family-dominated banks are vehicles for the maximization of wealth for the wider family through the provision of “soft” loans (meaning easier loan conditions and interest rates than risk conditions warrant) to itself at the cost of lower shareholder value. In effect, this is a cross-subsidy from one part of the family wealth portfolio to another.

Surifah (2013) finds that banks with family-dominated ownership in Indonesia perform poorly compared with government and foreign-owned banks. Abdul-Rahman and Reja (2015) find only a weak negative relationship between family ownership and profitability. With respect to Bangladesh, there have been no studies that have examined family ownership dominance and bank performance.

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<sup>11</sup> Using the share of the firm owned by the board Al-Farooque *et al.* (2007) find no relationship between ownership and performance but reverse causation. However, while recognizing the family-dominated nature of the board structure they do not explicitly measure family dominance.

<sup>12</sup> See for example Berger *et al* (2005) and Megginson (2005).

Reaz and Arun (2006) focus on the governance practices of banks in Bangladesh. They report the practice of bank fund misuse by large block-share owners, who also can improperly dominate the audit and disclosure practices of the banks. These authors conclude that the major problem of bad governance in Bangladeshi banks is rooted in political and family interference. It is also argued that a lax legal system and low penalties inhibit the process of institutionalization of good governance in Bangladesh (Chowdhury, 2002). Furthermore, minority shareholder protection in Bangladesh is weak due to poorly developed legal and regulatory mechanisms.

Mahbub (2016) surveyed the Bangladesh banking sector and reported on the influence of families on credit provision decisions across generation 1 banks in the form of personal connection through family ties or through business networking. It was evident that in some of these banks more than half of the board members are from one family and that the Managing Director has diminished decision-making power. Senior employees commented that the family owners of generation 1 banks act possessively and undertake questionable financial transactions in the form of securing credit for favoured projects, bypassing the usual credit management process (A list of quotations is provided in Appendix 2).

Directors seek to maximize their own personal benefit and thus take actions that benefit themselves but are detrimental to shareholders (Tricker, 2009). Since regulation prohibits board members from taking loans from their own banks, they frequently channel favourable credit lines to their relatives, extended family members and friends. Qualitative research conducted with board members and managers of a sample of Bangladeshi banks reports that many of the board members are known to each other through family relationships, political connection or business networking where they work as a '*family team*' and maintain a '*symbiotic relationship*'<sup>13</sup> among themselves (Mahbub, 2016).

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<sup>13</sup> A 'symbiotic' relationship exists between the directors of two banks when the director of X bank gives a loan to the directors of Y bank, while the Y bank directors reciprocate, allowing another loan from their bank in favour of the X bank's director or giving a percentage of the loan obtained from the X bank.

### 3. Data and Methodology

The data set covers 34 banks of three generations. These account for more than 90% of the total bank assets at the end of 2012 (Bangladesh Bank Website, 2013). The sample is a balanced panel of 30 private commercial banks and 4 state-owned commercial banks from 2001-2012 or 408 bank years of data, comprising a complete set of three generations.

The sample deliberately excludes generation 4 private commercial banks post-2012. The time-frame of the analysis is motivated by the availability and continuity of information. Additionally, the Bangladeshi banking system was resilient during the global financial crisis of 2007-2008, the banks withstanding the effects of the crisis relatively well (Kamarudin et al, 2016).

The present study is based on secondary data. The source of bank-specific financial data is *Bankscope* International Bank Database<sup>14</sup> produced by the Bureau van Dijk. This provides banks' balance sheets and income statements. Some missing data were obtained from the balance sheets and income statements of annual reports<sup>15</sup> and websites. All the accounting information is consolidated on December of each year.

As a measure of profitability, both return on assets (ROA) and return on equity (ROE) have been widely used as a dependent variable.<sup>16</sup> In the case of Bangladesh, the incidence of negative profits and negative equity for a number of banks made ROE unreliable and thus we concentrate on ROA. The independent variables used in estimation are separated into bank-specific and industry-specific variables. All the variables are defined in Table 2 below. This also presents a snapshot of their descriptive statistics. As a novel feature, one of the variables, X-efficiency

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<sup>14</sup> BankScope is the main source which provides data for a large number of banks in many countries of the world in the form of balance sheets, income statements, various ratios and ownership information.

