Effect of managerial ownership on bank value: insights of an emerging economy

Syed Moudud-Ul-Huq and Tanmay Biswas
*Department of Business Administration and Department of Accounting,
Mawlana Bhashani Science and Technology University,
Tangail, Bangladesh, and*
Shukla Proshad Dola
*Department of Business Administration,
Mawlana Bhashani Science and Technology University,
Tangail, Bangladesh*

Abstract

Purpose – This study aims to empirically investigate the effect of managerial ownership on bank value concerning conventional and Islamic bank. The analysis uses a balanced panel data set based on a sample consisting of 480 bank-year observations between 2003 and 2017.

Design/methodology/approach – Ordinary least squares, fixed effect and random effect have been used primarily to examine the relationship between managerial ownership and banks' value. Later, the authors validate the core results by using the generalized linear model.

Findings – This study provides general support for the claim of interest alignment that encourages bank standards with a high level of managerial ownership and partly opposes the view of the entrenchment effects. In addition, the study finds a U-shaped and insignificant relation between managerial ownership and bank value. This indicates that initially, managerial ownership is a blessing, and later, it becomes a curse in considering bank value. Moreover, bank value affects managerial ownership positively both for conventional and Islamic banks.

Originality/value – A good number of studies are available in the current literature, which examine the impact of managerial ownership on either bank performance or risk-taking. However, very few studies are found that examine the bidirectional relationship between managerial ownership and banks' value. Moreover, to the best of authors' knowledge, there is a dearth of literature on this topic that is built on the comparative analysis between conventional and Islamic banks.

Keywords Managerial ownership, Bank value, Generalized linear model (GLM), Conventional bank, Islamic bank

Paper type Research paper

1. Introduction

In today's world, money is spread all around the globe where financial institutions, especially banks, play a pivotal role in the competitive economy through circulating money with matching the demand of both depositors and borrowers. In the most emerging economy, like Bangladesh, the banking sector is growing rapidly and working as the mainstay with the combination of conventional and Islamic banking system, but still, now

the market share of Islamic banks is lower than that of the conventional banks, although the scenario is changing because Bangladesh is one of the largest Islamic states where people are deeply committed to Islamic lifestyles as enshrined in the Holy Quran and the Sunnah. Though there are significant differences between the two banking systems, both are operating in the same banking arena of Bangladesh. The managerial ownership effect on bank value is a very interesting issue in the current context because changing the ownership structure is supposed to resolve the conflict between stakeholders, especially the manager and shareholder. The debate in preceding investigation involving to the role of managerial ownership as an enticement mechanism and its effect on corporate performance that concentrates primarily on the agency problems resulting from the proprietorship theory (i.e. separation of ownership and control) (Berle and Means, 1932) and also the misaligned enticements between managers and shareholders (Jensen and Meckling, 1976).

Though these problems harm the value of firms, managerial ownership is a potential solution to remove the agency conflict between the manager and shareholder (Jensen and Meckling, 1976). On the one hand, managerial ownership can support bringing into line the interest of managers and stockholders by off-putting incentive consumption and engaging in sub-optimal investment policies (incentive alignment effect). On the opposite hand, the higher managerial ownership can cause entrenched consequence where managers incline to exert adequate effort to gain personal advantages, resulting in a negative association between managerial ownership and firm performance (entrenchment effect) (Florackis et al., 2009).

It remains unclear whether managerial ownership matters for company performance in practice. Previous studies have examined the relationship between the firm's ownership structure and its performance, and the evidence is mixed. Core and Larcker (2002), Hermalin and Weisbach (1991), McConnell and Servaes (1990), Morck et al. (1988) highlighted a significant impact of insider ownership on corporate performance. On the other hand, others (Demsetz and Lehn, 1985; Himmelberg et al., 1999) do not identify a meaningful relationship between insider ownership and performance. Morck et al. (1988) and McConnell and Servaes (1990) exclusively realize that a significant nonlinear relationship exists between managerial ownership and firm value. Though the character of this nonlinearity also varies from one analysis to another, in previous studies, managerial ownership was treated as exogenous, and samples of firms from a wide cross-section of industries were used. Nevertheless, numerous studies prove that managerial ownership is endogenous and depends on the firm's external and internal surroundings, like industry, growth, investment opportunities, information asymmetry and business risk (Demsetz and Lehn, 1985). Such features of firms affect managerial ownership, which sequentially affects the value of the firm (Cui and Mak, 2002).

