THE IMPACT OF STATE OWNERSHIP AND POLITICAL OWNERSHIP ON PERFORMANCE AND EFFICIENCY OF BANKS- EVIDENCE FROM BANGLADESH

By

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Abstract

The political ownership in domestically owned commercial banks (DOCBs) in many countries like Bangladesh offers a scope for studying the relationship between political ownership and performance and efficiency of banks. Using stochastic frontier approach, this paper attempts to investigate the impact of political ownership of Bangladeshi DOCBs on their cost inefficiency and profit inefficiency. The findings show that political ownership worsens cost inefficiency significantly not only of overall banking sector but also of DOCBs. However, the evidence of deterioration of profit inefficiency due to political ownership is not clear for both overall banking sector and DOCBs.

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INTRODUCTION

Banking efficiency literature extensively addressed the effects of state ownership on banks' performance (Cornett et al, 2009; Boycko et al. 1996 etc.) and the impact of political influence over state owned banks (Dinç 2005; Kane, 2000, Khwaja and Mian, 2005; Sapienza, 1999 & 2004, etc.). Many studies also paid attention to the impact of foreign ownership on banks' efficiency (Hasan and Marton, 2003; Williams and Nguyen, 2005; Megginson, 2005 etc.). Unfortunately, no study looked on the influence of political ownership on the performance on domestically owned commercial banks (DOCBs). The political ownership in DOCBs in many countries offers a scope for studying the relationship between political ownership, and performance and efficiency of banks. In Bangladesh, like many other countries, members of parliament and other politicians and their family members and relatives have significant stakes in DOCBs which might affect the performance of these banks. Perhaps the changing nature of ownership in publicly traded banking companies and the unavailability of data regarding political affiliation of shareholders pose challenge in sustained study in this field. This paper, therefore, is one of the first attempts to investigate the impact of political ownership of DOCBs on their performance and efficiency, especially in Bangladesh.

This paper studies the effects of political ownership on cost inefficiency and profit inefficiency of banking sector of Bangladesh and in particular the impact on domestically owned commercial banks. I define political person as some who is a politician or has a close with politicians like spouse, siblings, son or daughter of politicians. Other than political ownership, this thesis also incorporates several banking variables (e.g. liquid assets, financial investment, short term loans, equity etc.) to capture the precise effects of political ownership. In order to determine the percentage of political ownership in DOCBs, one needs to know the

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political identity of shareholders and number of shares held by them- the unavailability of data and limited time do not permit to make a comprehensive list of political ownership. In this context, to get a rough estimation of political ownership, at first, data relating to number of shares held by directors and other top shareholders who own more than 0.5% was collected from Accounts Division of Dhaka Stock Exchange (DSE). Later, parliamentary and city corporation elections data from 1970 to 2012 was collected from website of Bangladesh Election Commission. Finally, I matched the list of large shareholders of a bank with their political identity.

Most of the papers on efficiency of banking sector of Bangladesh emphasized on performance of individual banks (Yasmeen, 2011; Samad 2009). Hence, one cannot know the efficiency levels of SOCBs, DOCBs and FOCBs which are crucial for policy purposes. Uddin and Suzuki (2011) is one of the first attempts to perform sectoral analysis of the banking sector of Bangladesh while using Data Envelopment Analysis. In the context of Bangladesh, this thesis is the one of the first endeavors to use stochastic frontier approach in measuring cost inefficiency and profit inefficiency of overall banking sector and, in particular, domestically owned commercial banks. The findings show that political ownership worsens cost inefficiency significantly not only of overall banking sector but also of DOCBs. However, the evidence of deterioration of profit inefficiency due to political ownership is not clear for both overall banking sector and DOCBs.

The rest of the thesis has structured as follows. The first chapter gives an overview of banking sector of Bangladesh with the context of political influence on banking industry. The second chapter discusses the relevant literatures relating to state ownership in banking and political influence over DOCBs. The next chapter discusses the data and methodology. Fourth chapter presents the descriptive statistics and chapter five describes the estimation results. Finally, conclusions are summarized and policy recommendations are made.

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CHAPTER ONE: CRITICAL OVERVIEW OF BANKING PRACTICES IN BANGLADESH

In this chapter at first I attempt to compare the relative size of state owned commercial banks (SOCBs) and domestically owned commercial banks (DOCBs). Secondly, I try to depict the performance of banking sector over last three decades. Thirdly, I argue that state ownership and political ownership are the main causes of poor performance of SOCBs and DOCBs.

After the independence of Bangladesh of Bangladesh in 1971, all banks were nationalized and merged into 6 SOCBs. After 1982, two of them were denationalized in 1985 and DOCBs were allowed to operate. Till now 47 banks are operating in Bangladesh. Of them 4 are SOCBs, 4 are specialized commercial banks (SPCBs), 30 are DOCBs and 9 are foreign owned commercial banks (FOCBs).

All the SOCBs are characterized by large size and inefficiency in collecting deposits and disbursement of loans. From table 1, we observe that even though out of 47 banks only 4 are SOCBs, they are gigantic in terms of assets and branches. In 2011, SOCBs comprised 31.11% of total asset and collected 27.09% of total deposit compared to 61.59% of DOCBs. Moreover, SOCBs disbursed only 21.81% of total loans compared to 65.70% by DOCBs.

Table 1: Banking sector of Bangladesh[1]

Bank Types	No. of banks	No. of branches	Total Assets	% of industry assets	Deposits	Percentage of industry deposits	Loans and Advances	% of industry loans and advances
SOCBs	4	3437	1030.90	31.11	4506.51	27.09	2855.00	21.81
DOCBs	30	3055	1794.50	54.16	10245.76	61.59	8601.33	65.70
FOCBs	9	63	265.80	8.02	1068.13	6.42	750.22	5.73
SPCBs	4	1406	222.30	6.71	814.70	4.90	885.52	6.76
Total	47	7961	3313.50	100.00	16635.09	100.00	13092.08	100.00

Source: Schedules Banks' Statistics, 2011

[1] All the monetary figures are in billion taka. At present 80 taka is equivalent to 1 US dollar.

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Since inception, banking sector of Bangladesh has been characterized by high default loans and poor governance. Even though 7 DOCBs and 5 FOCBs initiated operation along with 6 SOCBs after 1982,the first decade of banking liberation (1982- 1991) was marked by high level of inefficiency in terms of profitability, cost and quality of loans. The second decade 1992-2000, which was marked by the inception of third generation banks, was also marked by low profitability, high default loans and poor governance (BEI, 2003). The Bangladesh Bank Annual report (2008) shows that capital adequacy ratio of SOCBs, DOCBs and FOCBs was 6.9%, 11.4% and 24% respectively in 2008. The ratio of classified loans to total loans decreased to 10.8% in 2008 from 41.1% in 1999 although this ratio remained high for SOCBs as 20% in 2008. Hence, quality of loans remains a big concern for SOCBs.

Politically directed loans seem to be the major cause of bad quality loans of state owned commercial banks. In 2012, it was discovered that Sonali bank, the largest SOCB, disbursed 38320 Million taka (68.27 % of its equity and 11.01% of its total loan) in 2011 to a less known small company "Hall Mark" without maintaining proper procedure. Later investigation found that loans were disbursed at the direction of one advisor of prime minister; and collateral values against the loan were at best 20% of loan disbursed to that company. However, the finance minister vowed that defaulting 11.01% of its total loan is a petty amount and blamed media for publishing such report: *"It is a matter of Tk 3,000 or 4,000 crore. Nonsense! But you [the media] are harming the banking sector by publicizing it."(the daily star,Sep5,2012)*[2] This shows the political support for bank looting in a wholesale scale. Debapriya Bhattacharya, distinguished fellow of the Centre for Policy Dialogue, rightly lamented over finance minister's comment: *"It is not only about the quantity of money which has been embezzled. It is more about the way it has been done. It is not the quantity but the process, which has violated all prudential regulations of the banking sector*." (the daily star, September 5,2012).

[2] 1 crore taka is equivalent to 10 million taka. At present 80 taka is equivalent to 1USD.

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Lack of power of Bangladesh Bank, the central bank of Bangladesh, over the SOCBs is another reason of mismanagement in SOCBS. The supervision teams of the central bank detected the Hall Mark scandal earlier and requested the finance ministry to take action in this manner; however, being politically docile the finance ministry did not take any action. Within one week of media hype over the scandal, the central bank officially requested the finance ministry to restructure the board of Sonali Bank, which is full of politicians rather than professionals. Rather than punishing the responsible directors and officials of Sonali Bank, within 10 days of the scandal becoming the news, the finance ministry rewarded all directors with two-year extensions (the daily star, Sep 6,2012). As per sections 45, 46 and 47 of Banking Companies Act 1991, the central bank has full control over DOCBS and FOCBs; however, it has no power to remove board members of SOCBs (Banking Companies Act 1991). This shortcoming in the legislature has created an immense opportunity to misuse political power over SOCBs.

Political ownership in domestically owned commercial banks is the main cause of poor corporate governance in the banking sector of Bangladesh which further affects the efficiency of the respective banks. Reaz and Arun (2005) mentions that politically influential owners are interested in tunneling money through loan disbursement to their related industry rather than making profit through efficient operation of banks. In 2012, 6 new banks got permission which are not in operation yet. Out of these 6 commercial banks all politically permitted: one bank to the current home minister, one bank to the chief of the coalition party of the current government who was also previous autocratic military president, one to the deputy law minister, one to an MP of the current government, and 2 other banks to senior party members of the current government party (the daily star, April 9,2012).

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This thesis is the first study to reveal the political ownership in commercial banks of Bangladesh. It reveals that as on December 31, 2011, political persons have 0.01% to 20%, 20.01% to 40% and 40.01% to 60% ownership in 5, 11, and 7 DOCBs respectively. Moreover, all but one bank have at least one politician in the board. Political ownership changes over time and mostly by issuing new shares rather than selling shares by political owners which implies that the high risk of the mismatch of control right and cash flow right. This mismatch creates an opportunity for tunneling which may affect the performance and efficiency of these DOCBs.

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CHAPTER TWO: LITERATURE REVIEW

Ownership structure, a key component of corporate governance, affects the performance of an organization. Macey and O' Hara (2003) argues that ownership structure is more critical in case of banking sector because the nature of commercial banks creates distinctive corporate governance complexities for employees, central banks, shareholders and depositors. Moral hazard is high for a bank near insolvency since equity comprises very low portion of total liabilities and equity of a bank. The same study further argues that the high debt to equity ratio and the existence of deposit insurance create a conflict of interest between depositors and shareholders because any risky venture will transfer wealth from the depositors to the shareholders. Hence, it implies that the nature of ownership (state, private domestic, foreign) is crucial for efficiency and performance of banks because extreme mismatch between control right and cash flow right can result in tunneling of resources.