<sup>15</sup> While annual reports published by various banks served as a complementary source of data, limitations exist with regard to accessibility of these reports and adequacies of the range of information, depending on the operative patterns and practices of various banks.

<sup>16</sup> See Grier and Smallwood (2007), Goddard et al. (2004) etc.

(EFF), is estimated using a bootstrap method in Data Envelopment Analysis with operational costs and fixed assets as inputs and net interest revenue and non-interest revenue as outputs.<sup>17</sup>

**Table 2: Data Definition and Summary Statistics 2001-2012**

Measures	Definitions	Notation	Mean	SD	Min	Max	
Profitability	Net profit (Before Tax)/ Total Asset %	ROA	0.9434	2.363	-21.97	6.06	
<b>Bank Specific</b>	Credit Risk	Net NPL / Total Loans	NPLRAT	0.1024	0.2589	0	4.273
	Capital Adequacy	Equity /Total Assets	EQTA	0.0587	0.0869	-0.7721	0.6887
	X- Efficiency	Technical Revenue Efficiency	EFF	0.8415	0.1807	0.1145	1
	Management costs	Operational expenses/ Assets	OHEFRAT	0.0228	0.0124	0	0.1852
	Family-board	Gen 1 Banks = 1, others = 0	GEN1	0.3236	0.4684	0	1
<b>Industry Related</b>	SOCB	Government Banks denoted as 1 while others 0	OWNRSP	0.1176	0.3226	0	1
	Concentration	Concentration Ratio of 5 Banks (The assets of the 5 largest banks defined by asset size divided by the total assets of all banks in any given year)	CR5	48.05	6.658	37.21	57.98
	Market Share	The share of an individual bank's assets out of all banks in any given year.	MS	0.0294	0.0361	0	0.2445

At the outset we identify differences in the raw measures of performance between Generation 1 banks and the rest in the sample. Table 3 shows the mean values of the measures of performance of banks in the sample (ROA, NPL ratio, cost-income ratio (CIRATIO), and Technical Efficiency (EFF) the latter obtained from the bootstrap Data Envelopment Analysis), separated by generation 1 and the rest, and including a Mann-Whitney test for differences in the separation.

**Table 3: Performance Indicators: Two sample Mann-Whitney test**

	ROA%	NPLRAT%	CIRATIO%	EFF
Mean Total	0.943	10.2	53.0	0.842
Mean GEN 1	0.563	14.3	70.1	0.745
Mean Rest of sample	1.125	8.3	44.7	0.888
Z statistic	5.16***	-9.28***	-7.81***	7.99***

\*\*\* Significant at the 1%-level

<sup>17</sup> X-efficiency measures the optimal use of resources by a unit/firm that defines the benchmark for all other units/firms operating in the same space. For a full explanation of the use of Data Envelopment Analysis to construct this measure see Sherman and Gold (1985).

It is clear from Table 3 that significant differences exist between the pool of generation 1 banks and the rest of the banking population in terms of profitability, NPLs, cost and efficiency and technical efficiency. The mean ROA for generation 1 banks is significantly lower than it is for the rest of the sample, as is the measure of efficiency. Similarly, the NPL ratio and cost-income ratio are significantly higher for the generation 1 banks than for the rest of the sample. This alone provides a *prima facie* case of difference in performance between the generation 1 banks and the rest that warrants deeper investigation.

#### 4. Empirical Results

The empirical model on the determinants of banks' profitability is measured based on the return on assets (ROA) on balanced panel data where all the variables are observed for each cross-section and each time period. In this study, for determining factors of bank profitability, bank-specific variables and industry-specific variables are estimated. The general model that follows the framework of Smirlock (1985), Scott-Frame and Kamerschen (1997) and others is shown in equation 1 which is extended below by including bank-specific variables -

$$\pi_{i,t} = \alpha_0 + \alpha_1 CR5 + \alpha_2 MS_{i,t} + \alpha_3 EFF_{i,t} + \sum_{j=1}^m \beta_{j,t-p} X_{j,i,t-p} + \sum_{k=1}^n \gamma_{k,t-p} GEN1 * X_{k,i,t-p} + u_{i,t} \quad (1)$$

Equation (1) is a reduced form specification and differs from Smirlock (1985) and Scott-Frame and Kamerschen (1997) only in the choice of bank-specific variables, identified in Table 3. Here,  $i=1..34$  banks,  $j$  is the number of bank-specific variables,  $k$  is the subset of bank-specific variables that differ between generation 1 and the rest, and  $t$  is time 2002-2012. We allow for the effect of lags of order ' $p$ ' in the bank-specific variables. The specific function identifies the separate impact of generation 1 banks through the interaction terms  $GEN1 * X_{k,i,t-p}$ . Where  $\pi_{i,t}$  represents ROA of bank  $i$  in year  $t$ , the first three independent variables are as in Table 2 above,  $X_{j,i,t}$  are the  $j$  bank variables, GEN1 represents the dummy variable that identifies the generation 1 (family dominated boards) and  $X_{k,i,t}$  are a subset of the bank-specific variables.

