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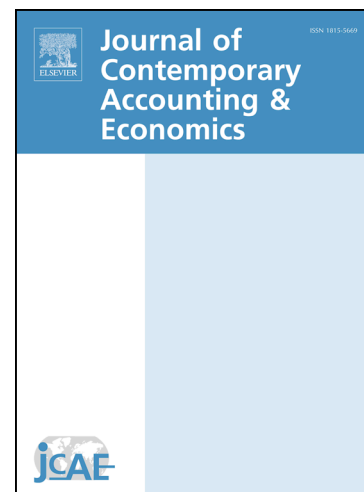
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Financial Inclusion**

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### Abstract

We examine the association between financial inclusion disclosure and firm performance in Bangladeshi banks from 2009 to 2014 in response to a regulatory directive on the engagement of banking firms in financial inclusion activities. We find a positive association between financial inclusion disclosure and banking firms' subsequent performance, with this relationship moderated by market competition and government ownership. We also find evidence that firms' engagement in financial inclusion activities increases their market share, with the disclosure of this information reducing the information asymmetry between managers and capital market participants. The broad implication of our research findings is that firms considering investing in financial inclusion activities could benefit from improved firm performance and gain market share. The research findings contribute to the larger debate on the reasons why firms should consider incorporating these initiatives into their operational activities. In addition, the findings inform various international organisations that promote financial inclusion activities.

**Keywords:** Financial inclusion disclosure, Banking industry, Firm performance, Emerging economy, Stakeholder theory

**JEL classification:** G21, M14, M41, M48

## 1. Introduction

During the last two decades, the business world has witnessed a proliferation of non-financial disclosures (e.g., environmental, social and governance (ESG) disclosures). In many countries, some of these disclosures are mandated. For example, in 2014, the European Commission mandated some aspects of social disclosures for certain large listed firms, with 500 or more employees, operating in the European Union's 28 states (European Commission, 2014). Recently, significant pressure has been exerted on the financial sector for engagement with and disclosure of a particular type of information known as financial inclusion.<sup>1</sup> Nearly two and a half billion people do not currently use financial services, and more than 50 per cent of adults in the poorest households throughout the world are unbanked (World Bank, 2014). As a result, financial inclusion has emerged as an important issue on the global policy agenda for sustainable development (Allen et al., 2016).<sup>2</sup>

It is argued that financial inclusion directly contributes to the economic development of a country (Allen et al., 2016; World Bank, 2014) and that it ensures the efficient allocation of productive resources, thereby reducing the cost of capital (Sarma and Pais, 2011). Several central banks, in both developing and developed countries, have introduced initiatives through engaging their banking sectors to promote financial inclusion in their countries (World Bank, 2014).<sup>3</sup> Consequently, banking firms have allocated a substantial amount of resources to engage in financial inclusion activities and have communicated this information

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<sup>1</sup> Financial inclusion is defined as the course of action that ensures access to, and availability and usage of, formal financial services by all individuals and firms in an economy (Allen et al., 2016; World Bank, 2014).

<sup>2</sup> Eccles and Serafeim (2013) argue that sustainability reporting, including reporting on green programs (e.g., using energy-efficient light bulbs, operating from a platinum-rated Leadership in Energy and Environmental Design (LEED) building, climate change deniers and saving water), is not material when it comes to financial industry firms showing their commitment to sustainability. Instead, social and governance issues and how they relate to their performance are crucial. The authors argue that financial inclusion is one of the most important indicators of social performance for showing the commitment by financial firms to sustainability.

<sup>3</sup> Financial regulators, the government and the banking industry play pivotal roles in financial inclusion-related policy issues. In addition to initiatives by central banks, the International Finance Corporation (IFC), the International Monetary Fund (IMF), the Group of Twenty (G20), the Alliance for Financial Inclusion (AFI) and the Consultative Group to Assist the Poor (CGAP) together are playing an active role at the international level in setting standards to improve financial inclusion.

to various stakeholders including government regulators. Although financial inclusion disclosure can be viewed as part of corporate social responsibility (CSR) disclosures (Eccles and Serafeim, 2013; European Commission, 2001, 2008), it is a new type of non-financial disclosure that has a direct impact on the firm's market-based performance.<sup>4</sup> The reason is that a commitment to financial inclusion includes providing financing/credit facilities to the unbanked population in society through reduced interest rates, even if this is not in line with the firm's business strategy. However, consistent with the resource-based view of the firm, investment by firms in maintaining effective stakeholder relationships through financial inclusion activities should lead to improved firm performance (Hillman and Keim, 2001; Choi and Wang, 2009).<sup>5</sup> Furthermore, the accounting profession has an important role in financial inclusion disclosure as the profession is responsible for the measurement and disclosure of this information (Huang and Watson, 2015). Surprisingly, no research on this new type of social responsibility disclosure was evidenced in the accounting literature. This presents the context for the current study.

In the present study, we investigate a potential gap by examining the impact of the disclosure of firm-level financial inclusion activities on firms' market-based performance in an emerging economy, using the context of Bangladesh. We choose an emerging economy as the importance of financial inclusion is more apparent in emerging and developing economies (World Bank, 2014) in terms of meeting the United Nations' Sustainable Development Goals (SDGs).<sup>6</sup> Bangladesh is chosen as the context for our study as the government of Bangladesh

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<sup>4</sup> The World Business Council for Sustainable Development (WBCSD) (1998, p.3) defines 'corporate social responsibility (CSR)' as "the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large". Financial inclusion is linked with economic development through improvement of the community and society at large.

<sup>5</sup> Investments in stakeholder relations may lead to customer or supplier loyalty, reduced employee turnover or improved firm reputation (Hillman and Keim, 2001; Choi and Wang, 2009).