State ownership in commercial banks creates conflict of interest problem for government. Radon and Thaler (2005) argues that such problem originates from the state's double role: the role as a profit minded owner and manager and the role as a regulator of firms to safeguard citizens' interest. It implies that in case of banking, independent central bank can mitigate such conflict to some extent. However, considering the influence of government over central bank in many countries especially in developing countries, government cannot get rid of conflict of interest problem. For example, in case of Bangladesh, as per sections 45, 46 and 47 of Banking Companies Act 1991, Bangladesh Bank, the Central bank of Bangladesh, has full control over DOCBS and FOCBs but the ministry of finance is in the position to make ultimate decision about SOCBs (Banking Companies Act 1991).

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State owned commercial banks perform inferior to their counterparts because of the vicious incentives of managers/ bureaucrats of state-owned banks. Like other state owned firms, SOCBs are controlled by political bureaucrats, who have high control right with no cash flow right; hence, they have incentive to maximize personal interest by tunneling the resources rather than maximizing the value of the banks for cash flow right holders, citizens of the country (Shleifer and Vishny, 1997; Dyck and Zingales, 2004). Further, political bureaucrats maximize their personal interest by supporting political interest which is in conflict with social welfare improvements and firm value maximization (Shleifer and Vishny, 1997). Hence, it is not surprising that like state owned firms SOCBs perform inferior to their counterparts (i.e. DOCBs and FOCBs). For example, using data of 1989 to 2004 from many countries, Cornett et al (2009) finds that SOCBs performs significantly lower than DOCBs in the countries where politicians have extensive control over the management of SOCBs.

One of the main reasons of poor performance of SOCBs is the political influence over loan disbursement. Kane (2000) argues that politicians attempt to earn rent by directing cheap loans to their interested groups. This argument infers that subsidized loans seem to be higher for SOCBs than DOCBs since politicians have direct and more influence on management of state owned banks. Furthermore, government also allocates loans for getting votes regardless of economic efficiency justification (Kornai 1979, Shleifer and Vishny,1994). For example, Sapienza (1999 & 2004) finds that Italian state-owned banks charge lower interest rates to business group which has strong political involvement with government. Moreover, Dinç (2005) finds that SOCBs boost their loan disbursement in election years compared to DOCBs in many emerging countries in the 1990s solely due to political pressure.

Disbursement of loans based on political interest increases the classified loan rate of and thus hampers cost efficiency and profit efficiency. Khwaja and Mian (2005) mentions that in Pakistan politician represented companies get bigger loans from state owned

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commercial banks and these loans tend to have higher default rates. Further, SOCBs have tendency to disburse significant portion of loans to comparatively limited number of clients, who have strong political connection, which further increases the chance of default loans. For example, Sonali Bank, the largest SOCB in Bangladesh disbursed more than 10% of its equity as loan to a single client (Sonali Bank Annual Report 2011, p. 42). This paper finds that on an average an SOCB offer 10% of its equity as loan to 25 clients; however this number is 9 in financial year 2011. These numbers are 24 and 19 for DOCBs and FOCBs respectively in 2011(Table A1). From the same table, it is observable that over the 8 years (2004 to 2011) the average classified loan rate is 20.27 %, 3.95 % and 0.98% for SOCBs, DOCBs and FOCBs operating in Bangladesh. Rayhan et al (2011) also argues that state owned commercial banks in Bangladesh fails to achieve a stable growth because of their high percentage of classified loan. Hence, it implies that state owned commercial banks have negative impact on financial system of a country.

State ownership of bank deteriorates not only development of financial system but also economic growth of the country. Beck et al. (2000) argues that initial financial development influences subsequent efficient capital accumulation and capital accumulation positively affect economic growth of a country. Therefore, the claim of La Porta et al (2000) that SOCBs hinder the development of the financial system and thus, economic growth of a country is a plausible one. Sapienza (2004) argues that one of the reasons of economic slowdown is because significant part of SOCBs goes to businesses located in depressed area. Therefore, state owned commercial banks slow down productivity and thus economic growth mainly due to misallocation of resources in less productive use.

Privately owned banks perform better because managerial compensation is highly linked with employee performance and performance of banks which is unusual in state owned banks. It is assumed that managerial agency problems are usually less severe

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compared to political agency problem (Boycko et al. 1996). Hence, private banks are supposed to be more efficient and profitable than their state counterparts. The study of Williams and Nguyen (2005) on banks in South East Asia also supports privatization of state owned banks. It also argues that privatization alone cannot transform the efficiency of divested banks. Clarke et al (2005) argues that bank privatization usually improves bank efficiency when banks are privatized to strategic investors and when the government does not restrict competition.

Politically owned private banks might also suffer from high classified loans and overstaffing like state owned commercial banks. Several studies also support such dangers of privatized banks in the hand of politicians (Clarke et al, 2005; Otchere et al, 2005). In Bangladesh context, Reaz and Arun (2005) mentions that politically influential owners are interested in tunneling money through loan disbursement to their related industry rather than making profit through efficient operation of banks. Hence, political ownership in private banks is supposed to hamper cost efficiency and profit efficiency of domestically owned private banks in Bangladesh.

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CHAPTER THREE: DATA AND METHODOLOGY

3.1 Data Collection:

I selected all four state-owned commercial banks (SOCBs), 27 out of 30 domestically owned commercial banks (DOCBs) and 5 out of 9 foreign owned commercial banks (FOCBs) operating in Bangladesh. Since business models and goals of specialized commercial banks (SPCB) are different from other commercial banks, I did not include them in my study. Out of the selected 5 FOCBs, 3 are big and 2 are small; hence they are representative of all FOCBs. Since FOCBs are not listed in stock exchanges and half of them do not publish annual report or disclose information to public in any other form, I was not able to collect information of the remaining 4 FOCBs. I chose 8 years' data (2004 to 2011) for two reasons: (i) data before 2004 are available for only for few banks (ii) 2004 to 2007 are normal period; where 2008 to 2011 are volatile period in the world economy which may also affect the performance of banking sector of Bangladesh.

Unfortunately, I could not find relevant available database for my research. Financial performance data is collected from published audited annual reports of selected banks. Annual reports of recent years (2011, 2010, and 2009) are available in the website of respective banks while annual reports for other years are not. Hence, I have collected the remaining audited reports (DOCBs) from Accounts Division of Dhaka Stock Exchange (DSE). Data of SOCBs are collected from the Library of Bangladesh Bank (the Central Bank of Bangladesh) and data of FOCBs are mostly internally collected. I have taken data from solo financial statements rather than from consolidated statements. Being solely interested in banking sector of Bangladesh rather than performance of Bangladeshi owned banks, I exclude any data of off-shore banking unit or any item from foreign operation because this

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offers the opportunity to compare the efficiency of different banks operating in Bangladesh and to draft relevant policy decisions for the banking sector of Bangladesh.

Collecting comprehensive political ownership data is the most daunting task. To determine percentage of political ownership in DOCBs, one needs to know the number of shares hold by each shareholder and his or her political identity – both unavailability of data and time do not permit to make a comprehensive list of political ownership. In this context, to get a rough estimation of political ownership, at first, data relating to number of shares held by directors and other top shareholders was collected from Accounts Division of Dhaka Stock Exchange (DSE). Later data relating to parliamentary and city corporation elections from 1970 to 2012 was collected from website of Bangladesh Election Commission (http://www.ecs.gov.bd). Finally I matched the list of large shareholders of a bank with their political identity. In defining a political person, I look for whether directors or other large shareholders are politicians and/ or have any political family relation with politicians i.e. spouse, siblings, son or daughter of MP.

3.2 Variables and Methodology:

Traditionally financial ratios were used to measure performance of banking sector. Even though traditional ratios are good to get an overall idea of performance but these are unable to measure inefficiency level compared to industry benchmark. From a policy point of view it is utmost important to know the dynamics of reducing inefficiency.

Since my interest is measuring the cost and profit inefficiency, first of all, one can run simple Ordinary Least Square (OLS) regression on usual banking variables as explanatory variables and total cost and total profit of the banking sector as dependent variables. However, OLS results are misleading since it takes the average of best fits and also assumes that all firms are efficient. In case measuring efficiency OLS results are not meaningful since:

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first, firm differs in terms of efficiency levels; second, it cannot compare efficiency of a firm compared to industry benchmark (Khatri, 2004). For example, OLS can tell us how much liquid asset affects total cost on an average but cannot tell us whether increase of liquid asset generates cost inefficiency. For the same reason, without getting inefficiency score of cost and profit of each observation, standard panel data estimation techniques such as fixed effect, random effect and first difference cannot give us our desired results. All of them can give us only the average effect of independent variables on dependent variable. From policy point of view it is crucial to know which elements affects cost and profit inefficiency of a bank. In this context, Stochastic Frontier Approach (SFA) is a standard tool to get cost inefficiency and profit inefficiency score.

In this study, I used Stochastic Frontier Approach (SFA) which is developed by Aigner et al. (1977) and is widely used in the literature of financial institution to measure performance and efficiency. Before introducing the formal model it is important to look at the key variables shown in Table 4.1. Rather than presenting the traditional financial ratios, I have used the variables which are relevant for efficiency of banking sector – most importantly which are treated as input and/or output of banking performance.

Table 3.1 Key Variables

Ratios/ Key Items	Numerator	Denominator	Indicator
Key Balance sheet items			
Percentage of Deposit from private	Deposit from private sector	Total deposit	Efficiency of collecting deposit
Equity ratio	Total shareholders' equity	Total liabilities and equity	Moral hazard of owners
Liquid asset ratio	Total liquid asset	Total asset	Liquidity
Percentage of Financial Investment in govt.	Financial investment in govt.	Total financial investment	Investment in government bonds and securities
Percentage of Financial Invest in Non-govt.	Financial Invest in Non-govt.	Total financial investment	Higher percentage shows bank is taking his risk by investing in speculative market.
Financial Investment Ratio	Total Financial investment	Total asset	Risk exposure
Long term loan ratio	Long term loan (loans	Total loans and	Higher percentage

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	with maturity period of more than 5 years)	advances	indicates maturity mismatch i.e. inefficiency
Short term loans ratio	Total short term loans ((loans with maturity period of less than 5 years)	Total loans and advances	Higher percentage indicates less risk of maturity mismatch
Industrial loans ratio	Total industrial loan	Total loans and advances	Shows the contribution in industrial development
Percentage of retails loans disbursed to management and executives	Loans to management and executives	Total Retail loan	High percentage implies corporate governance problem.
Ratio of loans to govt. and public sector	loans to govt. and public sector	Total loans and advances	High percentage indicates risk of default
Ratio of loans to private sector	loans to private sector	Total loans and advances	Contribution in private sector development
Percentage of classified loans	classified loans	Total loans and advances	Asset quality of bank
Required provision for loans and advances as a percentage of total loans and advances	Required provision for loans and advances	Total loans and advances	Efficiency. The less show more efficient.
Number of clients who in total get loans more than 10% of the bank's paid up capital	NA	NA	High number shows risk diversification efficiency
Key Income expenditure items/ ratios			
Noninterest costs ratios	Total operating cost	Total interest and non-interest revenue	Low costs shows efficiency
Total cost ratio	Interest and non-interest expenses	Total interest and non-interest revenue	Efficiency of revenue generation
Return on assets	Net profit after tax	Total asset	Efficiency of profit generation
Return on equity	Net profit after tax	Total equity	Efficiency of profit generation
Outputs, inputs and other ratios			
Price of fund	Total interest expense	Total borrowed fund (deposit and borrowing)	Low percentage shows high efficiency
Price of Labor	Total operating expenses	Number of employees	Low percentage shows high efficiency
Number of years in business			experience