If the traditional SCP hypothesis holds  $\alpha_1 > 0$  and  $\alpha_2 = 0$ . If the ESF model holds  $\alpha_1 = 0$  and  $\alpha_2 > 0$ . If the RMP hypothesis holds independently of  $MS_{i,t}$  then  $\alpha_3 > 0$ . If generation 1 banks differ from Generation 2 & 3 in terms of higher NPLs and higher operational costs, then the sum of the coefficients associated with the interactive variables  $GEN1 * X_{k,i,t-p}$  will be negative. More precisely;

$$\text{Hypothesis: } \sum_{k=1}^n \gamma_{k,t-p} < 0$$

Table 4 presents our results.

**Table 4: Panel estimation; Dependent variable ROA; ‘p’ values in parenthesis**

Variable	Equation 1	Equation 2	Equation 3
NPLRAT	-1.422 (0.001)***	-0.833 (0.006)***	-0.823 (0.005)***
NPLRAT(-1)	0.507 (0.131)	1.06 (0.001)***	1.157 (0.000)***
EQTA	14.88 (0.000)***	14.04 (0.000)***	13.56 (0.000)***
CR5	0.011 (0.073)*	-.004 (0.669)**	0.029 (0.021)**
MS	-2.18 (0.305)	-1.73 (0.766)	-3.08 (0.580)
EFF	0.963 (0.580)	.334 (0.487)	0.963 (0.065)*
OHEFRAT	-61.11 (0.000)***	-70.46 (0.000)***	-71.41 (0.000)***
OHEFRAT(-1)	53.38 (0.000)***	68.57 (0.000)***	69.82 (0.000)***
GEN1*NPLRAT	-5.91 (0.001)***	-8.95 (0.000)***	-7.553 (0.000)***
GEN1*NPLRAT(-1)	3.08 (0.062)*	4.71 (0.002)***	3.79 (0.014)**
GEN1*OHEFRAT	-12.19(0.351)	-59.94 (0.000)***	-79.32 (0.000)***
GEN1*OHEFRAT(-1)	18.07 (0.165)	-76.28 (0.000)***	-36.021 (0.001)***
Bank Fixed Effects	No	Yes	Yes
Year Fixed Effects	No	No	Yes
No of Observations	372	372	372
Fitness	Chi(12) = 526***	F(12,326) = 75.23***	F(21,317) = 49.04***
Test for Fixed Effects	-	F(33,326) = 4.98***	F(33,317) = 5.40***
Chow test Break=2008	F(12,348) = 4.20**	F(44,284) = 3.22**	F(12,348) = 0.714
Chow test Break = 2007	F(12,348) = 5.24**	F(44,284) = 2.25**	F(12,348) = 0.99

\*\*\* Significant at the 1%-level; \*\* Significant at the 5%-level; \* Significant at the 10%-level

The second column shows the results from pooled estimation, the third from one-way fixed effects (bank fixed effects) and the fourth column from two-way fixed effects (bank and year fixed effects). The final row of the third and fourth columns shows the F test for the deletion of the bank fixed effects which rejects its removal.



A Chow test for a structural break at either 2008 or 2007 coinciding with the Global Financial Crisis shows that the pooled or one-way fixed effects model, is not stable over the full sample period. This can give rise to invalid inference and inconsistent estimates of the parameters. A full treatment of multiple structural breaks in the model is beyond the scope of this paper<sup>18</sup>, however the year dummies absorb all the potential structural changes over time so the results of column 4 reject any specific structural break associated with Global Financial Crisis. The results of equation 3 show that main results are maintained.