In previous studies, the effect of managerial ownership on bank value was examined, but no comparison was made regarding whether the effect of managerial ownership is the same or different in conventional and Islamic banks. To cover the gap, this study explores how managerial ownership is prevalent and affects the value of conventional and Islamic banks. This study is explored to gather data from a more recent 15-year period (2003–2017) of 32 sample banks along with 26 conventional banks and six Islamic banks operating in Bangladesh. Private commercial banks grasp the leading market share with sound financial stability than that of government commercial and specialized banks. But, government specialized banks are in the worst financial stability than public and private commercial banks, whereas Islamic banks especially "Islami Bank Bangladesh Limited (IBBL)" are in utmost sound financial stability rather than all commercial banks and specialized banks in Bangladesh (Ahmad and Hassan, 2007). However, this study narrowed the gap between a trend of an entrenchment effect and the interest alignment effect to

identify the level of managerial ownership, because the ownership level of management has a significant impact on the value of the firm (Ullah and Shah, 2014; Mishra and Kapil, 2016; Dixon *et al.*, 2017).

To the best of our knowledge, no further research has been done on banks in Bangladesh to analyze the relationship between management ownership and bank value. This paper, thus, contributes in various ways. Firstly, the main contribution of our research to the existing literature is that our research provides the first evidence from Bangladesh that analyzes the value of banks, especially conventional and ownership effects of Islamic bank management. It is difficult to get such evidence from the currently listed banks in Bangladesh due to inadequate data. Secondly, we used the generalized linear model (GLM) to test the effect of managerial ownership on bank value that no one has used before. Thirdly, we worked on these variables, first – EPS and AGE, and they have never been used before to analyze the impact of bank value on managerial ownership. The outcomes of the study indicate that higher managerial ownership causes an entrenchment effect that affects the value of banks (both conventional and Islamic) and causes entrenchment effect, as well as lower managerial ownership, generates interest alignment effect that impacts on the value of banks (both conventional and Islamic).

The rest of the paper is structured in the following way. The related literature is briefly discussed in Section 2. Section 3 discourses institutional settings. Section 4 describes the data and methodology we use in the test. The analysis and findings are presented in Section 5. Finally, the paper is concluded in Section 6.

2. Literature review
The strong relationship between managerial ownership and the firm value was explored by previous studies, and mixed results were obtained.

Managerial ownership was recognized as an effective tool of corporate governance that raised the concerns of stakeholders (i.e. managers and stockholders) (Brickley, *et al.*, 1988; Dixon *et al.*, 2017), as well as managerial ownership exposed a nonlinear and insignificant impact on the value of the firm and the performance of intellectual capital (Noradiva *et al.*, 2016). The biggest threat to corporate governance is the managerial entrenchment effect that may arise from larger managerial ownership could create unbalanced authority over other stakeholders. So, a tradeoff between managerial entrenchment and alignment consequence should be ensured for effective managerial ownership (Mishra and Kapil, 2016). The managerial entrenchment effect could create an agency problem between managers and stockholders. Though managerial ownership is not inextricably related to the theory of agencies and the theory of stewardship (Shan, 2019), from the viewpoint of the agency theory, the conflict of interest between the owner and the manager is considered a principal–agent problem that causes the management to fail to optimize the welfare of the owners (Shleifer and Vishny, 1997). Besides, for regulating agency problems, managerial ownership acts as an internal control tool (Jensen and Meckling, 1976). It has been contended that managerial ownership has a positive relationship with firm performance because agency cost is reduced for aligning the interest of shareholders and managers (Francis and Smith, 1995). However, researchers have also found that high managerial ownership can reduce the value of a firm due to managerial entrenchment effect (DeAngelo and DeAngelo, 1985; Stulz, 1988). The CEO's ownership of shares represents a suitable connection between investor wealth and executive wealth (Loderer and Martin, 1997). Saunders *et al.* (1990) hypothesize that stockholder-regulated banks are encouraged higher risk-taking than management-regulated banks, and the pattern of risk-taking behavior are became more pronounced during times of deregulation. In complying with the theory, it can be concluded that owner-controlled banks show significantly more

risk-taking behavior than managerial-regulated banks. Fahnbrach and Stoolz (2009) examined the dynamics of the management of American firms and their relationship to value change. They found that when companies perform well, managers can significantly reduce their ownership, and companies are more likely to increase their ownership if they are financially limited.