Here,

Liquid assets = cash (cash in hand including foreign currencies) + Balance with the Central Bank of Bangladesh + Balance with other bank(s) and financial institutions including foreign currencies + money at call and on short notice
Financial investment in government = government treasury bills+ treasury bonds+ debenture
Financial investment in non-government = shares + sub-ordinated bonds (private corporations) + Zero coupon bond
Long term loans are loans with more than 5-year maturity period.
Total borrowed fund = total deposit plus total borrowing

In SFA models, a cost or profit frontier is estimated using a statistical procedure that decomposes the error term into two parts. One part of the error term captures random

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disturbances and the other part of the error term is assumed to capture inefficiency (Hasan and Marton, 2003). To estimate profit inefficiency score and cost inefficiency score, I have employed the following Cobb Douglas Production Function while using similar input output model of Hasan and Marton (2003):

$$\ln TC(TP+\Phi) = \alpha_0 + \sum\alpha_i \ln Y_{i\,st} + \sum\beta_k \ln W_{k\,st} + \sum \mu_h \ln E_{h\,st} + v_{st} + u_{st}$$

where log TC (TP) is the natural logarithm of total cost (total profit) of bank in a given year. TC and TP are the total cost and after tax profit respectively. **Y** is the vector of quantities of output (total financial investments, total loans and advances, noninterest earnings and total borrowed funds). **W** is the vector of inputs (price of borrowed funds and price of labor). **E** is a vector of netputs (equity capital and loan loss provision to total loan ratio).The error term **U** captures profit (cost) inefficiency and **V** captures random error.

After I find the cost inefficiency score and profit inefficiency score, I will set different estimates to see possible correlation between such inefficiency and other organization-specific variables and most importantly political ownership in DOCBs. Again I have exploited the original equation of Hasan and Marton (2003, p-2262), which was focused on the effect of foreign ownership on profit inefficiency of banks in Hungary. By employing the following two regressions, I have estimated the effects of several relevant banking variables and political ownership on cost inefficiency and profit inefficiency.

CINEFFi = a + b1 LQASSETi + b2 STLOAN +b3 FINVEST + b4 INDLOANi + b5 NUMCLIENTi +b6EQUITYi +b7LASSETi + b8 YRBUSi+b9 PSHAREi + ∑b10-12 PSHAREDUMi + ∑b13-19 YEARDUMi + ei

PINEFFi = a + b1 LQASSETi + b2 STLOAN +b3 FINVEST + b4 INDLOANi + b5 NUMCLIENTi +b6EQUITYi +b7LASSETi + b8 YRBUSi+b9 CINEFFi + b10 PSHAREi + ∑b11-13 PSHAREDUMi + ∑b14-20 YEARDUMi + ei

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where CINEFF and PINEFF are cost inefficiency score and profit-inefficiency score respectively; LQASSET, STLOAN, FINVEST, INDLOAN, EQUITY are liquid asset, short term loan, financial investment, industrial loan, and equity respectively expressed as percentage of total assets. NUMCLIENT is logarithm of the number of clients to whom 10% of equity is disbursed as loan in a year; LASSET is the logarithm of assets; YRBUS logarithm of number of years in business; PSHARE is the percentage of equity owned by political person; ∑PSHAREDUMi is the three political share dummy variables (LPCB,MPCB and HPCB) under different levels of political ownership (0.01% to 20%, 20.01% to 40% and 40% to 100%); ∑YEARDUM is the year dummy variables for sample years; ei is the error term.

All the right hand side variables are indicators of different managerial practices and thus affect cost and profit inefficiency of banks. High liquid assets imply a bank is not able to invest its funds to generate revenue whereas very low liquid assets suggest that bank is suffering from a maturity mismatch. Consequently, under normal circumstances, high liquid assets are supposed to increase cost inefficiency and profit inefficiency. In the case of high level of short term loan, bank can reinvest funds and thus it mitigates the maturity mismatch problem. However, this can reduce cost inefficiency and profit inefficiency it is an empirical issue. The issue of financial investment is critical considering high yielding but high risky stock investment, and below deposit rate of return of government securities. A bank which usually invests heavily in government securities is likely to suffer from opportunity costs. Whereas a bank having expertise in investment banking can make a good fortune from stock investment and an inept bank may experience substantial loss from it.

Banks engaged in industrial loans build a good relationship with industrial clients and earn substantial fee related income from this group. Hence, industrial loan supposed to have negative impact on cost inefficiency and profit inefficiency. No of client to whom 10% of

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equity is given as loan is an indicator of diversification of loan. Low number of clients indicates that bank is taking much risk as significant portion of money is given to small group. In case of SOCBs and other highly political commercial banks this can be more dangerous since significant portion of their large loans is disbursed based on political consideration. Consequently, it may raise the rate of default loans and thus have negative impact on both cost inefficiency and profit inefficiency. High level of equity supposed to give more confidence to depositors and hence attract more deposits at comparatively lower cost. However, the impact of equity on cost inefficiency and profit inefficiency is also an empirical issue. Due to duality theory, low cost inefficiency is supposed to decrease profit inefficiency. Logarithm of total asset, which is a proxy of size of the bank, is supposed to reduce cost inefficiency since large bank can exploit economies of scale (Hasan and Marton, 2003). Years of business, which is an indicator of experience in banking industry, in general mitigates cost inefficiency and profit inefficiency.

First of all, I estimate pooled OLS. Since in Pooled OLS, I cannot control for time constant unobserved features which might be correlated with the independent variables in my model, the estimation results under pooled OLS might not be reliable. Consequently, I use fixed effect (which uses a transformation to remove the unobserved effect of constant prior to estimation) to get rid of the effect of any variable that is constant over time.

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CHAPTER FOUR: DESCRIPTIVE STATISTICS

4.1Descriptive Statistics of overall Banking Sector

4.1.1 Key Balance Sheet Items

Table A1 shows the descriptive statistics of all the relevant balance sheet variables used in efficiency model employed on sample banks (36 banks). It is noticeable that state-owned banks (SOCBs) are not as efficient as their counterparts in collecting deposit from private sector; SOCBs highly depend on government and public organizations for deposits. In last few years, domestically owned commercial banks (DOCBs) have improved continuously in this respect and in recent years they were as efficient as foreign owned commercial banks (FOCBs). One explanation is that on average DCOBs offered 8.53% interest on deposit whereas SOCBs offered only 5.89% (Schedules Banks's Statistics, 2011, p- XXX). Equity ratios of SOCBs are the lowest among the three groups which implies depositors' money are in risk which may further influence the decision of private depositors to withdraw funds from SOCBs. From financial year 2004 to 2006 equity ratios were negative for SOCBs; this is mainly due to substantial loss in those periods. High percentage of classified loans in those periods (more than 20%) seems to be the main cause of substantial negative profit which further results in negative equity. With high default rate, these banks were also bound to maintain 11.99% of their loans' amount as provision which further resulted in low level of advances to deposit ratios.

From the table A1, the lowest liquid asset ratio of SOCBs (overall 9.53%) confirms the liquidity problem of this type of banks. It also implies that in case of bank run, SOCBs are extremely vulnerable; hence, it induces depositors not to deposits in these banks. Financial investment ratios of SOCBs are persistently high for the whole sample period; which implies that SOCBs invested significant portion of assets in low earning government securities and/or

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high risky stocks. One plausible reason of high investment in stock market is that being unable to keep up with the competition with DOCBs and FOCBs in core banking activities, SOCBs are trying to compensate by investing in high yielding but high risky stock market. High percentage of long term loan implies that SOCB may suffer from maturity mismatch .i.e. deposits in short term whereas loans are in long term. Generally in banking sector, major portion of long term loans goes to industry; however, industrial loan is lowest in case of SOCBs. One possible reason can be that 10% of SOCBs' equity goes to less number of clients compared to other banks. Considering these clients have high political linkage with low repayment history, high percentage of classified loans of SOCBs is plausible. As mentioned in chapter one, Sonali bank, a SOCB and the largest bank in Bangladesh in terms of asset size and branches, loaned 68.27% of its equity to a single political client in 2011; later this client defaulted.

4.1.2 Key Income Statement Items, Inputs and Outputs

Table A2 displays the descriptive statistics of key income statement items, inputs and outputs. In general, SOCBs are inefficient in cost management. Non interest cost ratios is the highest for SOCBs which is counter intuitive since SOCBs offer very low salary than their counterparts. One possible explanation is that SOCBs employ more employees to fulfill government's populist goal of employment creation. For example, the largest state owned bank -Sonali bank- has 21839 employees. Even though it seems SOCBs are efficient in keeping price of labor very low (0.35 million BDT per employee versus 0.97 BDT); however, real scenario is that SOCBs can not attract and retain talented employees due to low salary which in turn affects its performance in terms of business growth and profitability. Overall total cost ratio is also the highest for SOCBs. This suggests inefficient management of cost and tunneling of resources.

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Return on assets shows that SOCBs are not sustainable in the long run. For the period 2004 to 2011, overall return of asset is negative 0.37% for SOCBs compared to 1.63 for DOCBs. This is mainly due to substantial loss in 2004, and 2006. Considering significant amount of deposit are collected from government and public sector and low deposit rates are offered to depositors, it is not surprising that SOCBs' price of fund is the lowest. Rather than considering this as efficiency it can be deemed as inefficiency since lower offered deposit rates deter SOCBs to be competitive in collecting deposit from private sector.

4.2. Descriptive Statistics of Political Ownership in DOCBs

4.2.1 Key Balance Sheet Items

Table A3 shows the descriptive statistics of all the relevant balance sheet variables used in efficiency model employed on sample banks (27 domestically owned commercial banks) with different degree of political ownership. All 27 DOCBs are classified into three groups: political ownership of (i) 0.01% to 20% - low political commercial banks (LPCBs) (ii) 20.01% to 40.01%- moderately political commercial banks (MPCBs) and (iii) 40.01% to 100% - highly politically owned banks (HPCBs). No DOCB was found with more than 60% political ownership. From the table, it is noticeable that overall the capacity of collecting deposit from private sector is similar for LPCBs and MPCBs. It is evident that HPCBs collect significant part of its deposit from government and public sector which is similar to the characteristic of SOCBs. Ironically, overall equity ratio is the highest for HPCBs whereas it is the lowest for LPCBs. However, the recent years' data shows that LPCBs' equity ratios are increasing whereas those of HPCBs' are decreasing.