<sup>6</sup> The United Nations' Millennium Development Goals (MDGs) targeted developing countries, more specifically, the poorest, while the Sustainable Development Goals (SDGs) apply to the entire world regardless

has undertaken various initiatives to support the country's inclusive growth and poverty reduction goals (Belal and Cooper, 2011), with these initiatives aligned with global visions, such as the United Nations' Millennium Development Goals (MDGs) (UNCTAD, 2014). For example, as a forerunner, the central bank of Bangladesh (Bangladesh Bank) issued a directive in 2008 for all banks operating in Bangladesh to engage in financial inclusion activities and to disclose information on such activities in their reporting to the central bank and in their annual reports. Therefore, the Bangladeshi banking sector was one of the first in the world to issue this type of regulatory directive to foster financial inclusion activities. Moreover, the central bank of Bangladesh argues that contributions to financial inclusion activities will provide long-term competitive advantage for banks in Bangladesh (Bangladesh Bank, 2008). This supports the argument that financial inclusion should not be considered merely as the social activities of a firm but should rather be used as a strategic tool to improve overall firm performance. Whether firms' engagement in financial inclusion activities has any impact on their performance is yet to be understood—with regard to both developed and developing countries. These points motivate us to examine the impact of financial inclusion activities on firms' performance. Moreover, firms operating in highly competitive industries are continuously compelled to outperform their peers (Sun and Stuebs, 2013). Firms with a higher level of government ownership may also experience influence on their financial inclusion activities and disclosure as financial inclusion is a priority policy issue for the government of Bangladesh (World Bank, 2014). Considering these points, we examine the moderating roles of market competition and government ownership in the relationship between firm performance and financial inclusion. We also examine the potential benefits that firms can obtain through engaging in financial inclusion activities. Furthermore, the regulatory directive in Bangladesh regarding engagement in financial inclusion activities

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of whether a country is rich or poor. Details on MDGs and SDGs are available at <http://www.un.org/sustainabledevelopment>.

presented an exogenous shock to banking firms, thus offering an excellent experimental setting. This reduces the potential for endogeneity bias that is often present in studies examining the relationship between firm performance and financial inclusion activities' disclosure.

Using a sample of 161 banking firm-year observations from 2009 to 2014, we analyse the impact of the disclosure of financial inclusion activities on banking firms' future performance and examine the roles of market competition and government ownership in moderating this relationship. We create a financial inclusion disclosure index comprising 13 items for quantifying financial inclusion disclosure based on the central bank of Bangladesh's directive. To address simultaneity bias, three-stage least squares (3SLS) regression is applied. We apply lead-lag and two-stage regression approaches to address endogeneity. In the first stage of the two-stage regression, financial inclusion disclosures are regressed on several firm characteristics. The residuals from the first-stage regression are then used as an independent variable in the second-stage regression as a proxy for financial inclusion disclosure. The residuals are considered to be exogenous as they are not determined by firm-specific factors (Gul et al., 2011). To address selection bias, we apply Heckman's (1979) two-stage regression.

As indicated in our results, banking firms with higher levels of financial inclusion activities are more likely to subsequently have improved firm performance. In other words, banking firms undertaking financial inclusion activities can benefit from improved firm performance. The relationship between financial inclusion disclosure and firm performance is found to be moderated by both market competition and government ownership. We also show that firms with higher levels of financial inclusion activities are more likely to have higher market share and face lower information asymmetry. Our findings are robust to a number of statistical tests.

This study contributes to the literature in several ways. Firstly, to the best of our knowledge, this study is the first to explore the impact of financial inclusion activities and disclosures on firm performance. Consequently, our study extends the disclosure literature in accounting by examining a new type of disclosure that enhances the future performance of banking firms. Our financial inclusion disclosure index covers a wide array of information; thus, it can be applied to assess financial inclusion activities in other emerging economies. Secondly, our findings are important for firms considering investment in financial inclusion activities as we document that firms could benefit from their improved performance and gain market share through the reduction of information asymmetry in the market. In addition, our study's findings contribute to the larger debate by providing reasons why banking firms should consider incorporating these initiatives in their operational activities. The findings also inform country-level regulators and the various international organisations that promote financial inclusion activities (e.g., the International Finance Corporation (IFC), the International Monetary Fund (IMF), the Group of Twenty (G20), the Alliance for Financial Inclusion (AFI), the Consultative Group to Assist the Poor (CGAP) and the World Bank). Thirdly, our study contributes to the literature by providing evidence of the role of corporate governance elements and firm-specific control variables in financial inclusion disclosure, an area in which only limited empirical evidence is available. Finally, in the study, we focus on bank-specific social activities' research. Therefore, our study responds to the call by Beurden and Gossling (2008) for industry-specific research on firms' social activities to advance the usefulness of CSR research. Thus, this study also adds to the CSR literature on the banking industry.

The remainder of this paper is structured as follows. Section 2 presents the research context and the institutional background to financial inclusion in Bangladesh. Section 3 presents the theoretical framework, the literature review and hypotheses development.



Section 4 explains the research design of the study. Section 5 provides and discusses the empirical results, while Section 6 explains the sensitivity analyses. The final section concludes the paper.