A variant of the Chow test using slope dummies for break points in 2008 and 2007 show that the model with time dummies is stable. This is because the time dummies absorb all the time-variant heterogeneity in the model including the GFC. It can be seen from column 4 that while the quantitative values of the parameters change from column 3, the qualitative story remains the same for the main variables of interest. The net effect of the interaction variables with GEN1 is negative even with time dummies.

Therefore, concentrating on the two-way fixed effects results (equation 3), we cannot reject the traditional SCP hypothesis. The concentration CR5 variable exerts a positive effect on profitability, the MS variable is statistically insignificant, but the efficiency variable EFF is only significant at the 10%-level.<sup>19</sup> Thus, in keeping with Ahamed (2012) we find some support for the SCP hypothesis for Bangladesh banks. In contrast to Samad (2008), we find no support for the ESF hypothesis. The efficiency variable is positive but not statistically significant which means that our results do not provide any strong evidence that can distinguish between the ESF and the RMP hypothesis.

Along with Athanasoglu et al (2008) for the Greek banking system, we find that the capital exerts a positive effect on profits. A higher equity-asset ratio can follow up more profitable

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<sup>18</sup> See Baltagi et al (2016)

<sup>19</sup> Similar results are obtained if the CR5 variable is substituted for a measure of concentration based on a Herfindahl Hirschman Index for bank assets.

business opportunities with a fatter capital belt to absorb potential losses. Operating expenses measured by the ratio of operating expenses to assets has the expected negative effect on profitability and as expected the NPL ratio has a negative effect on profits.

Importantly for our main argument, the sum of the current and lagged interactive terms (GEN1\*NPLRAT and GEN1\*OHEFRAT) shows a negative effect on profitability confirming the main hypothesis that allowing for all other factors the generation 1 banks perform poorly against the other commercial banks. The two specific variables identify the source of the difference in performance. Family dominated boards have higher NPLs and higher overhead costs than other banks.<sup>20</sup>

Table 5 presents some additional results as tests for robustness. Here we re-parameterise the specification to recognise the dynamics in the specification of the base-case and include interaction terms with the ownership dummy which distinguishes private from state-owned banks. We also include the change in the equity ratio (EQTA) and its lag along with interactions with government ownership and the NPL ratio and the overheads ratio. Our main results are unchanged. Basically, the interaction terms with the generation 1 bank dummy and the NPL ratio and overheads ratio exert on balance an overall negative effect, confirming the hypothesis that generation 1 banks underperform other banks by having higher NPLs and higher costs.

**Table 5: Tests for Robustness; Dependent Variable ROA; ‘p’ Values in Parenthesis**

Variable	Equation 1	Equation 2	Equation 3
$\Delta$ NPLRAT	-0.862 (0.000)***	-0.862 (0.000)***	-0.868 (0.000)***
$\Delta$ EQTA	17.15 (0.000)***	17.20 (0.000)***	16.81 (0.000)***
EQTA(-1)	9.58 (0.000)***	9.60 (0.000)***	9.42 (0.000)***
CR5	0.031 (0.010)***	0.031 (0.009)***	.032 (0.006)***
MS	-5.96 (0.268)	- 6.99(0.196)	-5.44 (0.307)
EFF	0.994 (0.045)**	1.01 (0.041)**	1.086 (0.027)**

<sup>20</sup> It should be noted that the use of time dummies makes it difficult to directly test for a structural break for the Global Financial Crisis (2007-2008), but the significance at the 5% of some of the years (not shown) indicates intercept shifts in time.

$\Delta$ OHEFRAT	-62.39 (0.000)***	-62.35 (0.000)***	-62.43 (0.000)***
GEN1*NPLRAT	-8.49 (0.000)***	-7.79 (0.000)***	-7.36 (0.001)***
GEN1*NPLRAT(-1)	3.81 (0.012)**	2.65 (0.000)***	3.21 (0.034)**
GEN1*OHEFRAT	-81.42 (0.000)***	-81.68 (0.000)***	-15.85 (0.525)
GEN1*OHEFRAT(-1)	-34.27 (0.000)***	-35.83 (0.000)***	-36.91 (0.000)***
OWNRSP*NPLRAT	0.672 (0.785)		0.332 (0.891)
OWNRSP*NPLRAT(-1)	-	2.306 (0.298)	-
OWNRSP*OHEFRAT	-	-	-74.09 (0.005)***
Bank Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
No of Observation	372	372	372
Fitness test	F(21,317) = 56.67***	F(21,317) = 56.90***	F(22,316) = 55.65***