From Table A3, it is observable that LPCBs have the lowest percentage of long term loans which is a good indication since low percentage of long term loans indicates low risk of maturity mismatch. Overall percentage of loans disbursed for industrial purpose is more or

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less similar for LPCBs and MPCBs (51.88% and 51.92% respectively); however HPCBs make very low level of industrial loans (22.88%) which is very similar to the characteristic of SOCBs (20.96%). Ironically loans to management are lower for HPCBs than that of MPCBs. One explanation is that since HPCBs disburse high percentage of retail loans (77.12% compared to 48.08% of MPCBs), loans to management as a percentage of total retail loans are by default supposed to show lower percentage. Another explanation is that there is vicious cycle among HPCBs - that is – to avoid regulatory surveillance, HPCBs disburse loans to management of another HPCBs rather than disbursing loans to own management i.e. reciprocal relationship. Loans to government and public sector is very low in case of all type of DOCBs (0.26 % to 1.90%) which implies that loans to private sector is very high for all DOCBs irrespective of political ownership. Perhaps political ownership affects the quality of loans most since HPCBs have the highest percentage of classified loans (8.30%) which is the lowest for LPCBs (2.89 %).

4.2.2 Key Income Statement Items, Inputs and Outputs

Table A2 displays the descriptive statistics of key income statement items, inputs and outputs of domestically owned commercial banks. It is noticeable that the overall non interest cost ratio, which is the ratio of operating expenses and total interest and non interest revenue, is the lowest in case of LPCBs. It implies that LPCBs are efficient in either managing operating cost or/ and increasing total revenue. In case of overall total cost ratio, there is no significant difference between LPCBs and MPCBs; again HPCBs are the worst performing banks, especially in the year 2011.

From the same table, looking at the return on assets and return on equity one can safely infer that LPCBs exploit their assets to generate enough revenues more efficiently compared to its counterparts. Overall, price of fund is the highest for HPCBs which implies

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that these banks are inefficient in collecting deposit and borrowing money. Moreover, pirce of labor, which is the ratio of total operating expenses and total number of employees, is the highest for HPCBs. Considering highly political commercial banks are overstaffed; one possible explanation is that perhaps these banks are engaged with related party transactions and tunnel the resources of banks, and thus incur high operating expenses. Even though overall price per labor is not that high for MPCBs, we can observe in recent years their cost increases significantly.

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CHAPTER FIVE: ESTIMATION RESULTS

At first, I calculated cost inefficiency and profit inefficiency scores by using stochastic frontier approach while employing the earlier mentioned Cobb Douglas Production Function (Table B1). After calculating the inefficiency scores, I first show the results of the effects of relevant banking variables and political ownership on cost inefficiency score of the sample banks. I then examine the effects of the same banking variables, political ownership and cost inefficiency score on profit inefficiency score of banks. I used both Pooled OLS and fixed effect (FE). Since in Pooled OLS, I cannot control for time constant unobserved features which might be correlated with the independent variables in my model, the estimation results under pooled OLS might not be reliable. Hence, I emphasized and accepted the estimation results of fixed effect because it uses a transformation to remove the unobserved effect of constant prior to estimation.

5.1Correlates of Cost Inefficiency Scores:

I estimated three models by Pooled OLS and two models by fixed effect (FE) estimators. In model A, I run only on variables that usually affect cost efficiency of a bank. Model B includes percentage of political ownership of sample banks to spot whether politics matter for cost inefficiency. Model C allows degree of political ownership to explore whether different levels of political influences have different levels of impact on cost inefficiency. To explore the effects of politics and relevant variables regressions are run at first on all types of sample banks (i.e. DOCBs, FOCBs, and SOCBs), and then only on DOCBs.

Beginning with the all types of sample banks, Table B2 shows that liquid asset increases cost inefficiency significantly which is consistent with the Jensen's free cash flow hypothesis (Jensen, 1986) that organization holding liquid asset more than benchmark deteriorates cost efficiency. Such inefficiency stems from the opportunity cost of holding

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liquid asset in the form of cash in hand, cash with other bank, and money at call short notice because rate of return on these liquid assets are too low to cover rate of interest paid to depositors. The negative impact (significant in pooled OLS but not in FE) of financial investment on cost efficiency might be the repercussion of substantial stock market engagement of state owned commercial banks, which do not have sufficient expertise in stock market but have made significant investment in recent years. Another plausible reason is investment in low earning government securities. Short term loan, which mitigates maturity mismatch problem of a bank, reduces cost inefficiency significantly as displayed by negative relation with cost inefficiency in model A under FE. However, this relationship becomes insignificant when percentage of political share is introduced in B under FE. Industrial loan demonstrates insignificant positive association with cost inefficiency. Since the coefficients are extremely low for short term loan and industrial loan and they are not statistically significant the complete model of FE (i.e. model B), it can be safely said that neither of these two loans has significant impact on cost inefficiency of overall banking sector in Bangladesh.

Even though number of clients, a proxy of loan diversification, has significant negative correlation with the dependent variable in first two models under OLS, presence of insignificant positive correlation in model B under FE suggests that diversification of loans does not necessarily reduce cost inefficiency for all type of banks. Similar to the findings in literature (Chan and Karim, 2010) which shows that high equity reduces cost efficiency, in case of Bangladesh, higher equity worsens cost inefficiency in model A and B under FE even though it is not statistically significant.

From Table B2, I note that logarithm of total asset, which indicates the size of bank in terms of assets, appears to reduce cost inefficiency significantly in the models under Pooled OLS. It deteriorates cost inefficiency in the complete model (model B) of FE even though it is not statistically significant. In case of Bangladesh, all 4 state owned commercial banks are

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the biggest 4 banks in the country in terms of assets. Descriptive statistics (Table A2) shows that total cost ratio is the highest for state owned banks compared to other types of banks. Hence, the negative impact of size of bank on cost efficiency is a plausible one. Contrary to the findings of Hasan and Marton (2003), in the Hungarian context, model B under FE shows that years of business, a proxy of experience in industry, does not mitigate cost inefficiency significantly in case of overall banking sector in Bangladesh.

Turning to the effects of political ownership, percentage of political ownership deteriorates cost inefficiency significantly. From model C under Pooled OLS, it can be seen that any level of political ownership worsens cost inefficiency significantly and among the three groups highly political banks (HPCBs: political ownership more than 40%) have the highest coefficient among the three groups. One plausible explanation is that highly politically owned banks, whose directors are usually politicians, prefer to employ political activists regardless of qualification; consequently, these banks are overstaffed with inefficient employees. Another plausible explanation is that political directors are engaged in substantial related party transactions, and thus tunnel resources of bank through over invoicing and unfavorable transactions for the bank itself. All these factors are probably also present in moderately politically owned commercial banks (MPCBs: political ownership 20.01% to 40%). Perhaps the mismatch between cash flow right and control right is the main reason of cost inefficiency for lowly politically owned commercial banks (LPCBs: political ownership 0.01% to 20%). Even in LPCBs, politicians influence loan disbursement decisions and thus big loans are channeled to their interested organizations regardless of the merit of the loans. Sapienza (1999 & 2004), in the Italian context, finds that state-owned banks charge lower interest rates to business group which has strong political involvement. These malpractices increase the ratio of nonperforming loans and thus costs to banks. However, in my case, the robustness of these results of political dummy cannot be checked by fixed effect method

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since political dummies are constant over some periods. For example, all the state and some domestic owned commercial banks fall under "Highly Political Commercial Bank (HPCB)" in all sample periods. In other words, these banks do not change their group over time. Moreover, considering government has 100% ownership in state owned commercial banks, classification of underperforming SOCBs as HPCBs might have resulted in overestimation of the effects of political ownership on cost inefficiency for overall banking industry. To reveal the difference between the impacts of political ownership on overall banking sector and on domestically owned commercial banks, it is essential to estimate only for DOCBs.

Table B3 displays the correlates of cost inefficiency scores estimates for domestically owned commercial banks. The estimation results suggests that except short term loan the behavior of main banking variables show similar relationship for overall banking sector and for DOCBs. Like previous case, liquid asset increases cost inefficiency significantly and financial investment has negative insignificant effect. Industrial loans and equity also have insignificant positive association with dependent variable. From model B under fixed effect, I note that logarithm of total assets, a proxy for size of banks, and years in business, a proxy for experience in banking industry, also do not matter for reducing cost inefficiency of domestically owned commercial banks in Bangladesh. These two results indicate the poor performance of large sized first generation private banks: some of which are denationalized banks and rest of them came into operation based on political consideration in the regime of military dictator. Unlike in the case of overall of banking sector, short term loan mitigates cost inefficiency significantly for domestically owned commercial banks in Bangladesh.

Moving to the effect of political ownership on cost inefficiency of domestically owned commercial banks, I note that percentage of political share remains statistically significant at 1% in worsening cost inefficiency even though coefficient drops from 0.136 to 0.092. Compared to the case of overall banking sector, here, only HPCBs show strong

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relationship with cost inefficiency and significant at 1%. MPCB and LPCB show weak relationship and are no longer significant at 1%. These results imply that highly political DOCBs' banking practices are similar to SOCBs. Even though very strong correlation of MPCBs and LPCBs in earlier case can be attributed to the political influence on SOCBs, the weak correlation but statistically significant impacts of MPCBs and LPCBs in case of DOCBs shows that political ownership matters in worsening cost inefficiency of domestically owned commercial banks.

5.2. Correlates of Profit Inefficiency Scores:

Using the whole sample, in Table B4, I have employed four models under Pooled OLS and fixed effect (FE). In model A, I run only on variables that usually affect profit inefficiency of a bank. Model B includes political share and in model C I want to see the significance of cost inefficiency score on profit inefficiency score. Finally in model D, political ownership dummies are introduced to delve the impact of different degree of political influences on profit inefficiency of banks.

Table B4 displays the correlates of profit inefficiency scores for overall banking sector. Strikingly, higher liquid asset does not have any significant impact on profit inefficiency. Bordleau and Graham (2010) argues that lower liquid assets than benchmark can also hamper profitability since illiquid banks fails to attract depositors and in severe cases may induce bank run. Perhaps banking sector of Bangladesh has lower liquid asset than benchmark; hence, increase in liquid asset does not deteriorate profit inefficiency further. From descriptive statistics (Table A1), I found that SOCBs, which comprises 31.11 % of total asset of banking sector (page-3), have the lowest liquid assets and the lowest profit margin compared to FOCBs and DOCBs. The negative impact, even though not significant, of financial investment perhaps results not only from substantial investment in government securities but also from the downward trend of stock market index in last three years. Short

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term loan worsens profit inefficiency significantly which is in line with the findings of Hasan and Marton (2003); however it is not significant when political ownership dummy are introduced. Industrial loan shows consistent negative relation with profit inefficiency however without any acceptable statistical significance. One possible explanation is that banks engaged in industrial loans build a good relationship with industrial clients and earn substantial fee related income from this group. Number of clients to whom 10% of equity is disbursed as a loan seems to improve profitability of a bank significantly in all models under OLS; however it worsens profit inefficiency in all models under FE. Equity shows mixed relationship in all the models and it does not have significant impact on profit inefficiency. The mixed behavior of different variables under different models and methods implies that the business model of state owned commercial banks might have influence the usual behavior of variables. Hence, further investigation is needed to know the relationship for DOCBs.