## **2. Financial inclusion and research context**

### *2.1 Conceptualisation of the term 'financial inclusion' and the necessity for financial inclusion by banks*

An increasing body of evidence shows the strong nexus between financial development and economic growth (Beck et al., 2007, 2008) where it is stated that financial development, through the inclusion of financial services for all people in a country, leads to sustainable economic growth. The reason is that an inclusive financial system ensures the efficient allocation of productive resources through the provision of formal financial services to all citizens including those who are disadvantaged and marginalised. Such a system comprises a platform that educates and stimulates savings and re-investment in many small business initiatives (Gardeva and Rhyne, 2011). Furthermore, this system not only improves the welfare of individuals and households that are poor, but it also reduces their reliance on informal sources of credit (e.g., money lenders) which, as evidence shows, are often exploitative (Sarma and Pais, 2011). Given that an absence of financial inclusion is considered as a barrier to economic development, an all-inclusive financial services system is instrumental for sustainable economic development in any economy irrespective of its developed or emerging status (Beck et al., 2008; Allen et al., 2016). Against this backdrop, a recent report by the World Bank (2016) disclosed that more than 38 per cent of adults worldwide do not use financial services owing to the costs and travel distances: among this proportion of the world's population, nearly half are households in developing countries.

Conceptually, financial inclusion is defined by the Center for Financial Inclusion (CFI) (2009, p.4) as "a state in which all people have access to a suite of quality financial services,

provided at affordable prices, in a convenient manner, and with dignity for the clients". At a minimum, it encompasses savings, credit, insurance and payments to facilitate economic transactions, improve the quality of life, manage day-to-day resources, protect against vulnerability, make productivity-enhancing investments and build economic citizenship (Center for Financial Inclusion (CFI), 2009). Financial inclusion adds benefits to society and the economy as a whole. For example, it has been argued that access to basic financial services can make a considerable positive difference in improving poor people's lives in terms of increasing their savings, enabling them to know how to trade-off between consumption and wealth creation, increasing productive investment and consumption, and empowering poor women (Ardic et al., 2011; Allen et al., 2016). Moreover, access to finance is the main barrier to growth for small and medium-sized enterprises (SMEs) (Beck et al., 2008; Ardic et al., 2011). To illustrate, with access to micro-credit, farmers can invest in greater quantities of farm inputs for crop production or more diverse livestock, or an artisan can acquire more raw materials. As a result, financial inclusion has gradually been positioned as the core priority of the international development agenda for development agencies, and as the development goal for policy makers and at the national level (Ardic et al., 2011). Policy makers in both developed and developing countries have also increasingly recognised that a financial services market that reaches all citizens enables more effective implementation of social policies and development priorities (Beck et al., 2008).

Over recent decades, evidence has shown that different types of financial service providers, such as non-governmental organisations (NGOs), commercial banks, credit card companies, and cooperative and community-based development organisations, have unveiled new possibilities for financially excluded people (World Bank, 2016). For example, in a report prepared by the World Bank, it was stated that more than 50 national-level policy-making and regulatory bodies publicly provided a commitment to support financial inclusion

strategies for their countries during 2013 (World Bank, 2014). Although this issue has attracted the attention of academic researchers, to date, evidence has mainly been reported in the economics literature (for a review, see Burgess and Pande, 2003; Kempson et al., 2004; Beck et al., 2007, 2008; Sarma and Pais, 2011; Allen et al., 2016). Whether commercial banks are adequately engaging and disclosing their financial inclusion initiatives is an important question, the answer to which is yet to be known in the accounting literature.

## *2.2 Bangladesh as the research context: The central bank's initiatives on financial inclusion for the banking industry*

Bangladesh, a British colony for approximately 200 years, is now considered an emerging economy in South Asia. The country shares many institutional features of an emerging economy including: the weak rule of law (Khan, 2003); lack of accountability and transparency (Khan, 2003); and government intervention in business activities (Muttakin et al., 2015). Notwithstanding these issues and considering its strong economic rise and its increasingly active role in the world economy (Goldman Sachs, 2011), Bangladesh has been placed among the “Next Eleven (N-11)” emerging economies and is considered to be one of the global growth-generating countries. Bangladesh has recorded impressive growth and consistent economic development by attaining an annual gross domestic product (GDP) growth rate of more than 6 per cent over the last 10 years, even during the Global Financial Crisis (GFC), and aspires to be a middle-income country by its 50<sup>th</sup> birthday in 2021 (World Bank, 2015). Recently, *The Guardian* (2012), noting Bangladesh's continuous and sustainable economic development, predicted that Bangladesh, along with another 10 countries that were termed “new wave countries” might overtake the West by 2050. This progress could largely be attributed to Bangladesh's growing and export-leading industries, its human capital and, above all, its banking institutions, which serve as the lynchpin in

capital mobilisation.<sup>7</sup> Furthermore, the above-mentioned institutional differences make Bangladesh unique in comparison to other developing countries.

Banking firms' engagement in financial inclusion activities is not mandatory under the existing laws in Bangladesh. Firms can voluntarily engage in such activities and disclose this information. While the adoption of financial inclusion activities is not mandatory, the central bank of Bangladesh considers it to be an additional dimension for assessing a banking firm's management performance (Bangladesh Bank, 2008). Thus, it is expected that the issuance of the 2008 directive would positively influence Bangladeshi banking firms to undertake financial inclusion activities, and that firms with higher levels of engagement in these activities would benefit from both the activities and the additional disclosures. However, to date, no research has been conducted to examine the benefits to firms disclosing information on financial inclusion activities. This situation motivates us to conduct the present study.

### **3. Theoretical framework, literature review and hypotheses development**

Stakeholder theory explains how organisations respond to the demands of their stakeholders to obtain competitive advantage and survival in society (Hill and Jones, 1992). Banks typically provide services to people who can afford them; therefore, the unbanked population does not have access to banking products and services. This creates a social problem: in addition, servicing this group of people could be costly for banks. However, the demand of the unbanked population for these products and services categorises this group as potential customers and an important stakeholder group. Freeman (2010) defines a stakeholder as any group or individual who can affect or is affected by the achievement of the firm's objectives. The unbanked population can be significantly positively affected by the

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<sup>7</sup> The financial system in Bangladesh is mainly controlled by the banking sector with approximately 95 per cent of the financial system's assets under the banking sector's control (Bose et al., 2017a). Furthermore, as of 31 December 2014, banking firms represented approximately 15.35 per cent of total market capitalisation and approximately 70 per cent of the total market capitalisation of the financial institutions of the Dhaka Stock Exchange (DSE), with this being the highest percentage of all other sectors except the telecommunications sector (Dhaka Stock Exchange, 2015).

products and services offered by banks. For example, a farmer, if provided with a low-interest loan facility (a loan which they otherwise could not afford), is likely to be interested in borrowing money to invest in their business.