Substantial growth in managerial ownership leads to an increase in Tobin's Q, yet there is no evidence that a massive decrease in managerial ownership leads to a decrease in Tobin's Q. A positive relationship exists between Tobin's Q and managerial ownership for the 0–5% board ownership range; a negative relationship exists in the 5–25% board ownership range; and a positive relationship shows for the above 25% board ownership range for the sample of Fortune 500 firms Morck *et al.* (1988). So, at first, Q increases, then decreases, then again increases. A strong curvature relationship between Tobin's Q and the fraction of shares owned by corporate insiders is found by McConnell and Services (1990) in using a larger sample of firms. They found that Tobin's Q and managerial ownership are connected in an inverted U style, with an inflection point ranging from 40–50%. A significant association is found between managerial ownership and firm performance (Florackis *et al.*, 2009). However, this only occurs at lower levels of managerial ownership (less than 15%). The findings do not lead to clear conclusions about the size of the ownership–performance curve at a higher level of managerial ownership. Chen *et al.* (2003) used ordinary least squares (OLS), and the results at low and high levels of ownership showed "entrenchment" and "interest alignment," respectively. Lower banking performance can occur due to higher managerial ownership (Hirschey, 1999). Thus, evidence has been accumulated to support a hypothesis of "managerial entrenchment" whereby higher levels of managerial ownership result in lower levels of bank performance. Fama (1985) considers the relationship between managerial ownership and firm results to be concave: it involves a positive effect of alignment and then a negative effect of reduction. A significant quadratic relationship between managerial ownership and Q is found by Short and Keasey (1999). In a study, 32 listed companies are selected from the Indonesian Stock Exchange and found that managerial and concentrated ownership had no significant impact on the firm value, but foreign and institutional ownership had a substantial effect on the value of the firm Ferina and Nurcahaya (2014). Moreover, financial performance carries the value of a firm where financial performance measured through return on assets (ROA) and return on equity (ROE) was assessed by ownership structures (e.g. managerial and institutional) and found a considerable positive impact (Gugung *et al.*, 2014). The firm value was measured as the moderating effect of low and high managerial ownership and found a significant negative impact but found positive collaboration between capital structure and managerial ownership in inducing the value of the firm (Susanti, *et al.*, 2017). Highly concentrated managerial ownership firms have a significant positive relation with a diffused number of firms' relationship, as well as highly diffused numbers of firms have a significant negative impact on the value of the firm (Ullah and Shah, 2014).

Several studies found a weak or no causal association between managerial ownership and firm value in recent years. The relationship between acquisition performance and managerial equity holdings are to be examined by a simultaneous equation system and found that managerial ownership does not boost performance, but performance hurts managerial ownership (Loderer and Martin, 1997). Cho (1998) treated managerial ownership, corporate value and investment as endogenous variables and used a three-equation simultaneous equation system. The study found that investment has an impact on corporate value, which in turn affects ownership structure, but from ownership to corporate value, there is no reverse causality. Demsetz and Villalonga (2001) come to a point that there is no effect of ownership structure on Tobin's Q, but Tobin's Q hurts ownership structure using a two-stage least squares (2SLS) method.

Some empirical studies have found that managerial ownership reduces the problem of management myopia, higher management ownership leads to stronger innovation and increased productivity and, in the long term, associated with the value of these firms (Francis and Smith, 1995; Holthausen *et al.*, 1995). Hence, based on previous studies, we develop the following hypotheses:

H1a. There is a positive effect of higher managerial ownership on bank value.

H1b. There is a nonlinear and negative effect of managerial ownership on bank value.

H2. There is a positive effect of bank value on managerial ownership.

3. Institutional settings and comparative analysis

3.1 Institutional settings and uniqueness of the Bangladesh Bank

Bangladesh Bank, the central bank of Bangladesh, was established as per Bangladesh Bank Order, 1972 (P.O. No. 127 of 1972) on December 16, 1971. Bangladesh Bank works for regulating financial systems, formulates monetary and credit policy, manages and regulates, as well as supervises currency issues, foreign exchange reserve, foreign exchange market, financial institutions as well as advising government fiscal and other economic policies along with nine regional offices (Bank, 2015; Ahmed, 2019). As a forward-thinking central bank, Bangladesh Bank is striving for the excellence of developing sound financial management of financial sector oversight, high ethical and skilled professionals to maintain value stability and strengthening the financial system by supporting rapid, broad-based comprehensive economic growth, job creation and poverty alleviation in Bangladesh (Bank, 2015).