Logarithm of asset, which represents the total assets of a bank, mitigates profit inefficiency of bank significantly in the complete model (i.e. when political ownership is introduced) under FE. One plausible explanation is that due to significant size, larger bank can diversify and introduce new banking products and enjoy economies of scale and can achieve profit efficiency. Moreover, DeYoung and Nolle (1998) find that big banks can hire and retain efficient employees who are ultimate efficiency drivers. Year of business significantly mitigates profit inefficiency of the overall banking sector in the complete model under FE. Cost inefficiency scores seems to affect profit efficiency significantly which confirms duality theory that firms which are efficient in cost management usually also profit efficient.

Turning to the effects of political ownership on overall banking sector, from Table B4, it is evident that percentage of political ownership is not significant for profit inefficiency in the most acceptable model (i.e. model C under FE). This finding is surprising considering

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political ownership deteriorates cost inefficiency significantly. Since I cannot introduce political ownership dummy under FE due to constant nature of political dummies for some banks, I cannot know the precise effect of different level of political ownership on profit inefficiency. Pooled OLS offers solution in this respect, even though not highly reliable. In model D, all the political dummy variables show significant positive relationship with profit inefficiency. Considering SOCBs are characterized by low profitability and high political influence, inclusion of SOCBs as HPCBs might have resulted in overestimation of relationship between politics and profit inefficiency for the overall banking sector; hence, it is crucial to investigate the relationship only for DOCBs.

Table B5 displays the correlates of profit inefficiency scores estimates for domestically owned commercial banks. The estimation results suggest that except some banking variables the behavior of other main banking variables show similar relationship for overall banking sector and for DOCBs. Similar to the case of overall banking sector, liquid asset and financial investment do not have significant impact on profit inefficiency in the most acceptable model (i.e. model C under FE). This implies that a new and growth oriented bank is required to maintain a threshold of liquid asset to attract clients; hence, higher liquid assets does not necessarily impairs a bank's profit inefficiency. Like before, industrial loan displays an inverse relationship with dependent variable however without any acceptable level of statistical significance. Equity has mixed and insignificant effects on profit inefficiency under different models.

Three banking variables: number of clients, logarithm of assets and years of business display different results for DOCBs compared to those for overall banking sector. Unlike the case of overall banking sector, logarithm of assets and years of business do not mitigate profit inefficiency significantly in the case of domestically owned commercial banks in Bangladesh. Considering first generation private banks include poor performing denationalized banks and

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rest of the first generation banks came into operation based on political consideration in the regime of military dictator, such insignificant role of size of bank and years of experience in mitigating profit inefficiency is also plausible. Strikingly, the number of clients to whom 10% of equity is disbursed as loan seems to deteriorate profit inefficiency of domestically owned private banks. One possible explanation is that only high performing DOCBs are in position to finance mega projects which usually run by reputed big companies. Hence, even though these banks disburse 10% of equity as loan to fewer number clients, profitability of banks can be unhurt.

Moving to the effects of political ownership on DOCBs, from Table B5, it is evident that similar to the case of overall banking sector, percentage of political ownership is not significant for profit inefficiency in the most acceptable model (i.e. model C under FE). The results of Pooled OLS, even though not highly reliable, show that all the political dummy variables have significant positive relationship with profit inefficiency.

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CONCLUSIONS:

Using stochastic frontier approach, I tested the effects of state ownership and political ownership on cost inefficiency and profit inefficiency of banks operating in Bangladesh for the period 2004 to 2011. This study also incorporated several banking variables (e.g. liquid assets, financial investment, short term loans, equity etc.) to capture the precise effects of political ownership. Considering the ever-changing nature of large number of shareholders in each bank and unavailability of data of their political identity, making a comprehensive list of political ownership is a challenging task. In this context, to get a rough estimation of political ownership, I collected data only relating to number of shares held by directors and other top shareholders and matched the list of large shareholders of a bank with their political identity. While lack of comprehensive data is a concern, I believe that the results nonetheless offer a new avenue regarding the effects of political ownership on baking inefficiency, especially in Bangladesh.

Since in Pooled OLS, I cannot control for time constant unobserved features which might be correlated with the independent variables in my model, the estimation results under pooled OLS might not be reliable. Hence, I emphasized and accepted the estimation results of time demeaned fixed effect because it uses a transformation to remove the unobserved effect of constant prior to estimation. The estimation results regarding cost inefficiency suggest that except short term loan the behavior of main banking variables show similar relationship for overall banking sector and for domestically owned commercial banks. Liquid asset increases cost inefficiency significantly which is consistent with the Jensen's free cash flow hypothesis (Jensen, 1986) that organization holding liquid asset more than benchmark deteriorates cost efficiency. Financial investment worsens cost inefficiency insignificantly. Short term loan, which mitigates maturity mismatch problem of a bank, mitigates cost inefficiency for overall banking sector insignificantly; however, the role of short term loan in

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reducing cost inefficiency is statistically significant only in case of DOCBs. Industrial loan increases cost inefficiency insignificantly. Number of clients, a proxy of loan diversification, suggests that diversification of loans does not necessarily reduce cost inefficiency. Similar to the findings in literature (Chan and Karim, 2010), in case of Bangladesh, higher equity worsens cost efficiency without any acceptable level of significance. Contrary to the literature, logarithm of total asset, which indicates the size of bank in terms of assets, appears to deteriorate cost inefficiency in the complete model not only for overall banking sector but also for DOCBs. This demonstrates the inefficiencies of SOCBs and first generation DOCBs since they are the large banks in Bangladesh. Similar to the findings of Hasan and Marton(2003), in the Hungarian context, years of business mitigates cost inefficiency in Bangladesh even though it is not significant under fixed effect.

Turning to the effects of political factor, percentage of political ownership deteriorates cost inefficiency significantly not only for overall banking sector but also for domestically owned commercial banks. I also find that any level of political influence worsen cost inefficiency significantly and among the three group highly political banks (ownership more than 40%) have the highest coefficient both in case of overall banking sector and for DOCBs.

The estimation results regarding profit inefficiency also suggest that except some banking variables the behavior of other main banking variables show similar relationship for overall banking sector and for DOCBs. Strikingly, higher liquid asset does not have any significant impact on profit inefficiency which implies that perhaps banking sector of Bangladesh has lower liquid asset than benchmark; hence, increase in liquid asset does not necessarily deteriorate profit inefficiency further. The negative impact, even though not significant, of financial investment perhaps results not only from substantial investment in government securities but also from the downward trend of stock market index in last three years. Short term loan worsens profit inefficiency significantly which is in line with the

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findings of Hasan and Marton (2003). Industrial loan and equity do not have significant impact on profit inefficiency.

Profit inefficiency estimation results shows that three banking variables: number of clients, logarithm of assets and years of business display different results for DOCBs compared to those for overall banking sector. Unlike the case of overall banking sector, logarithm of assets and years of business do not mitigate profit inefficiency significantly in the case of domestically owned commercial banks in Bangladesh. Considering first generation private banks include poor performing denationalized banks and rest of the first generation banks came into operation based on political consideration in the regime of military dictator, such insignificant role of size of bank and years of experience in mitigating profit inefficiency is also plausible. Strikingly, the number of clients to whom 10% of equity is disbursed as loan seems to deteriorate profit inefficiency of domestically owned private banks. One possible explanation is that only high performing DOCBs are in position to finance mega projects which usually run by reputed big companies. Hence, even though these banks disburse 10% of equity as loan to fewer number clients, profitability of banks can be unhurt.

Political ownership does not affect profit inefficiency significantly under FE; however, results of Pooled OLs, even though not highly reliable, show that all the political dummy variables have significant positive relationship with profit inefficiency. Considering some banks are grouped into same type of political dummy over time, I can not get the effect of different levels of political ownership (i.e. LPCB, MPCB, HPCB) under FE.

Overall, these estimation results strongly indicate that political ownership worsens cost inefficiency significantly not only for overall banking sector but also for domestically owned commercial banks. However, the impact on profit inefficiency is not clear. In this

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context, further study can be done covering more countries to delve the impacts of political ownership in banking companies in both developed and developing countries.

The findings of this study suggest that, in case of Bangladesh, Banking company act should be revised so that central bank can be the sole and ultimate authority to monitor and take action against any wrong doing of state owned banks. Such authority of central bank over state owned banks can be helpful in mitigating cost inefficiency of overall banking sector. It is also evident that to solve conflict of interest and to stop politicization of domestically owned commercial banks, ensuring the independence of the central bank is a must.

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APPENDIX A: DESCRIPTIVE STATISTICS

Table A1: Key Balance Sheet Items for all Sample Banks

Particulars	Overall	Y11	Y10	Y9	Y8	Y7	Y6	Y5	Y4
Percentage of Deposit from private									
Industry	83.62	82.40	83.85	83.40	83.16	83.31	82.86	82.40	83.71
SOCB	68.86	63.57	67.77	67.82	69.00	70.83	71.78	73.00	73.09
DOCB	87.64	89.97	90.04	89.03	86.64	85.18	82.81	80.79	85.05
FOCB	93.61	93.66	93.74	93.36	93.85	93.91	94.00	93.40	93.00
Equity ratio									
Industry	7.75	11.58	9.90	8.74	7.92	7.23	3.83	7.12	4.89
SOCB	3.08	7.81	6.47	4.49	3.56	2.08	-6.17	-0.96	-1.39
DOCB	7.62	8.98	7.87	7.42	6.89	6.46	5.22	7.30	8.30
FOCB	13.66	17.96	15.35	14.31	13.30	13.15	12.44	15.03	7.76
Liquid asset ratio									
Industry	14.60	16.68	13.33	14.69	14.69	15.18	14.04	14.23	15.13
SOCB	9.53	10.97	10.01	8.20	8.24	9.04	9.52	10.16	9.36
DOCB	12.04	12.31	9.01	13.93	11.34	13.52	12.92	12.00	14.87
FOCB	22.31	26.75	20.98	21.92	24.49	22.99	19.68	20.53	21.15
Fin Inv Ratio									
Industry	13.50	14.10	12.68	19.40	15.34	11.88	10.84	10.59	12.78
SOCB	18.14	20.48	16.91	21.15	19.05	18.58	12.46	14.54	18.61
DOCB	12.17	12.71	11.91	13.15	11.28	11.43	11.98	10.19	13.49
FOCB	10.62	9.11	9.23	23.91	15.70	5.64	8.09	7.03	6.24
Long term loan ratio									
Industry	12.15	11.71	12.71	13.45	12.13	13.34	10.90	11.91	11.50
SOCB	24.75	18.99	25.14	28.24	26.43	30.38	24.84	24.73	22.56
DOCB	8.16	7.80	7.27	9.40	8.23	8.52	7.87	8.72	8.88
FOCB	3.12	8.35	5.72	2.72	1.74	1.13	0.00	2.29	3.05
short term loans ratio									
Industry	87.85	88.29	87.29	86.55	87.87	86.66	89.10	88.09	88.50
SOCB	75.25	81.01	74.86	71.76	73.57	69.62	75.16	75.27	77.44
DOCB	91.84	92.20	92.73	90.60	91.77	91.48	92.13	91.28	91.12
FOCB	96.88	91.65	94.28	97.28	98.26	98.87	100.00	97.71	96.95
industrial loans ratio									
Industry	43.23	45.55	39.04	41.62	42.91	43.76	39.91	44.04	43.84
SOCB	20.96	22.52	24.65	19.81	19.97	20.55	19.57	18.58	19.03
DOCB	48.44	55.52	47.09	51.24	44.70	46.65	38.07	43.90	44.88
FOCB	60.66	58.61	45.39	53.82	64.07	64.08	62.09	69.63	67.62
Retail loan ratio									
Industry	56.37	52.59	59.61	58.38	57.09	56.24	60.09	58.61	59.44
SOCB	79.04	71.92	71.39	80.19	80.03	79.45	80.43	81.42	80.97
DOCB	51.56	44.48	52.84	48.76	55.30	53.35	61.93	64.03	64.98
FOCB	39.34	41.39	54.61	46.18	35.93	35.92	37.91	30.37	32.38
Ratio of loans to consumers as of total retail loan									
Industry	96.37	95.62	96.37	95.85	94.27	96.85	96.88	97.62	97.68
SOCB	93.36	92.30	92.59	92.48	93.57	94.22	94.08	94.23	94.57
DOCB	97.62	97.65	98.86	98.52	92.02	98.58	98.88	98.64	98.45
FOCB	97.97	96.90	97.66	96.55	97.21	97.76	97.69	100.00	100.00
"Ratio of loans to management directors and executives as of total retail loan"									
Industry	3.63	4.38	3.63	4.15	5.73	3.15	3.12	2.38	2.32
SOCB	6.64	7.70	7.41	7.52	6.43	5.78	5.92	5.77	5.43
DOCB	2.38	2.35	1.14	1.48	7.98	1.42	1.12	1.36	1.55
FOCB	2.03	3.10	2.34	3.45	2.79	2.24	2.31	0.00	0.00
Ratio of loans to govt and public sector									
Industry	5.73	4.93	4.35	6.02	6.23	7.44	5.55	5.48	5.72