Firms may focus on the needs of their primary and powerful stakeholders, but their success in doing so is likely to depend on whether they are meeting the needs of other stakeholders (Hillman and Keim, 2001). Moreover, an implicit social contract exists between the firm and those who are affected by its operations (Brown and Deegan, 1998). A social contract thus exists between financial institutions and the unbanked population. Through banks designing the right products and services to meet the needs of the unbanked population can have a profound impact on their lives. In addition, the unbanked population accounts for a major part of Bangladeshi society, and these individuals have implicit claims on banks whose products and services can be of significant benefit to them. According to stakeholder theory, firms that serve the implicit claims of stakeholders enhance company reputation and positively affect firm performance (Freeman, 2010). Several studies have concluded that firms, through stakeholder management, can maintain good relations with stakeholders who are viewed as valuable which, in turn, facilitates firms in gaining and sustaining performance advantage (Hillman and Keim, 2001; Choi and Wang, 2009). Therefore, this study is drawn upon stakeholder theory.

The increasing awareness of financial inclusion activities across the world has led to increased demands from stakeholders, including international organisations and government regulators, for firms to provide additional information about their current activities and future strategies to engage in financial inclusion activities. However, to date, very little is known about the engagement of firms in financial inclusion activities, disclosures of these activities and the impact of these disclosures on firms' performance. The concept of financial inclusion activities falls under the broad definition of CSR-related activities (European Commission,

2001; Bangladesh Bank, 2008; Eccles and Serafeim, 2013); therefore, we chose to focus on the relationship between firm performance and CSR disclosures for this study's literature review.

Many studies in the accounting literature have examined the relationship between CSR disclosures and contemporaneous economic performance; however, these studies have documented mixed results and have focused on environmental disclosures (Saha and Bose, 2017). For example, de Villiers and van Staden (2011) document that economic performance is negatively associated with environmental disclosures reported in the annual report using return on assets (ROA) as a measure of economic performance, while Plumlee et al. (2015) find that the quality of voluntary environmental disclosures is associated with firm value through both cash flow and cost of equity components. Choi et al. (2010), based on their study of Korean firms, show a positive and significant relationship between corporate financial performance and a stakeholder-weighted CSR index. In addition, Cahan et al. (2016) find that unexpected CSR disclosure is positively related to firm value, with Tobin's Q used for measurement.

Financial inclusion is a broad concept that includes: providing financing support to SMEs; financing programs to support farming and co-production activities; providing low-cost or free bank accounts; having a reduced initial deposit and/or low ongoing deposit maintenance requirements; supporting mobile banking activities, etc. These financial inclusion activities are analogous to social activities for the banking firms involved in their facilitation to maintain good relationships with stakeholders. The traditional view of the firm conjectures that firms exist solely to serve the interests of their shareholders through maximising economic efficiency (Friedman, 1970). However, a 'social contract' exists between the firm and the society, as the firm's business is operated within that society. Firms should therefore take into account not only the rights of their investors but also the rights of people within the

society in which they operate. Consequently, a growing number of stakeholders, including the government, have recognised that the engagement of firms in financial inclusion activities is an appropriate and legitimate corporate activity. Furthermore, when governments are constrained through insufficient resources to support the deprived members of society and social welfare projects, business contributions are considered legitimate and appreciated (Dickson, 2003; Wang and Qian, 2011).

Government regulators promote the engagement of the private sector in supporting financial inclusion as it reduces the extent of the governmental burden. Thus, firms can use financial inclusion activities as a strategic move to achieve socio-political legitimacy, with this realised when the government or the general public, including powerful stakeholders, recognises that a firm is acting appropriately and correctly in terms of existing norms and laws (Aldrich and Fiol, 1994; Wang and Qian, 2011). However, gaining the acceptance of stakeholders and the government does not have a direct influence on the financial consequences of financial inclusion activities. The reason is that some key stakeholders, as well as government bodies, control the resources that are critical to the continued viability and success of the firm (Pfeffer and Salancik, 1978). A firm's activities can have an important impact on the firm's performance if they help to address the concerns of the firm's powerful stakeholders, including the government (Frooman, 1999; Wang and Qian, 2011). A firm's contributions to social causes send signals to government bodies that corporate managers are sincere in dealing with their stakeholders (Wang and Qian, 2011). Similarly, a firm's initiatives to address stakeholders' demands can be translated into a market position for the firm (Stanwick and Stanwick, 2013) which supports the achievement of superior performance. Firms' engagement in financial inclusion activities facilitates both the fulfilment of the government's inclusive growth and poverty reduction goals and the satisfaction of the demands of other stakeholders. Therefore, we propose that the engagement

of a firm in financial inclusion activities and the disclosure of these activities would influence a firm's performance. Hence, we hypothesise that:

*H1: Disclosure of financial inclusion activities is positively associated with firm performance.*