3.2 Comparison between conventional and Islamic Banks

Conventional banks are operated and structured in compliance with the Bank Company Act, 1991 (Bangladesh Bank, 2013, May) and Company Act, 1994, with the supervision of Bangladesh Bank. There is a debtor–creditor relationship between clients and banks, and clients get interested in deposits and borrowers to pay interest on loans. But, Islamic banks are operated in Bangladesh based on the decision of the Shariah Supervisory Board and regulated according to the Bank company Act, 1991 (Bangladesh Bank, 2013, May) and Company Act, 1994, in compliance with the Sharia law and the direct supervision of Bangladesh Bank. In the Islamic banking system, Mudarib, Rab-ul-Maal/partners relationship between clients and banks, and clients share profit or loss as a partner (Ahmad and Hassan, 2007).

3.3 Institutional settings of the banking sector in considering the uniqueness of Bangladesh

The banking structure of the world is focusing and comparing the Islamic banking system and the conventional banks due to the failure of large conventional banks (Noman *et al.*, 2015). Though both conventional and Islamic banks are operating in Bangladesh, Islamic banks are in sound financial condition and stability (Ahmad and Hassan, 2007). The interest spread after deducting all operating expenses is denoted as earnings of banks through raising deposits at providing low interest rates from depositors and allocate these funds with charging higher interest rates to the borrowers according to conventional banking theories (Santos, 2001). But Islamic banks do the same without considering predetermined interest on deposit and loan because Islam prohibits interest, so Islamic banks agree to share profit and loss between banks and partners (depositors and borrowers) (Islam and Ashrafuzzaman, 2015). Islamic banks are conducted as per the Shariah law maintaining Islamic principles, objectives, goals and procedures concerning sharing profit and loss, strictly prohibiting the term "interest" that is completely distinct from the conventional banking system. Besides, public Islamic banks

should also follow the financial reporting requirements as per company law and the International Financial Reporting Standard (Lassoued *et al.*, 2018). "Islami Bank Bangladesh Limited" is the first Islamic bank to introduce its operation in Bangladesh in 1983. Islamic banks have been working alongside conventional banks in Bangladesh for around four decades. Islamic and conventional banking performance has been evaluated through conducting several studies where the "Islami Bank Bangladesh Limited (IBBL)" has the best financial stability than all commercial banks and specialized banks in Bangladesh (Ahmad and Hassan, 2007) in considering different indicators like general business measures, efficient management, profitability ratios and social profitability measures to show that the overall performance of Islamic banks is better than conventional banks, despite a few exceptions (Al Mahmud and Islam, 2011; Hossain and Ahamed, 2015). Islamic banks are unable to function with bursting efficiency due to multiple banking systems in the economy where the effectiveness of Islamic banking is lower in several dimensions than the conventional banking framework (Abdul and Sarker, 1999). If Islamic banks had the chance to act as a single system in an economy, it would be better. Nevertheless, the theory does not exactly mention that whether Islamic banks need to be more cost-effective or stable than conventional banks (Beck *et al.*, 2010).

Since its formation, Islamic banks have started to show strong growth, as evidenced by Islamic banking's growing market share in terms of assets, deposit and financing of the overall banking system. Eight Islamic Shariah-based banks are operating in Bangladesh out of 62 scheduled banks. But, the performance of Islamic banks is better than that of other scheduled banks (Ahmad and Hassan, 2007). In 2016, deposits of Islamic Banks were Taka 1,770.7bn, which increased to Taka 2,019.6bn in 2017. The deposits of all banks also increased to Taka 9,874.9bn from Taka 8,933.9bn. In 2017, the credits and investment deposit ratio is also increased compared to 2016. In 2017, Islamic banks' liquidity is decreased to Taka 97.9bn from Taka 113.6bn. A short picture of Islamic banks' performance is presented in Table 1.

4. Data and methodology
4.1 Sample selection and time frame
Our sample comprises 390 observations for conventional banks and 90 observations for Islamic banks, combining a total of 480 bank-year observations and a total of 32 commercial banks.

4.2 Variable description
According to our objective, we have selected two main variables, i.e. bank value and managerial ownership. We have used Tobin's *Q* for bank value, which is denoted by Q, and common shares held by the insiders are used as a proxy for managerial ownership, which is denoted by OWN. We also used managerial ownership squares that are denoted by (OWN^2). We have used bank size (LTA), return on assets (ROA), liquidity (LEQ), the market value of equity (MVE), financial

Year	Types of bank	No. of banks	Deposits (in bn taka)	Credits (in bn taka)	Investment deposit ratio	Liquidity: excess(+)/ shortfall(−)
2016	Islamic	8	1,770.7	1,565.0	86.3	113.6
	All	57	8,933.9	6,739.3	71.9	1,259.5
2017	Islamic	8	2,019.6	1,860.1	87.8	97.9
	All	57	9,874.9	8,106.1	75.9	933.8

Source(s): Annual report of Bangladesh Bank (BB) 2016–2017

Table 1.
Islamic banking sector's comparative position

leverage (LEV), earnings per share (EPS) and age of bank (AGE) as bank-specific control variables. We classify banks for making the comparison by two categories: conventional and Islamic banks. Two dummy variables like conventional bank (CB) variable is equal to one of the bank is conventional, and zero otherwise, and Islamic bank (IB) is equal to one if the bank is Islamic Shariah based, and zero otherwise. The bank-level control variables have been defined and provided their possible signs in different equations in Table 2.