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SOCB	15.38	13.65	11.55	16.72	17.38	20.88	15.33	15.06	15.51
DOCB	0.65	0.75	0.80	0.49	0.63	0.56	0.44	0.65	0.49
FOCB	0.79	0.39	0.69	0.86	0.69	0.89	0.89	0.74	1.14
Ratio of loans to private sector									
Industry	94.27	95.07	95.65	93.98	93.77	92.56	94.45	94.52	94.28
SOCB	84.62	86.35	88.45	83.28	82.62	79.12	84.67	84.94	84.49
DOCB	99.35	99.25	99.20	99.51	99.37	99.44	99.56	99.35	99.51
FOCB	99.21	99.61	99.31	99.14	99.31	99.11	99.11	99.26	98.86
Percentage of classified loans									
Industry	8.83	5.37	5.78	8.67	10.86	13.28	8.60	9.31	11.02
SOCB	20.27	11.71	13.81	20.74	26.08	32.84	20.95	21.26	25.06
DOCB	3.95	2.87	2.46	3.40	4.52	5.81	4.79	6.61	7.93
FOCB	0.98	1.54	1.08	1.86	1.98	1.20	0.05	0.05	0.06
Required provision for loans and advances as a percentage of total loans and advances									
Industry	6.01	4.16	4.81	6.26	6.96	8.17	6.07	6.44	6.44
SOCB	11.99	7.75	9.86	12.81	14.88	17.59	11.98	11.90	13.47
DOCB	2.96	2.25	2.22	2.53	3.07	4.62	3.62	5.12	3.89
FOCB	2.54	2.47	2.35	3.44	2.91	2.30	2.62	2.30	1.96
Number of clients who in total get loans more than 10% of the bank's paid up capital									
Industry	26.05	17.24	21.60	26.83	23.91	32.94	33.61	29.61	22.67
SOCB	24.84	8.50	14.75	17.00	25.25	36.25	39.00	35.00	23.00
DOCB	34.00	23.67	27.00	30.33	30.50	35.17	47.83	42.33	30.00
FOCB	19.95	19.56	23.04	33.15	16	27.4	14	11.5	15
Advances to Deposits ratios									
Industry	80.39	77.98	80.90	71.47	78.22	80.79	83.41	89.94	82.96
SOCB	69.59	69.91	69.88	64.06	63.82	66.92	77.78	76.94	70.47
DOCB	94.80	92.05	95.68	91.34	98.69	96.97	95.16	104.56	91.56
FOCB	76.40	71.97	77.15	59.01	72.15	78.46	77.29	88.30	86.86

Note: author's own calculation based on data of Annual Reports of sample banks.

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Table A2: Key income statement items and inputs and outputs: all sample banks

	Overall	2011	2010	2009	2008	2007	2006	2005	2004
Key Income Expenditure items/ratios									
Non interest cost ratios									
Industry	22.89	22.06	24.10	25.60	22.94	20.52	23.15	23.12	24.69
SOCB	25.97	21.57	26.48	31.11	30.73	22.98	24.64	25.17	26.31
DOCB	22.05	23.02	23.28	20.46	19.74	20.20	23.75	22.20	24.27
FOCB	18.84	20.27	20.15	19.23	17.77	16.24	16.60	19.21	20.22
Total cost ratios									
Industry	66.05	62.31	58.83	66.43	67.57	63.86	72.56	71.49	74.20
SOCB	73.09	65.10	67.07	74.69	77.57	66.78	80.73	78.88	92.38
DOCB	69.25	73.95	61.37	67.27	69.24	69.49	76.78	70.60	71.20
FOCB	49.81	44.90	46.55	54.32	55.88	49.31	48.96	49.89	53.02
Return on assets									
Industry	1.14	1.71	1.68	1.64	1.52	0.98	-0.56	0.99	-0.11
SOCB	-0.37	1.09	0.59	0.65	0.79	-0.94	-5.55	0.29	-3.12
DOCB	1.63	1.31	2.23	1.91	1.69	1.81	1.14	0.93	0.91
FOCB	2.33	2.79	2.46	2.53	2.18	2.17	2.03	1.95	1.75
Outputs inputs and other ratios									
Price of fund									
Industry	5.36	5.81	4.27	5.16	5.85	4.87	5.37	4.81	4.86
SOCB	3.95	4.47	3.90	3.97	3.92	2.23	4.53	3.92	4.41
DOCB	6.62	7.31	5.26	6.53	7.45	7.54	6.96	5.97	5.64
FOCB	4.34	3.74	3.44	4.87	5.37	4.53	4.48	4.40	4.46
Price of Labor (in million BDT)									
Industry	0.84	1.17	0.94	0.81	0.73	0.65	0.61	0.54	0.40
SOCB	0.35	0.57	0.54	0.49	0.41	0.17	0.26	0.22	0.19
DOCB	0.97	1.36	1.27	0.98	0.91	0.84	0.76	0.55	0.53
FOCB	1.03	1.46	1.10	1.03	0.94	0.88	0.84	0.95	0.85

Note: author's own calculation based on data of Annual Reports of sample banks.

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Table A3: Key Balance sheet items of domestically owned private banks under different degree of political ownership

	Overall	2011	2010	2009	2008	2007	2006	2005	2004
Percentage of deposit from private sector									
All banks	87.64	89.97	90.04	89.03	86.64	85.18	82.81	80.79	85.05
LPCBs	88.96	91.53	88.98	88.35	90.01	88.05	85.14	83.02	90.65
MPCBs	88.06	91.87	93.43	91.61	82.39	81.97	80.56	79.29	79.98
HPCBs	80.06	75.23	84.83	83.91	81.59	80.46	78.21	76.25	77.23
Equity ratio									
All banks	7.62	8.98	7.87	7.42	6.89	6.46	5.22	7.30	8.30
LPCBs	7.40	9.22	8.24	7.56	6.67	6.27	5.00	5.01	4.61
MPCBs	7.78	8.65	6.80	6.46	6.86	6.38	5.30	11.65	14.42
HPCBs	8.15	8.86	9.20	9.80	8.05	7.57	5.98	4.98	5.76
Liquid asset ratio									
All banks	12.04	12.31	9.01	13.93	11.34	13.52	12.92	12.00	14.87
LPCBs	11.34	12.21	7.33	12.53	10.88	14.21	12.21	11.05	15.14
MPCBs	13.30	12.54	10.33	17.15	13.08	12.00	14.29	14.61	16.90
HPCBs	11.68	12.08	13.49	11.14	8.73	14.53	12.45	8.94	8.45
financial investment ratio									
All banks	12.17	12.71	11.91	13.15	11.28	11.43	11.98	10.19	13.49
LPCBs	12.49	12.66	11.39	13.88	11.54	12.55	12.51	11.00	16.04
MPCBs	11.32	11.96	11.77	11.75	10.88	9.84	12.27	9.12	9.85
HPCBs	13.11	15.56	14.94	13.76	11.08	10.63	8.81	9.85	13.70
Long term loan ratio									
All banks	8.16	7.80	7.27	9.40	8.23	8.52	7.87	8.72	8.88
LPCBs	4.68	5.79	4.13	5.26	4.27	3.56	3.95	5.19	3.39
MPCBs	13.52	10.34	11.50	15.34	14.61	16.18	16.14	15.87	18.53
HPCBs	8.18	9.01	10.15	12.57	9.70	7.33	2.43	3.61	1.36
short term loans ratio									
All banks	91.84	92.20	92.73	90.60	91.77	91.48	92.13	91.28	91.12
LPCBs	95.32	94.21	95.87	94.74	95.73	96.44	96.05	94.81	96.61
MPCBs	86.48	89.66	88.50	84.66	85.39	83.82	83.86	84.13	81.47
HPCBs	91.82	90.99	89.85	87.43	90.30	92.67	97.57	96.39	98.64
Industrial loans ratio									
All banks	48.44	55.52	47.09	51.24	44.70	46.65	38.07	43.90	44.88
LPCBs	51.88	60.79	48.21	52.35	52.32	50.06	44.73	44.40	43.21
MPCBs	51.92	53.89	49.49	55.18	45.06	54.99	39.17	58.11	62.67
HPCBs	22.88	34.47	34.16	34.08	9.56	9.56	9.56	9.28	7.21
Retail loan ratio									
All banks	51.56	44.48	52.84	48.76	55.30	53.35	61.93	64.03	64.98
LPCBs	48.12	39.21	51.66	47.65	47.68	49.94	55.27	55.60	56.79
MPCBs	48.08	46.11	50.51	44.82	54.94	45.01	60.83	64.35	63.00
HPCBs	77.12	65.53	65.84	65.92	90.44	90.44	90.44	90.72	92.79
Ratio of loans to consumers as of total retail loan									
All banks	97.62	97.65	98.86	98.52	92.02	98.58	98.88	98.64	98.45
LPCBs	99.04	97.09	99.43	99.43	99.45	99.61	99.68	99.70	99.71
MPCBs	94.78	97.83	97.85	96.78	76.38	96.81	97.14	96.76	96.30
HPCBs	99.08	98.94	98.98	98.70	98.70	98.70	99.90	99.64	99.77
Ratio of loans to management directors and executives as of total retail loan									
All banks	2.38	2.35	1.14	1.48	7.98	1.42	1.12	1.36	1.55
LPCBs	0.96	2.91	0.57	0.57	0.55	0.39	0.32	0.30	0.29
MPCBs	5.22	2.17	2.15	3.22	23.62	3.19	2.86	3.24	3.70
HPCBs	0.92	1.06	1.02	1.30	1.30	1.30	0.10	0.36	0.23
Ratio of loans to govt and public sector									
All banks	0.65	0.75	0.80	0.49	0.63	0.56	0.44	0.65	0.49
LPCBs	0.62	0.98	1.04	0.36	0.42	0.28	0.20	0.13	0.13