Nevertheless, the relationship between financial inclusion disclosure and firm performance can be influenced by various contingency conditions (Luo and Bhattacharya, 2006; Sun and Stuebs, 2013). Studies have argued that the relationship between a firm's social activities and its performance might be influenced as a result of the industry-specific context (e.g., market competition) (Luo and Bhattacharya, 2006; Sun and Stuebs, 2013). Recent research has indicated that, in a competitive industry, a lower level of involvement in social activity programs, such as financial inclusion initiatives, relative to that of competitors and/or the industry, has a negative effect on a firm's performance (Luo and Bhattacharya, 2006; Sun and Stuebs, 2013). This view is consistent with stakeholder theory. As discussed earlier, to be successful and to cope with external competitive challenges, firms must focus on the needs of powerful stakeholders as well as those of other stakeholders. A banking firm's involvement and participation in many social activities to achieve financial inclusion and the disclosure of these activities are an effective way for the firm's managers to improve the firm's community engagement, image, promotion and branding of banking services (Porter and Kramer, 2006). Furthermore, when faced with an environment of stiff market competition, firms will have a tendency to maximise shareholder value by participating in social and community activities to gain competitive advantage by signalling to the market that they not only take care of shareholders' value but also community well-being. Given that not all firms in an industry engage at the same level in financial inclusion activities, these activities not only serve as the mechanism for disclosing to external stakeholders the firm's care for the community, but also enable the firm to be better positioned than its competitors, resulting in increasing its



customer base, community reputation and market share (Porter and Kramer, 2011). Today, external stakeholders demand that, in addition to their goal of profits, businesses should be responsible to their employees, their communities, their societies and to other stakeholders, even if this involvement requires them to sacrifice some profits (Carroll and Buchholtz, 2014).<sup>8</sup> Firms also incur different direct costs (e.g., costs associated with initiating, managing and reporting financial inclusion activities) and indirect costs (e.g., the opportunity cost of forgoing margins on some products to promote financial inclusion) in producing and disclosing information on financial inclusion activities to their stakeholders. Top executives ultimately bear the responsibility of assessing the impact of firms' social activities on the bottom line (Carroll and Shabana, 2010). Therefore, in a strongly competitive business environment, decision makers basically build up a business case that participation in social activities is consistent with the firm's long-term social performance goal that ensures sustainable and solid financial outcomes for shareholders (Porter and Kramer, 2006).

In the context of the banking industry in Bangladesh, it is often argued that commercial banks in Bangladesh perform 'rich people' banking rather than 'mass people' banking leaving marginalised and poor people unattended by banking services. Nevertheless, commercial banks now compete to attract new customers with micro-credit institutions (MCIs) and other small cooperatives as these firms provide similar deposit and credit services to marginalised people and those at the grass roots. Therefore, under financial inclusion programs, commercial banks in Bangladesh now commonly provide banking services to marginalised people in order to compete with MCIs as well as enhancing their own social and community performance. In terms of financial inclusion activities in their social programs,

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<sup>8</sup> These sacrificed profits can be attributed in many ways such as: providing financing/credit facilities to the marginalised population in society through reduced interest rates; providing banking services to regions that are economically unviable from banks' perspectives, but where these services are beneficial for the broader community as a whole; financing an indigenous handicraft business's community at a subsidised rate; maintaining a quota system; financing at a special rate to poor women and those who are disadvantaged when financing small and medium-sized loans; etc.

banks are continuously pressed to outperform their peers. As a result, they are more likely to engage in social activities that could bring not only future benefits by increasing their customer base, community engagement and reputation resulting in increased market share, but also to disseminate details of this performance by its disclosure in their annual reports. On the basis of the above-mentioned arguments and drawing on stakeholder theory, we hypothesise the moderating role of an industry-specific factor, that is, market competition in the relationship between financial inclusion activities' disclosure and firm performance. Specifically, the fit (or the lack thereof) between disclosures of banks' financial inclusion activities and market competition is expected to have an effect on banks' performance. Hence, we hypothesise that:

*H2: Market competition moderates the relationship between disclosure of financial inclusion activities and firm performance.*

Furthermore, government-linked firms are publicly visible as their activities are more apparent to society; therefore, there is a stronger public expectation that government-linked firms will be more conscious of their responsibilities (Ghazali, 2007; Bose et al., 2017b). The goal of the government's initiatives in financial inclusion activities is to improve the level of well-being in society through ensuring all-inclusive growth and poverty reduction programs by taking banking services to the grass-roots level. Government-linked firms experience pressures from society to engage in activities, such as financial inclusion because, through their links to the government, a body trusted by the public, they are required to fulfil its stakeholders' demands and the public's expectations. In the context of voluntary disclosure, Eng and Mak (2003) document that government ownership is positively associated with increased voluntary disclosures. Both Ghazali (2007) and Bose et al. (2017b) provide evidence of the positive and significant impact of government ownership on firms' social activities.

As mentioned earlier, globally more than 50 per cent of adults in the poorest households are unbanked (World Bank, 2014). These people receive their deposit and lending services through alternative channels, such as MCIs, local cooperatives and other cash-converter houses (CGAP, 2017). In the case of Bangladesh, over 60 per cent of the population is yet to access mainstream banking services (World Bank, 2014). In this regard, many MCIs and cooperative associations provide alternative banking and credit facilities to poor and marginalised people. However, in countries with a large population overall, such as Bangladesh, MCIs and cooperatives are not adequate to serve the large population of unbanked people/poor people. Therefore, the government has recently undertaken initiatives with the intention that commercial banks take the lead in financial inclusion services in which marginalised and disadvantaged people will be considered to be under the purview of banking services. At the same time, banks linked to the government or in which the government has a stake are now more inclined to take massive initiatives to implement financial inclusion activities because, the government, on top of its financial goal, has revitalised banks' targets to achieve social goals. Therefore, it is expected that firms with a government stake will play a pioneering role in meeting the government's aspirations through engaging in financial inclusion activities that will also influence privately-owned firms. On the basis of the above-mentioned arguments, we examine the moderating role of government ownership in the relationship between financial inclusion activities' disclosure and firm performance. Hence, we hypothesise that:

*H3: Government ownership moderates the relationship between disclosure of financial inclusion activities and firm performance.*

Figure 1 summarizes the hypothesized relationships.