4.3 Descriptive statistics and correlation analysis
Table 3 articulates the descriptive statistics of main variables and bank-level variables for the full sample, conventional bank, and Islamic bank.

We also test the correlation check the collinearity between independent variables. The highest correlation between AGE and LIQ is −0.385 [1]. Therefore, regression models are free from multicollinearity problem (Zheng *et al.*, 2017).

4.4 Model and development of hypothesis
The interest alignment hypothesis asserts that when managers retain little or no equity, managerial shirking, perquisite usage and other non-value-maximizing actions occur. When managers gain more equity stakes in the firm, their interests are aligned with shareholders'

Variables	Symbol	Definition and measures	Impact on bank value	Impact on ownership	Source
Main variables					
Tobin's Q	Q	(Market value of equity + book value of liability)/total assets		+/−	Cui and Mak (2002), Demsetz and Villalonga (2001), Cho (1998)
Managerial ownership	OWN	Common shares held by the insiders	+/−		Florackis *et al.* (2009), McConnell and Servaes (1990), Cui and Mak (2002)
Managerial ownership square	OWN^2	OWN squared	+/−		McConnell and Servaes (1990), Cui and Mak (2002), Chen *et al.* (2003)
Bank-specific control variables					
Firm size	LTA	Natural logarithm of total assets	+/−	+/−	Chen *et al.* (2003), Florackis *et al.* (2009), Rose (2005)
Return on assets	ROA	Profits divided by total assets	+		Chen *et al.* (2003), Doumpos *et al.* (2017)
Liquidity	LIQ		+/−		Cho (1998)
Market value of equity	MVE	Total market value of equity	+	−	Chen *et al.* (2003)
Earnings per share	EPS	Profit divided by outstanding shares of common stock		−	
Financial leverage	LEV	Dividing total earning assets by total debt		−	Shan (2019)
Age of bank	AGE	Years from incorporation to present		−	

Source(s): own research

Table 2.
Variables' definition and sources

Variable	Full sample				Conventional bank				Islamic bank			
	Min	Max	Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	SD
Q	0	3.974	1.0252	0.3051	0	3.974	1.0159	0.31916	0.951	3.14	1.0656	0.23176
OWN	0	100	45.618	24.45	0	100	45.105	26.2185	1.97	100	47.839	14.37997
OWN²	0	10,000	2,677.5	2,641	0	10,000	2,720.1	2,809.61	3.881	10,000	2,493.08	1730.706
LTA	0	14.853	11.321	1.7113	0	14.853	11.29	1.82526	9.295	13.59	11.459	1.084499
ROA	−13.52	6.05	1.243	1.2602	−13.52	6.05	1.2124	1.35384	0.27	3.54	1.3754	0.717483
LIQ	0	1.193	0.8244	0.1232	0	1.115	0.8088	0.12577	0.51	1.193	0.8917	0.083449
MVE	0	252.961	13.354	20.131	0	252,961	12,372	19,561.7	631.46	131.032	17.609	22,047.98
LEV	0.046	1.129	0.9231	0.0753	0.046	1.129	0.922	0.08303	0.87	0.965	0.9277	0.019661
EPS	−881.4	745	27.851	77.905	−881.4	272.43	24.361	64.7741	−16.28	745	42.976	118.498
AGE	2	46	19.41	10.66	2	46	20.5	11.003	2	34	14.67	7.382
Obs.	480				390				90			

Note(s): The table shows the descriptive statistics of variables that have been used in the regression. Where Tobin's Q (Q) and managerial ownership (OWN) are main variables. Firm size (LTA), return on assets (ROA), liquidity (LIQ), market value of equity (MVE), financial leverage (LEV), earnings per share (EPS) and age of bank (AGE) are bank-specific variables. Max = maximum value, Min = minimum value, SD = standard deviation, Obs. = observations