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MPCBs	0.26	0.35	0.34	0.19	0.26	0.17	0.15	0.10	0.12
HPCBs	1.90	1.00	1.00	2.00	2.56	2.78	2.13	3.61	2.41
Ratio of loans to private sector									
All banks	99.35	99.25	99.20	99.51	99.37	99.44	99.56	99.35	99.51
LPCBs	99.38	99.02	98.96	99.64	99.58	99.72	99.80	99.87	99.87
MPCBs	99.74	99.65	99.66	99.81	99.74	99.83	99.85	99.90	99.88
HPCBs	98.10	99.00	99.00	98.00	97.44	97.22	97.87	96.39	97.59
Percentage of classified loans									
All banks	3.95	2.87	2.46	3.40	4.52	5.81	4.79	6.61	7.93
LPCBs	2.89	2.78	2.06	2.33	3.04	3.55	3.22	4.44	5.41
MPCBs	4.09	2.59	2.40	3.96	5.17	6.29	4.57	5.38	9.78
HPCBs	8.30	4.26	4.66	7.12	9.50	13.62	11.42	16.53	10.63
Required provision for loans and advances as a percentage of total loans and advances									
All banks	2.96	2.25	2.22	2.53	3.07	4.62	3.62	5.12	3.89
LPCBs	2.27	2.30	2.10	2.01	2.45	2.74	2.33	2.31	2.30
MPCBs	2.69	2.18	2.37	2.76	2.94	3.89	2.70	2.29	3.89
HPCBs	6.82	2.23	2.34	4.42	6.21	14.30	10.92	20.84	8.35
Number of clients who in total get loans more than 10% of the bank's paid up capital									
All banks	34.35	23.67	27.00	30.33	30.50	35.17	47.83	42.33	30.00
LPCBs	10.50	5	9	11	8	4	19	16	12
MPCBs	42.00	29.50	38.50	43.50	40.00	39.50	57.00	49.50	37.00
HPCBs	15.11	15.00	12.40	19.00	9.50	14.00	22.670	16.33	12.00
Advances to Deposits ratios									
All banks	94.80	92.05	95.68	91.34	98.69	96.97	95.16	104.56	91.56
LPCBs	91.58	89.46	98.56	92.66	93.00	87.00	87.50	96.74	76.20
MPCBs	95.86	91.69	90.06	85.01	103.80	111.40	103.92	112.29	109.82
HPCBs	108.45	109.85	100.01	107.32	115.91	108.35	109.26	116.55	110.63

Note: author's own calculation based on data of Annual Reports of sample banks.

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Table A4: Key income statement items and inputs and outputs: of domestically owned private banks under different degree of political ownership

	Overall	2011	2010	2009	2008	2007	2006	2005	2004
Key Income Expenditure items/ratios									
Non interest cost ratios									
All banks	22.05	23.02	23.28	20.46	19.74	20.20	23.75	22.20	24.27
LPCB	20.67	21.83	22.20	19.10	17.90	16.96	23.97	19.96	25.72
MPCB	24.45	20.85	25.22	23.90	24.05	27.59	27.71	29.33	26.99
HPCB	22.03	35.40	23.23	18.42	17.56	15.73	14.35	14.20	13.75
Total cost ratios									
All banks	69.25	73.95	61.37	67.27	69.24	69.49	76.78	70.60	71.20
LPCB	68.45	72.10	60.32	65.21	67.95	68.53	80.07	72.60	77.18
MPCB	68.11	70.85	61.80	68.29	69.56	68.70	72.03	68.54	67.67
HPCB	76.03	92.34	65.34	75.85	74.89	76.16	73.99	68.61	61.14
Return on assets									
All banks	1.63	1.31	2.23	1.91	1.69	1.81	1.14	0.93	0.91
LPCB	1.79	1.39	2.34	2.26	1.92	2.05	1.11	1.03	0.86
MPCB	1.41	1.41	1.92	1.19	1.29	1.98	1.12	0.85	0.45
HPCB	1.53	0.62	2.60	2.30	1.68	0.24	1.36	0.79	2.34
Return on equity									
All banks	21.40	14.64	28.31	25.73	24.59	28.07	21.86	12.81	11.00
LPCB	24.12	15.05	28.36	29.94	28.81	32.78	22.12	20.57	18.75
MPCB	18.10	16.24	28.23	18.50	18.75	30.95	21.12	7.27	3.11
HPCB	18.76	6.96	28.23	23.47	20.88	3.19	22.67	15.96	40.63
"Outputs inputs and other ratios"									
Price of fund									
All banks	6.62	7.31	5.26	6.53	7.45	7.54	6.96	5.97	5.64
LPCB	6.75	7.27	5.31	6.80	7.57	7.89	7.33	6.18	5.68
MPCB	5.91	6.94	4.89	5.49	6.67	6.28	5.56	4.93	5.28
HPCB	8.03	8.75	6.09	8.42	9.04	9.30	8.90	7.67	6.29
Price of Labor									
All banks	0.97	1.36	1.27	0.98	0.91	0.84	0.76	0.55	0.53
LPCB	1.11	1.26	1.32	1.16	1.09	0.98	1.08	0.64	0.73
MPCB	0.78	1.15	1.12	0.82	0.77	0.76	0.53	0.46	0.39
HPCB	1.19	3.08	1.60	0.81	0.80	0.70	0.59	0.61	0.61

Note: author's own calculation based on data of Annual Reports of sample banks.

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APPENDIX B: ESTIMATION RESULTS

B1: Stata results of Stochastic Frontier Approach

```
. xtfrontier logtc logtl logfinv lognoniinc logtbf logpl pf logequity loanprovi
> sion,tvd cost

Iteration 0:   log likelihood =  534.07017  (not concave)
Iteration 1:   log likelihood =  553.57349
Iteration 2:   log likelihood =  555.45392
Iteration 3:   log likelihood =  566.91524
Iteration 4:   log likelihood =   571.7625
Iteration 5:   log likelihood =  572.12755
Iteration 6:   log likelihood =   572.1393
Iteration 7:   log likelihood =  572.13955
Iteration 8:   log likelihood =  572.13955

Time-varying decay inefficiency model           Number of obs      =       286
Group variable: id                              Number of groups   =        36

Time variable: t                                Obs per group: min =         7
                                                               avg =       7.9
                                                               max =         8

                                                Wald chi2(8)       =   6393.90
Log likelihood  =  572.13955                    Prob > chi2        =    0.0000
```

logtc	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
logtl	.1819117	.0501099	3.63	0.000	.0836981	.2801254
logfinv	.0040697	.0166209	0.24	0.807	-.0285068	.0366462
lognoniinc	.0617398	.0180733	3.42	0.001	.0263168	.0971628
logtbf	.7386851	.0582744	12.68	0.000	.6244694	.8529007
logpl	.1863261	.0211779	8.80	0.000	.1448182	.227834
pf	.0474427	.0016052	29.56	0.000	.0442966	.0505887
logequity	-.0050991	.0060218	-0.85	0.397	-.0169016	.0067033
loanprovis~n	.0010231	.0008396	1.22	0.223	-.0006225	.0026687
_cons	-1.31713	.0845337	-15.58	0.000	-1.482813	-1.151447
/mu	.1497406	.0327111	4.58	0.000	.085628	.2138531
/eta	.039846	.0090889	4.38	0.000	.0220321	.0576598
/lnsigma2	-5.738414	.2233769	-25.69	0.000	-6.176225	-5.300604
/ilgtgamma	1.333238	.3039799	4.39	0.000	.7374484	1.929028
sigma2	.0032199	.0007192			.0020783	.0049886
gamma	.7913758	.0501871			.6764376	.8731418
sigma_u2	.0025481	.0007214			.0011342	.0039621
sigma_v2	.0006717	.000061			.0005522	.0007913

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Table B2: Correlates of cost inefficiency scores estimates for DOCBs, FOCBs and SOCBs

Dependent Variable: cost inefficiency score(Cineff)					
Explanatory Variables	Model A		Model B		Model C
	Pooled OLS	FE	Pooled OLS	FE	Pooled OLS
LQASSET	0.0032 (4.17)***	0.0019 (4.43)***	0.0033 (4.76)***	0.0015 (3.53)***	0.0019 (3.26)***
FINVEST	-0.0015 (4.09)***	0.0002 (0.50)	0.0018 (5.22)***	0.0002 (0.40)	0.0013 (4.61)***
STLOAN	0.0004 0.94	-0.0005 (2.00)**	0.0015 (3.98)***	-0.0003 (1.18)	0.0005 (1.71)*
INDLOAN	-0.0003 (1.23)	0.0001 (0.27)	0.0002 (1.04)	0.0002 (1.05)	0.0004 (2.30)
NUMCLIENT	-0.0177 (2.08)**	0.0007 (0.12)	-0.0128 (1.65)*	0.0044 (0.83)	0.0083 (1.22)
EQUITY	-0.0041 (5.04)***	0.0002 (0.44)	-0.0020 (2.54)**	0.0003 (0.61)	-0.0008 (1.28)
LASSET	-0.0354 (2.49)**	-0.0139 (0.78)	-0.0628 (4.72)***	0.0018 (0.10)	-0.0484 (4.41)***
YRBUS	0.0882 (5.23)***	-0.0050 (0.42)	0.0791 (5.17)***	-0.0048 (0.42)	0.0697 (5.22)***
Pshare	…	…	0.125830 (7.84)***	0.1364 (5.04)***	…
LPCB	…	…	…	…	0.0623 (7.68) ***
MPCB	…	…	…	…	0.0718 (8.49) ***
HPCB	… …	…	…	…	0.1360 (14.13)***
y2005	-0.0043 (0.34)	…	-0.0061 (0.53)	…	-0.0095 (0.98)
y2006	-0.0148 (1.15)	…	-0.0107 (0.92)	…	-0.0171 (1.74)*
y2007	-0.0186 (1.40)	…	-0.0143 (1.19)	…	-0.0207 (2.04)**
y2008	-0.0239 (1.72)*	…	-0.0174 (1.39)	…	-0.0215 (2.03)**
y2009	-0.0365 (2.53)**	…	-0.0257 (1.96)*	…	-0.0322 (2.93)***
y2010	-0.0240 (1.53)	…	-0.0134 (0.94)	…	-0.0219 (1.83)*
y2011	-0.0323 (1.96)*	…	-0.0218 (1.46)	…	-0.0241 (1.92)*
Adjusted R square	0.4343	0.9278	0.5378	0.9345	0.6733
F statistic	15.58***	74.19***	21.72***	80.78***	33.62***
Cross section:		36			
Total Panel (unbalanced) observations:		286			

Note: (i) t statistics in parenthesis

(ii) *,**,*** indicate significance at 10%, 5%, and 1% levels, respectively.