\*\*\* Significant at the 1%-level;

\*\* Significant at the 5%-level;

\* Significant at the 10%-level

A valid criticism of our results is that a binary variable to identify family-dominated banks may capture other aspects of generation 1 banks that are not related to family influence on board decisions. A simple but imperfect measure of family dominance on the board of Directors would be to identify the proportion of board members that belong to a single family or a cluster of families<sup>21</sup>. There are two problems with this measure. First, family influence may be greater than just the number of individuals (or proportion) on the board. A family member who is a strong Chairman of the board can create an atmosphere of ‘groupthink’ (Turner and Pratkanis, 1998). Second, on a practical matter, data on the composition of the board is not always provided consistently in the Annual Statements of the Banks, which is the basis of the data collected in this study.

However, for the years where the data is available we can identify the family members of a single unit or a cluster of 2-3 units. With generation 1 banks the available bank-years of data that provide information on family membership is 61 out of a maximum of 78. With generation 2 and 3 banks, the available data was for 135 bank-years out of a maximum of 168. This is an unbalanced panel that can raise issues of inference in panel estimation if the missing cells are not randomly distributed (see Wooldridge, 2009). However, while this is an incomplete set of data there are sufficient observations to evaluate the differences in board composition of the three generations of banks in terms of proportion of the board made up of family members. We conduct a Wilcoxon rank-sum test to verify if the generation 1 banks’ proportion of family

<sup>21</sup> It can be argued that while family identity is distinct, in Bangladesh family clusters (more than one family on the board) will work as a single unit in recognition of the common objective of providing soft loans to each other’s business interests.

members on the board is from the same population as generation 2 & 3. Table 6 provides some statistics.

**Table 6: Family Board Composition: Two-sample Wilcoxon rank-sum test**

Bank	Valid Observations	% of maximum number of observations	Mean number of families on Board per bank-year	Mean % family on Board per bank-year
Generation 1	61	78%	5.5	37.5%
Generation 2 & 3	135	80%	0.8	4.3%
Z- statistic	-	-	-	-9.53***

\*\*\* Significant at the 1%-level

It is clear that the null of common family board composition is decisively rejected. We suggest that our use of the binary variable GEN1 to identify family-dominated banks in this study is valid in the light of the result shown in Table 6.

## 5. Conclusion

This paper has examined the performance of family-dominated ownership of banks in Bangladesh within the context of the SCP-ESF-RMP models of bank profitability. The results are tantalising in that there would appear to be evidence of under-performance by family-dominated banks in terms of profitability. Therefore, for banking firms, family ownership does not lead to enhanced performance in the case of Bangladesh. This study has also shed light on the conventional SCP-ESF-RMP hypotheses of bank profitability. In keeping with previous studies, the results provide some support for the SCP model and weak support for the RMP model, suggesting a more complex market structure performance relationship in the Bangladeshi banking industry.

The results show that the under-performance of generation 1 banks is consistent with the argument that family-dominated banks influence lending to maximise the welfare of the family group – hence the higher NPL history – for which we have some limited evidence from interviews. Also, family-dominated banks may encourage managerial ‘feather bedding’ by tolerating higher operational costs per asset. However, these suggestions are also consistent with the view that after privatization there was a learning period culminating in many mistakes,

resulting in an overhang of NPLs for generation 1 banks that generation 2 and 3 banks were able to avoid.

The higher costs of the generation 1 banks could also be due to the wider branch network they inherited on privatization, which they have further increased. They may have inherited a heavy load of NPLs at the time of their inception, but these would have long been written-off before our data period. The difference between the NPL ratio with the other banks for the sample period examined will be new NPLs. Clearly, further research needs to be undertaken to isolate the family influence on the corporate governance of generation 1 banks.

Survey evidence (Mahbub 2016) suggests that family dominance on the Board has been used to override the credit committee and the process of due diligence to the detriment of bank performance. The results of this study are consistent with this view. Until deeper research is conducted, the results presented in this paper remain a significant finding which deserves further investigation and explanation.

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## Appendix - 1: Names of the Scheduled Banks

<b>Scheduled Banks Operating in Bangladesh - 2012</b>	
<b>A. State Owned Commercial Banks (SOCBs)</b>	
	1. Agrani Bank Limited.
	2. Janata Bank Limited.
	3. Rupali Bank Limited.
	4. Sonali Bank Limited.