[INSERT FIGURE 1 ABOUT HERE]

## 4. Research design

### 4.1 Sample and data

Our initial sample includes all banking firms in Bangladesh from 2008 to 2014. We selected 2008 as the initial study year due to the issuance of the directive by the central bank of Bangladesh regarding banking firms' engagement in financial inclusion activities, and the final study year, 2014, as it was the most recent year with available data. The banking industry in Bangladesh included 349 banking firm-year observations from 2008 to 2014.<sup>9</sup> However, we dropped 139 observations as the firms were not listed on the stock exchanges.<sup>10</sup> We also excluded 19 observations as a result of missing stock market data. Due to our lead-lag analysis approach, we excluded 30 observations, as we required one-year-ahead firm performance information. The firm performance data therefore covered the period from 2009 to 2014, while independent variables applied to the period from 2008 to 2013. The final sample includes 30 unique banking firms with 161 banking firm-year observations. Appendix A provides the list of the sample banking firms. Financial inclusion data were collected from the banking firms' annual reports. We collected information on accounting and share market data from the Compustat Global database and corporate governance data from annual reports. The annual reports were also utilised to supplement missing accounting information or information not covered by the Compustat Global database.

### 4.2 Empirical models and variable definitions

Endogeneity and self-selection issues can affect the relationship between financial inclusion activities' disclosure and firm performance. To address these concerns, we follow the lead-lag approach in our regression models. Hypothesis 1 (*H1*) predicts that financial

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<sup>9</sup> Currently, 56 banking firms are operating in Bangladesh, 30 of which are listed on the stock exchanges.

<sup>10</sup> The two stock exchanges in Bangladesh are the Dhaka Stock Exchange (DSE) and the Chittagong Stock Exchange (CSE).

inclusion activities' disclosure leads to better firm performance. We test *H1* by estimating the following regression model:

$$\begin{aligned} TOBINQ_{i,t+1} = & \beta_0 + \beta_1 FII_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 LEV_{i,t} + \beta_4 ROA_{i,t} + \beta_5 LIQUIDITY_{i,t} + \beta_6 FAGE_{i,t} \\ & + \beta_7 FOREIGN_{i,t} + \beta_8 RISK_{i,t} + \beta_9 LNCPAY_{i,t} + \beta_{10} GROWTH_{i,t} + \beta_{11} HHI_{i,t} \\ & + \beta_{12} GOVOWN_{i,t} + \beta_{13} INSTOWN_{i,t} + \sum YEAR_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (1)$$

For testing *H2*, we include the interaction between financial inclusion activities' disclosure and market competition (*HHI*) in Equation (1).<sup>11</sup> The model is as follows:

$$\begin{aligned} TOBINQ_{i,t+1} = & \beta_0 + \beta_1 FII_{i,t} + \beta_2 FII_{i,t} \times HHI_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 LEV_{i,t} + \beta_5 ROA_{i,t} \\ & + \beta_6 LIQUIDITY_{i,t} + \beta_7 FAGE_{i,t} + \beta_8 FOREIGN_{i,t} + \beta_9 RISK_{i,t} + \beta_{10} LNCPAY_{i,t} \\ & + \beta_{11} GROWTH_{i,t} + \beta_{12} HHI_{i,t} + \beta_{13} GOVOWN_{i,t} + \beta_{14} INSTOWN_{i,t} + \sum YEAR_{i,t} \\ & + \varepsilon_{i,t} \end{aligned} \quad (2)$$

For testing *H3*, we include the interaction between financial inclusion activities' disclosure and government ownership (*GOVOWN*), measured by the percentage of shareholdings by the government in Equation (1). The model is as follows:

$$\begin{aligned} TOBINQ_{i,t+1} = & \beta_0 + \beta_1 FII_{i,t} + \beta_2 FII_{i,t} \times GOVOWN_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 LEV_{i,t} + \beta_5 ROA_{i,t} \\ & + \beta_6 LIQUIDITY_{i,t} + \beta_7 FAGE_{i,t} + \beta_8 FOREIGN_{i,t} + \beta_9 RISK_{i,t} + \beta_{10} LNCPAY_{i,t} \\ & + \beta_{11} GROWTH_{i,t} + \beta_{12} HHI_{i,t} + \beta_{13} GOVOWN_{i,t} + \beta_{14} INSTOWN_{i,t} + \sum YEAR_{i,t} + \\ & \varepsilon_{i,t} \end{aligned} \quad (3)$$

where *TOBINQ* is defined as the book value of total assets plus the market value of equity minus the book value of equity divided by total assets (Ferreira and Matos, 2008). To measure the firm's performance, we use the market-based measure, Tobin's Q (*TOBINQ*), as the firm's internal measure of performance can be a source of potential endogeneity (Masulis and Reza, 2015; Bose et al., 2017a). The advantage of focusing on a market-based measure, such as Tobin's Q, is that endogeneity concerns are less problematic as changes in the share price (which is a key input to Tobin's Q) reflect investors' reactions and are forward looking

<sup>11</sup> Market competition is measured by the Herfindahl–Hirschman Index (HHI) multiplied by -1 with higher values indicating greater competition.

(Luo and Bhattacharya, 2006; Cahan et al., 2016). However, Tobin's Q may be biased due to potential measurement error. Therefore, following Ferreira and Matos (2008), we use the natural logarithm of *TOBINQ* and  $-1/TOBINQ$  to address the potential measurement error associated with Tobin's Q. In addition, we use the ratio of loan defaults to total loans (*DEFAULT\_LOAN*) and the proportion of loan write-offs to total loans (*DWO*) as another proxy for firm performance, with this discussed in Section 6 in the sensitivity analyses.<sup>12</sup> The financial inclusion disclosure index (*FII*) is measured by the percentage of financial inclusion items disclosed by a firm.