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Table B3: Correlates of cost inefficiency scores estimates for DOCBs

Dependent Variable: cost inefficiency score(Cineff)					
Explanatory Variables	Model A		Model B		Model C
	Pooled OLS	FE	Pooled OLS	FE	Pooled OLS
LQASSET	0.0028 (4.50)***	0.0020 (3.56) ***	0.0019 (3.30) ***	0.0018 (3.34) ***	0.0019 (3.35) ***
FINVEST	0.0014 (5.24)***	0.0004 (0.57)	0.0014 (5.49)***	0.0002 (0.33)	0.0014 (5.66)***
STLOAN	-0.0017 (4.47)***	-0.0009 (2.63)***	-0.0011 (2.95)***	-0.0007 (2.15)**	-0.0009 (2.71)***
INDLOAN	-0.0006 (3.40)***	0.0003 (1.12)	-0.0004 (2.10)**	0.0003 (1.48)	-0.0002 (1.01)
NUMCLIENT	-0.0048 (0.68)	-0.0034 (0.52)	0.0034 (0.51)	-0.0010 (0.16)	0.0083 (1.25)
EQUITY	0.0006 (0.48)	0.0007 (0.83)	0.0006 (0.52)	0.0008 (1.07)	-0.0002 (0.16)
LASSET	-0.0380 (2.62)***	0.0423 (1.33)	-0.0267 (1.97)*	0.0321 (1.03)	-0.0253 (1.91)*
YRBUS	0.0956 (6.60)***	-0.0165 (1.18)	0.0775 (5.63)***	-0.0147 (1.07)	0.0858 (6.32)***
Pshare	…	…	0.1367 (5.86)***	0.0920 (2.81)***	…
LPCB	…	…	…	…	0.0190 (2.13)**
MPCB	…	…	…	…	0.0197 (2.14)**
HPCB	…	…	…	…	0.0722 (6.33)***
y2005	-0.0074 (0.72)	…	-0.0092 (0.98)	…	-0.0119 (1.32)
y2006	-0.0179 (1.73)*	…	-0.0192 (1.99)**	…	-0.0230 (2.49)**
y2007	-0.0286 (2.64)***	…	-0.0297 (2.97)***	…	-0.0301 (3.13)***
y2008	-0.0320 (2.81)***	…	-0.0337 (3.20)***	…	-0.0319 (3.16)***
y2009	-0.0521 (4.33)***	…	-0.0497 (4.46)***	…	-0.0509 (4.76)***
y2010	-0.0414 (3.11)***	…	-0.0392 (3.18)***	…	-0.0424 (3.58)***
y2011	-0.0541 (3.91)***	…	-0.0531 (4.15)***	…	-0.0508 (4.11)***
R square	0.7177	0.9272	0.7595	0.9304	0.7812
Adjusted R square	0.6964	0.9099	0.7400	0.9133	0.7611
F statistic	33.72***	53.71***	39.08***	54.70***	38.87***
Cross sections :	27				
Total Panel (unbalanced) observations:	215				

Note: (i) t statistics in parenthesis

(ii) *,**,*** indicate significance at 10%, 5%, and 1% levels, respectively.

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Table B4: Correlates of profit inefficiency scores for DOCBs, FOCBs and SOCBs

Dependent Variable: Profit inefficiency score							
Explanatory Variables	Model A		Model B		Model C		Model D
	Pooled OLS	FE	Pooled OLS	FE	Pooled OLS	FE	Pooled OLS
LQASSET	0.0174 (4.36)***	0.0048 (1.70)*	0.0180 (4.87)***	0.0037 (1.29)	0.0109 (3.09)***	-0.0002 (0.08)	0.0102 (3.29)***
FINVEST	0.0012 (0.62)	0.0029 (0.91)	0.0023 (1.31)	0.0027 (0.87)	-0.0014 (0.83)	0.0022 (0.78)	-0.0025 (1.66)*
STLOAN	0.0032 (1.64)	0.0052 (3.17)***	0.0084 (4.38)***	0.0057 (3.46)***	0.0053 (2.93)***	0.0065 (4.24)***	0.0021 (1.34)
INDLOAN	-0.0038 (3.17)***	-0.0009 (0.67)	-0.0014 (1.19)	-0.0005 (0.38)	-0.0018 (1.75)*	-0.0011 (0.85)	-0.0023 (2.40)**
NUMCLIENT	-0.1975 (4.48)***	0.0240 (0.65)	-0.1740 (4.27)***	0.0337 (0.91)	-0.1468 (3.92)***	0.0217 (0.63)	-0.0753 (2.17)**
EQUITY	-0.0130 (3.13)***	-0.0016 0.56	-0.0031 0.76	-0.0015 0.51	0.0011 0.28	-0.0022 0.81	0.0032 0.96
LASSET	0.3939 (5.37)***	-0.2768 (2.31)**	0.2643 (3.78)***	-0.2363 (1.95)*	0.3979 (5.96)***	-0.2411 (2.16)**	0.4131 (7.10)***
YRBUS	0.1600 (1.84)*	-0.1411 (1.74)*	0.1169 (1.45)	-0.1406 (1.74)*	-0.0513 (0.66)	-0.1274 (1.71)*	-0.0867 (1.21)
Cineff	…	…	…	…	2.1270 (7.24)***	2.7278 (6.46)***	1.0909 (3.49)***
Pshare	…	…	0.0060 (7.06)***	0.3540 (1.87)*	0.0033 (3.83)***	-0.0179 (0.10)	…
LPCB	…	…	…	…	…	…	0.1871 (4.08)***
MPCB	…	…	…	…	…	…	0.4216 (8.66)***
HPCB	…	…	…	…	…	…	0.4664 (7.18)***
y2005	-0.1336 (2.03)**	…	-0.1421 (2.35)**	…	-0.1290 (2.33)**	…	-0.1428 (2.89)***
y2006	-0.1852 (2.79)***	…	-0.1662 (2.71)***	…	-0.1434 (2.55)**	…	-0.1730 (3.44)***
y2007	-0.2339 (3.40)***	…	-0.2135 (3.37)***	…	-0.1830 (3.14)***	…	-0.2149 (4.11)***
y2008	-0.3343 (4.67)***	…	-0.3038 (4.60)***	…	-0.2667 (4.40)***	…	-0.2997 (5.52)***
y2009	-0.4481 (6.02)***	…	-0.3968 (5.76)***	…	-0.3421 (5.38)***	…	-0.3849 (6.75)***
y2010	-0.5243 (6.44)***	…	-0.4739 (6.30)***	…	-0.4454 (6.45)***	…	-0.4751 (7.71)***
y2011	-0.6630 (7.78)***	…	-0.6133 (7.79)***	…	-0.5670 (7.83)***	…	-0.5872 (9.09)***
Adjusted R square	0.5474	0.9029	0.6167	0.9039	0.6782	0.9182	0.7443
F statistic	23.97979	53.99453	29.65774	53.56***	36.337	62.49649	44.659
Cross section :			36				
Total Panel (unbalanced) observations:			286				

Note: (i) t statistics in parenthesis

(ii) *,**,*** indicate significance at 10%, 5%, and 1% levels, respectively.

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Table B5: Correlates of profit inefficiency scores for DOCBs

Dependent Variable: Profit inefficiency score							
Explanatory Variables	Model A		Model B		Model C		Model D
	Pooled OLS	FE	Pooled OLS	FE	Pooled OLS	FE	Pooled OLS
LQASSET	0.0097 (2.30)**	0.0006 (0.16)	0.0009 (0.25)	0.0002 (0.07)	-0.0031 (0.91)	-0.0052 (1.54)	0.0006 (0.19)
FINVEST	0.0000 (0.02)	0.0046 (1.05)	-0.0005 (0.32)	0.0042 (0.96)	-0.0033 (2.17)**	0.0036 (0.90)	-0.0054 (3.52)***
STLOAN	-0.0060 (2.36)**	0.0043 (1.95)*	0.0004 (0.18)	0.0046 (2.09)**	0.0025 (1.23)	0.0067 (3.35)***	0.0008 (0.41)
INDLOAN	-0.0035 (2.90)***	-0.0009 (0.55)	-0.0009 (0.89)	-0.0007 (0.43)	-0.0002 (0.18)	-0.0017 (1.21)	-0.0011 (1.05)
NUMCLIENT	-0.0978 (2.03)**	0.0876 (2.03)**	-0.0113 (0.28)	0.0930 (2.13)**	-0.0183 (0.49)	0.0961 (2.46)***	-0.0454 (1.17)
EQUITY	0.0031 (0.39)	-0.0011 (0.21)	0.0032 (0.50)	-0.0007 (0.14)	0.0020 (0.34)	-0.0032 (0.68)	0.0005 (0.08)
LASSET	0.0289 (0.29)	0.1000 (0.48)	0.1488 (1.84)*	0.0772 (0.37)	0.2030 (2.64)***	-0.0193 (0.10)	0.1973 (2.53)**
YRBUS	0.2560 (2.59)**	-0.0849 (0.92)	0.0648 (0.79)	-0.0808 (0.87)	-0.0925 (1.11)	-0.0366 (0.44)	-0.1450 (1.67)*
Cineff	…	…	…	…	2.0314 (5.10)***	3.0042 (6.53)***	2.6097 (6.25)***
Pshare	…	…	1.4441 (10.41)***	0.2074 (0.94)	1.1664 (8.24)***	-0.0690 (0.34)	…
LPCB	…	…	…	…	…	…	0.1736 (3.29)***
MPCB	…	…	…	…	…	…	0.3953 (7.26)***
HPCB	…	…	…	…	…	…	0.3929 (5.37)***
y2005	-0.1194 (1.72)*	…	-0.1388 (2.48)**	…	-0.1201 (2.27)**	…	-0.1095 (2.07)**
y2006	-0.1369 (1.93)*	…	-0.1498 (2.62)***	…	-0.1109 (2.04)**	…	-0.0993 (1.81)*
y2007	-0.1911 (2.59)**	…	-0.2032 (3.41)***	…	-0.1429 (2.49)**	…	-0.1131 (1.96)*
y2008	-0.2668 (3.43)***	…	-0.2847 (4.54)***	…	-0.2163 (3.57)***	…	-0.1782 (2.95)***
y2009	-0.4063 (4.94)***	…	-0.3812 (5.74)***	…	-0.2802 (4.27)***	…	-0.2442 (3.70)***
y2010	-0.4579 (5.04)***	…	-0.4346 (5.93)***	…	-0.3550 (5.01)***	…	-0.3105 (4.34)***
y2011	-0.5514 (5.83)***	…	-0.5412 (7.10)***	…	-0.4333 (5.79)***	…	-0.3567 (4.74)***
Adjusted R square	0.4789	0.8560	0.6615	0.8559	0.6994	0.8840	0.7001
F statistic	14.11***	32.03***	27.14***	31.27***	30.29***	38.93***	27.29***
Cross section :	27						
Total Panel (unbalanced) observations:	215						

Note: (i) t statistics in parenthesis

(ii) *,**,*** indicate significance at 10%, 5%, and 1% levels, respectively.

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