Source(s): own research

Table 3.
Descriptive statistics of variable

interests and are more likely to seek an investment that optimizes firm value (Jensen and Meckling, 1976). However, by following Kole (1996), Chen *et al.* (2003), Zheng *et al.* (2017), Zheng and Moudud-Ul-Huq (2017), Moudud-Ul-Huq *et al.* (2018a, b), Moudud-Ul-Huq (2019a, b), Moudud-Ul-Huq *et al.* (2020), Moudud-Ul-Huq (2020), among others, we also develop simultaneous equation models in considering bank value and managerial ownership as endogenous:

$$Q_{it} = \alpha + \beta_0 \ (\text{OWN}_{it}) + \beta_1 (\text{OWN}_{it})^2 + \lambda_0 \ (\text{LTA}_{it}) + \lambda_1 (\text{ROA}_{it}) + \lambda_2 (\text{LIQ}_{it}) + \lambda_3 \ (\text{MVE}_{it})$$
$$+ \ \varepsilon_{it}$$

(1)

$$\text{OWN}_{it} = \alpha + \beta_0 \ (Q_{it}) + \lambda_0 (\text{LTA}_{it}) + \lambda_1 (\text{MVE}_{it}) + \lambda_2 (\text{LEV}_{it}) + \lambda_3 (\text{EPS}_{it}) + \lambda_4 (\text{AGE}_{it}) + \varepsilon_{it}$$

(2)

where subscript i indicates individual bank and t indicates period. The two endogenous variables are bank value Tobin's $Q(Q_{it})$ and managerial ownership (OWN_{it}). ($\text{OWN}_{it})^2$ is the nonlinear term of managerial ownership. Moreover, bank size (LTA_{it}), profitability (ROA_{it}), liquidity (LIQ_{it}), market value of equity (MVE_{it}), financial leverage (LEV_{it}), earnings per share (EPS_{it}) and age of bank (AGE_{it}) are the explanatory and bank-level control variables. β and λ are coefficients of the regressors. Finally, ε is the disturbance or error term.

4.5 Methodology
To generate the baseline and robust results, we analyze the effect of managerial ownership on bank value both for conventional and Islamic banks using OLS and GLM, respectively. In this study, as there are no issues of heteroskedasticity or multicollinearity, we apply OLS as a baseline estimator to find the simultaneous relationship between managerial ownership and the value of the bank. Later, we also apply GLM to support the main results. GLM is a generalization of a common linear regression model that permits to change in responses through response variable using link function to adjust the predicted value of the change function with containing error distribution model rather than the normal distribution. So, GLM is superior because data are not needed to transform into normal distribution and more flexibility in modeling. The constant variable is not needed if the link function creates a reasonable effect. GLM can be applied to interpret the result of the log-linear and logistic regression model (Wooldridge, 2016).

5. Findings and analysis
The analysis and finding section comprises two subsections. Firstly, it describes the baseline results of Equations (1) and (2), and secondly, it validates the baseline results by using GLM instead of OLS.

5.1 Simultaneous effect of managerial ownership and bank value
5.1.1 The impact of managerial ownership on bank value. This section starts with the OLS analysis. Table 4 reports the results of Equation (1). We also show a fixed and random effect for Equation (1). We document results in considering *Tobin's Q* as dependent variable. In model 1, we include both *OWN* and *OWN²* as the major independent variables. *OWN* holds a positive sign and statistically significant at the 1% level, indicating an interest alignment effect (Florackis *et al.*, 2009; Francis and Smith, 1995; McConnell and Servaes, 1990). The result matches with our hypothesis (H1a) and different from (Chen *et al.*, 2003). The coefficient of OWN 2 is not statistically significant, but negative and similar to the following studies (e.g.