We include a number of control variables based on prior research. Larger firms are more inclined to make heavy investments and often receive preferential treatment which may increase their performance (Muttakin et al., 2015). Thus, the impact of firm size (*SIZE*) on performance could be either positive or negative. Leverage (*LEV*) affects agency costs and thus influences firm performance (Roll et al., 2009); therefore, we control for leverage (*LEV*). We control for a firm's profitability (*ROA*) as firms with higher profitability may have more favourable investment opportunities which may lead to improved firm performance (Roll et al., 2009). A firm's liquidity is positively associated with firm performance (Roll et al., 2009). We, therefore, control for a firm's liquidity in the model (*LIQUIDITY*). A firm's age may affect its financial performance because a long presence in the market helps a firm to achieve competitive advantage (Wang et al., 2008). Consequently, we control for firm age (*FAGE*). Foreign investors play a monitoring role which influences the performance of a firm (Ferreira and Matos, 2008). Thus, we control for ownership by foreign investors (*FOREIGN*). Adams et al. (2009) find that firm risk is negatively associated with firm performance. Hence, we control for firm risk (*RISK*). Carpenter and Sanders (2002) document that the Chief Executive Officer (CEO)'s total pay is positively associated with firm performance. Hence,

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<sup>12</sup> We thank an anonymous reviewer for suggesting the use of the ratio of default loans to total loans and the proportion of loan write-offs to total loans as a proxy for firm performance.

we control for the CEO's total pay (*LNCPAY*). We control for sales growth (*GROWTH*) due to its influence on firm performance (Bose et al., 2017a). Domestic institutional ownership negatively affects firm performance in emerging markets due to information problems, imperfect contract enforcement, the inability to enforce property rights and flawed regulatory structures (Khanna and Palepu, 2000). Consequently, we control for institutional ownership (*INSTOWN*) in the regression model. Furthermore, we note that in prior studies all of the control variables have been shown to affect a firm's social activities. This provides another rationale for controlling for their potential impact in our regression models. We also control for year effects in all of our regression models. Table 1 provides the description of each variable.

[INSERT TABLE 1 ABOUT HERE]

We apply the ordinary least squares (OLS) regression method to estimate all our models. In these models, all *t*-statistics are corrected using the Huber–White procedure. The potential for multicollinearity is diagnosed with variance inflation factor (*VIF*) obtained using collinearity diagnostics after running each regression. A significant positive coefficient ( $\beta_1$ ) on *FII* in Equation (1) is expected if the main hypothesis (*H1*) is supported. To test the moderating hypotheses, *H2* and *H3*, we analyse the coefficient ( $\beta_2$ ) on the interaction of *FII* and *HHI* in Equation (2) and the coefficient ( $\beta_2$ ) on the interaction of *FII* and *GOVOWN* in Equation (3).

#### 4.3 Financial inclusion disclosure index

We developed an index of disclosure comprising 13 items of information based on the central bank of Bangladesh's directive for quantifying financial inclusion disclosure. This ensures the validity and reliability of the research index (Tauringana and Chithambo, 2015).<sup>13</sup>

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<sup>13</sup> A disclosure index based on information voluntarily disclosed by firms is considered to have lower reliability as managers tend to focus only on areas that fulfil their needs rather than having a genuine desire for

Appendix B provides the list of items included in the financial inclusion disclosure index. We utilise the content analysis technique to quantify financial inclusion disclosure from banking firms' annual reports, with this technique widely used in the disclosure literature (e.g., Tauringana and Chithambo, 2015). Furthermore, we use an unweighted approach for this study.<sup>14</sup> We apply a dichotomous procedure to measure financial inclusion disclosure. A banking firm is awarded a score of 1 if an item is reported in the annual report and 0 if not. The total financial inclusion disclosure index score is then captured for each sample banking firm as a ratio of the total disclosure score, scaled by the maximum possible disclosure score for the firm, with this then expressed as a percentage. A higher value in the financial inclusion disclosure index (*FII*) implies a higher level of financial inclusion activities as multiple occurrences of information relating to financial inclusion activities are captured.

In addition, following prior disclosure index studies (Gul and Leung, 2004; Bose et al., 2017b)<sup>15</sup>, we use Cronbach's alpha coefficient to assess the internal consistency of our financial inclusion disclosure index. The alpha coefficient of our disclosure index is 0.838, indicating that the items included in the disclosure index capture the same underlying construct.<sup>16</sup>

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accountability (Tauringana and Chithambo, 2015). In contrast, a disclosure index based on regulatory guidance is considered more reliable (Tauringana and Chithambo, 2015).

<sup>14</sup> The extant literature on disclosure studies suggests that either a weighted or an unweighted approach can be adopted to quantify the disclosure (Cooke, 1989; Tauringana and Chithambo, 2015). The advantage of an unweighted approach is that each item of disclosure is considered equally as important as the others, and no greater importance is given to any particular user group (Cooke, 1989).

<sup>15</sup> Cronbach's alpha coefficient measures the degree to which the correlation among the items in the disclosure index is attenuated due to random measurement error (Gul and Leung, 2004). An alpha of 0.7–0.8 indicates that, in general, the correlation is attenuated very little by random measurement error (Gul and Leung, 2004).

<sup>16</sup> Bose et al. (2017b) report an alpha coefficient of 0.776 for their green banking disclosure index. Furthermore, to ensure reliability in the data coding, two coders, including one of the authors, completed the content analysis of each annual report independently. For example, the first coder reviewed the entire sample of a banking firm's annual reports and performed the coding process. The second coder then compared the coded data. All disagreements between the coders were ultimately solved through re-analysing the annual reports.