<b>B. Specialized Bank(SDBs) / Development Financial Institutions (DFIs)</b>	
1. Bangladesh Krishi Bank Ltd. 2. Rajshahi Krishi Unnayan Bank Ltd. 3. Bank of Small Industries and Commerce Bangladesh Ltd. 4. Bangladesh Development Bank Ltd.	
<b>C. Private Commercial Banks (PCBs)</b>	
<b><i>i) 1<sup>st</sup> Generation Conventional PCBs</i></b>	<b><i>i) 1<sup>st</sup> Generation Islamic Shariah based PCBs</i></b>
1. AB Bank Ltd. 2. National Bank Ltd. 3. The City Bank Ltd. 4. United Commercial Bank Ltd. 5. Pubali Bank Ltd. 6. Uttara Bank Ltd.	1. Islami Bank Bangladesh Ltd. 2. ICB Islamic Bank Ltd.
<b><i>ii) 2<sup>nd</sup> Generation Conventional PCBs</i></b>	<b><i>ii) 2<sup>nd</sup> Generation Islami Shariah based PCBs</i></b>
1. IFIC Bank Ltd. 2. Eastern Bank Ltd. 3. NCC Bank Ltd. 4. Prime Bank Ltd. 5. Dhaka Bank Ltd. 6. Dutch Bangla Bank Ltd. 7. Bangladesh Commerce Bank Ltd. 8. Southeast Bank Ltd.	1. Al-Arafah Islami Bank Ltd. 2. Social Islami Bank Ltd.
<b><i>iii) 3<sup>rd</sup> Generation Conventional PCBs</i></b>	<b><i>iii) 3<sup>rd</sup> Generation Islami Shariah based PCBs</i></b>
1. Mercantile Bank Ltd. 2. Standard Bank Ltd. 3. One Bank Ltd. 4. Mutual Trust Bank Ltd. 5. Premier Bank Ltd. 6. Bank Asia Ltd. 7. Trust Bank Ltd. 8. Jamuna Bank Ltd. 9. BRAC Bank Ltd.	1. EXIM Bank Ltd. 2. First Security Islami Bank Ltd. 3. Shahajalal Islami Bank Ltd.
<b>D) Foreign Commercial Banks (FCBs)</b>	
1. Standard Chartered Bank Ltd. 2. State Bank of India 3. Habib Bank Ltd. 4. Citi Bank, N.A. 5. Commercial Bank of Ceylon Ltd. 6. National Bank of Pakistan 7. Woori Bank Ltd. 8. The Hong Kong & Shanghai Banking Corporation Ltd. 9. Bank Al-Falah Ltd.	
<b>Source: Bangladesh Bank Website, 2012 (www.bangladesh-bank.org)</b>	

## Appendix - 2: Quotations from Interviews

Generation	Position	Quotations Taken from Mahbub (2016)	Page no.
Generation 1	Managing Director	"... more than half of the board members are from his family... got connection with most of the politicians... top	P. 237

		officials of the BB salute them due to power... considering these, fighting for the right of depositors and shareholder is mere stupidity... ... they will retain me as long as I play with their tunes and will kick me off in the next minute if I act differently... ethics, honesty, dedication - are just dictionary words to them...”	
Generation 1	Head of Credit	“Sometimes, I feel that we are like monkeys ... get the instruction from above and act upon that ... no site visiting, no evaluation of proposal, not checking the compliance issues, do not worry about collaterals given or not... just follow the order and send the memo to the board quickly”	P. 208
Generation 1	Head of Credit	“...all rules and regulations are applicable to general people but not applicable to the villagers’ of the BoDs or directors’ relatives or the ones who they want...”	P. 218
Generation 2	Head of Credit	“... Board members of 1 <sup>st</sup> Gen PCBs have the sentiment of possessiveness and the feeling of inheritance ... all most all NPL are resulted from their favoured decisions against the risk warning by the Credit Division ... however, this tendency is least apparent in 2 <sup>nd</sup> and 3 <sup>rd</sup> Gen PCBs as the BoDs are business conglomerates from different backgrounds...”	P. 236
Generation 2	Managing Director	“...they entered into a new system of competition with traditional experiences which are not dynamic and somehow manual in nature... making the organization less productive... in the era of computers you can’t work completely relying on calculators...”	P. 239
<b>Source: Mahbub (2016)</b>			