Variable	Full sample (model 1)	OLS Conventional bank (model 2)	Islamic bank (model 3)	Full sample (model 4)	OLS (fixed effect) Conventional bank (model 5)	Islamic bank (model 6)	Full sample (model 7)	OLS (random effect) Conventional bank (model 8)	Islamic bank (model 9)
OWN	0.005*** (3.695)	0.006*** (4.289)	0.006*** (4.154)	0.004*** (3.193)	0.005*** (3.562)	0.005*** (3.562)	0.005*** (3.439)	0.005*** (3.767)	0.005*** (3.767)
OWN^2	−0.000 (−0.710)	−0.000 (−1.389)	−0.000 (−1.161)	−0.000 (−0.914)	−0.000 (−1.228)	−0.000 (−1.228)	−0.000 (−1.201)	−0.000 (1.490)	−0.000 (1.490)
LTA	−0.010** (−2.066)	−0.017*** (−3.392)	−0.012** (−2.424)	−0.023*** (−3.128)	−0.022*** (−3.002)	−0.022*** (−3.002)	−0.038*** (6.071)	−0.037*** (−5.997)	−0.037*** (−5.997)
ROA	0.022** (2.419)	0.020** (2.172)	0.021** (2.273)	0.019** (2.002)	0.018* (1.922)	0.018* (1.922)	0.019** (2.112)	0.018** (2.030)	0.018** (2.030)
LIQ	0.942*** (12.063)	0.911*** (11.837)	0.968*** (12.436)	0.576*** (5.910)	0.625*** (6.316)	0.625*** (6.316)	0.542*** (5.680)	0.583*** (6.026)	0.583*** (6.026)
MVE	0.000*** (14.201)	0.000*** (14.895)	0.000*** (14.543)	0.000*** (16.301)	0.000*** (16.532)	0.000*** (16.532)	0.000*** (15.936)	0.000 (16.130)	0.000 (16.130)
CB		0.016** (4.413)			0.068*** (2.477)			0.059** (2.172)	
IB			0.188*** (3.089)			0.168*** (2.477)			0.159** (2.172)
Adjusted R^2	40.231%	42.473%	41.289%	47.006%	47.593%	47.593%	45.030%	45.4422%	45.442%
No. of observations	480	480	480	480	480	480	480	480	480

Table 4.
Effect of managerial ownership on bank value (OLS)

DeAngelo and DeAngelo, 1985; Hirschey, 1999). This result refers that with the lower stakes of managerial ownership boosts bank value but with higher stakes of such ownership hurts banks' value and *vice-versa and supports the hypothesis* (H1b). From bank-specific control variables, bank size (LTA) bears a negative sign and is statistically significant and implying that with larger the bank size lower the bank value and supports the *"Too big to fail"* proposition. The coefficient of profitability *(ROA)* signifies bank value. The coefficients of liquidity (LIQ) and market value of equity (MVE) signal positively with bank value. Model 2 is identical to model 1 in specification. Additionally, we include conventional bank (CB) and Islamic bank (IB) as dummy variables in models 2 and 3, respectively, where *both variables* hold positive and significant coefficients (Table 4) and implying that regardless the bank types, with the higher engagements of such banks improve bank value.

With few exceptions of coefficients, the models of OLS-fixed effect and OLS-random effect display almost same results and higher adjuster *R*-square indicates the model's explanatory power.

5.1.2 The impact of bank value on managerial ownership. This section also starts with OLS. Table 5 represents the analysis of Equation (2) with OLS. Similar to Equation (1) and taking CB and IB into account in models, we also consider the random effect and fixed effect in Equation (2). Here, we use *OWN* as a dependent variable.

In all models of Table 5, we include Q as the independent variable. In models 1–9, Q carries a positive and significant coefficient at the 1% level. So, bank value has a positive impact on managerial ownership, and the result is similar to McConnell and Servaes (1990) and our hypothesis (H2) but different from Demsetz and Villalonga (2001) who claimed bank value harms managerial ownership. The coefficients of *(LTA), (MVE) and (EPS)* hold negative and significant coefficients, indicating with larger the bank size the managerial ownership stake becomes downsized and *vice-versa*; lower market value of equity boosts managerial ownership and *vice-versa*. On one hand, with higher *EPS*, the proportion of managerial ownership becomes fewer and vice-versa. *LEV* and *AGE* bear positive signs and are statistically significant at the 1% level, indicating that higher (lower) bank age and leverage promote (discourage) managerial ownership. After considering models 2 and 3, it shows a positive (negative) and significant coefficient of *CB (IB)*. This result implies that with higher attachment of conventional bank promotes managerial ownership and lower with the attachment of Islamic bank and *vice-versa*. The rest of the results are quite similar with models 1, 2 and 3.

5.2 Robustness checks [2]
We extend our analysis with the GLM for validating the main results. After regressing equations (1) and (2), almost all variables hold their signs, and the significance of likelihood-ratio (LR) statistics explains the power of the models [3].

6. Concluding remarks and policy implications
By assessing a sample of conventional and Islamic banks, we provide the first evidence for the managerial ownership effect on bank value from Bangladesh. In this paper, we explicitly examine the effect of managerial ownership on bank value, specifically on the value of conventional and Islamic banks by using OLS and GLM analysis. We collect data from 26 conventional banks and six Islamic banks, a sum of 32 banks of Bangladesh. Where our findings differ from those reported by Chen *et al.* (2003) and Shan (2019). The findings exposed that lower managerial ownership has a positive effect, and higher managerial ownership hurts bank value, and in turn, also bank value affects managerial ownership positively both for conventional and Islamic banks. We may summarize our results as

Variable	OLS			OLS (fixed effect)			OLS (random effect)		
	Full sample (model 1)	Conventional bank (model 2)	Islamic bank (model 3)	Full sample (model 4)	Conventional bank (model 5)	Islamic bank (model 6)	Full sample (model 7)	Conventional bank (model 8)	Islamic bank (model 9)
Q	30.037*** (6.982)	31.430*** (7.293)	31.128*** (7.268)	28.714*** (6.371)	29.668*** (6.625)	29.668*** (6.625)	28.325*** (6.351)	29.329*** (6.616)	29.329*** (6.616)
LTA	−1.663*** (−3.026)	−1.607*** (−2.939)	−1.785*** (−3.265)	−2.327*** (−3.181)	−2.427*** (−3.344)	−2.427*** (−3.344)	−2.263*** (−3.434)	−2.426*** (−3.702)	−2.426*** (−3.702)
MVE	−0.000*** (−7.513)	−0.001*** (−7.893)	−0.001*** (−7.945)	−0.000*** (−7.090)	−0.001*** (−7.509)	−0.001*** (−7.509)	−0.000*** (−7.199)	−0.001*** (−7.634)	−0.001*** (−7.634)
LEV	34.272*** (3.979)	37.095*** (4.298)	31.694*** (3.691)	16.612 (1.132)	12.346 (0.845)	12.346 (0.845)	15.440 (1.091)	11.581 (0.822)	11.581 (0.822)
EPS	−0.026** (−1.977)	−0.029** (−2.176)	−0.030** (−2.260)	−0.029** (−2.051)	−0.034** (−2.397)	−0.034** (−2.397)	−0.028** (−2.108)	−0.032** (−2.405)	−0.032** (−2.405)
AGE	0.478*** (4.480)	0.548*** (5.011)	0.561*** (5.131)	0.478*** (4.257)	0.572*** (4.952)	0.572*** (4.952)	0.483*** (4.488)	0.569*** (5.154)	0.569*** (5.154)
CB		6.900*** (2.606)			8.319*** (3.041)			8.229*** (3.017)	
IB			−8.048*** (−2.979)			−8.319*** (−3.041)			−8.229*** (−3.017)
Adjusted R^2	17.197%	18.196%	18.550%	15.612%	17.101%	17.101%	17.530%	18.954%	18.954%
No. of observations	480	480	480	480	480	480	480	480	480

Source(s): own research

Table 5.
Effect of bank value on managerial ownership (OLS)

follows: first, managerial ownership of conventional banks is small compared to an Islamic bank. Second, Islamic banks' Q shows a substantially higher value than conventional bank during the 15 years; the average Q reached a high of 1.07. Third, the OLS results showed "interest alignment" at low levels of managerial ownership and "entrenchment" at high levels of managerial ownership based upon the data. Our results are similar to Morck *et al.* (1988) and McConnell and Servaes (1990). Fourth, although OWN 2 is negatively associated with Q, the relation becomes insignificant when other firm-specific variables are included in the model. Fifth, Q has also a positive effect on managerial ownership in the case of both OLS and GLM. The findings of the study have some distinct implications where higher managerial ownership raises greater voting rights and the question of managerial entrenchment effect that leads to agency problems and decreases the value of the firm and vice-versa. Regulators can mitigate the conflict of interest between managers and owners by imposing rules and regulations to make the financial sector more stable. The interest alignment effect is found in a low level of managerial ownership that eradicates the risk of corporate governance, increases the value of firms and develops employee motivation by offering a compensation plan. The value of banks can be maximized through reducing the voting powers of managers so that it can create opportunities for other stakeholders to influence the financial decision, especially on capital structure. The increased managerial ownership of firms is endogenously influenced by some firm-specific factors, i.e. corporate regulation, environmental stability, the economics of scale and managerial pressure. The limitation of the study is the possible omission of some instrumental variables in methodology, and reverse causality can be explored through adopting a simultaneous equation model using 3SLS. Further research can be conducted on the overall banking sector, including a wider set of data and variables, to view the actual scenario of managerial ownership and firm value.

Notes

1. We preserve the correlation table for brevity.

2. The robust regression results of GLM have been conserved for brevity.

3. To conserve space, we only report the signs and LR statistics.

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Corresponding author
Syed Moudud-Ul-Huq can be contacted at: moudud_cu7@mbstu.ac.bd