## 5. Results

### 5.1 Descriptive statistics and correlations

Table 2 reports the summary statistics for the variables used in this study. The mean of the financial inclusion index (*FII*) score is 0.302 which implies that banks have engaged and disclosed, on average, 30.20 per cent of the financial inclusion activities listed in our index. The average (median) performance of our sample banking firms, as measured by *TOBINQ*, is 1.092 (1.050). The average (median) size of our sample firms, as measured by the natural logarithm of total assets, is 11.468 (11.525), implying average total assets of Bangladeshi taka (BDT) 118,435 million (US\$1,518.40 million) which is higher than the firm size reported by Khan et al. (2012). The mean (median) value of leverage is 0.929 (0.917). This higher-level leverage ratio is not surprising, as banking firms are highly leveraged. The mean (median) value of profitability, as measured by the return on assets (*ROA*), is 1.20 (1.30) per cent. The mean value of liquidity (*LIQUIDITY*) is 0.042 whereas the natural logarithm of the age of banking firms (*FAGE*) is 2.762. The mean foreign ownership (*FOREIGN*) is 2.50 per cent. The mean risk (*RISK*) of our sample banking firms is 1.079, and the natural logarithm of the CEO's pay (*LNCPAY*) is 2.228. The mean value of growth (*GROWTH*) is 0.248. Furthermore, the average market competition (*HHI*) is -0.042. The government ownership (*GOVOWN*) is 2.50 per cent, which is closer to the average of 3.60 per cent reported by Bose et al. (2017b). The mean percentage of institutional investors' ownership (*INSTOWN*) is 13.60, which is closer to the 13.20 per cent reported by Bose et al. (2017a). The mean value of growth opportunity (*GOP*) is 2.009, implying that our sample firms' future growth opportunities are higher. The average audit committee size (*ACSIZE*) and board size (*BSIZE*) of our sample firms, as measured by the natural logarithm of the total audit committee size and board size, are 1.273 and 2.612, respectively, implying the average audit committee size of 3.66 directors and average board size of 14.36 directors. The average percentage of female

directors on the board (*FEMDIR*) is 11.50. The average percentage of independent members on the board (*BIND*) and audit committee (*ACIND*) is 7.40 and 21.71, respectively.

[INSERT TABLE 2 ABOUT HERE]

Table 3 presents the correlations between the independent variables. The results show that there are no high correlations among all the independent variables except for between *SIZE* and *HHI* which is 0.618. Hair et al. (2010) suggest that correlations between variables below 0.90 do not create any multicollinearity problems. Hence, the correlation between *SIZE* and *HHI* is considered to have less impact on the overall result. We also examine the variance inflation factors (*VIFs*) in our models to further test for multicollinearity. The *VIFs* also reveal no sign of potential multicollinearity. This is confirmed by running collinearity tests after regression. The mean *VIF* of the variables in our firm performance model is 2.61. The *VIF* is considered high if it is greater than 10 (Greene, 2008). The lowest *VIF* for all variables in our firm performance models is 1.18, and the highest *VIF* is 4.91, suggesting that multicollinearity problems are unlikely in our regression models.

[INSERT TABLE 3 ABOUT HERE]

## 5.2 Regression analysis results

Table 4 reports the regression results of our study's firm performance model. In Table 4, Model 2 (Equation [1]), the coefficient of financial inclusion disclosure (*FII*) is positive and statistically significant ( $\beta=0.053$ ,  $p<0.05$ ), supporting a positive relationship between financial inclusion disclosure (*FII*) and subsequent firm performance. This suggests that banking firms with a higher level of financial inclusion activities have higher performance in the subsequent year; thus, the main hypothesis (*H1*) is supported. This finding is also in line with stakeholder theory which asserts that firms' investment in stakeholder relations, in terms of financial inclusion, leads to higher firm performance. We next report the regression results of *H2* in Table 4, Model 3. The coefficient of *FII* is positive and significant ( $\beta=1.214$ ,

$p < 0.05$ ) while the coefficient of *HHI* is negative and significant ( $\beta = -42.234$ ,  $p < 0.01$ ). In contrast, we document that the coefficient of  $FII \times HHI$  is positive and weakly significant ( $\beta = 28.803$ ,  $p < 0.10$ ). Although the level of significance is weak, it provides evidence that while higher market competition reduces firm performance, it has a positive effect on the performance of firms with higher levels of financial inclusion disclosure. In other words, the effect of financial inclusion disclosure on a firm's performance is greater for firms facing higher market competition. This finding is not surprising as higher market competition influences firms to engage in and disclose more social activities, including financial inclusion activities, to outperform their peers. Thus, *H2* is also supported. Next, we report the regression results of *H3* in Table 4, Model 4. We find that the coefficient of *FII* is positive and significant ( $\beta = 0.045$ ,  $p < 0.05$ ) and that the coefficient of *GOVOWN* is negative and significant ( $\beta = -0.305$ ,  $p < 0.01$ ). In contrast, as expected, the coefficient of  $FII \times GOVOWN$  is positive and statistically significant ( $\beta = 0.336$ ,  $p < 0.05$ ) which is consistent with *H3*. These results indicate that, while government ownership generally decreases firm performance, it has a positive impact on the performance of firms with a higher level of disclosure of financial inclusion activities. The results also suggest that when the government has prioritised the policy issue of financial inclusion, firms with a higher level of government ownership are more likely to promote financial inclusion activities that enhance their performance.<sup>17</sup>

As shown in Table 4 and as indicated by the results of control variables from Models 1 to 4, firm size (*SIZE*) and institutional ownership (*INSTOWN*) are negatively associated with firm performance, whereas leverage (*LEV*) and firm age (*FAGE*) are positively associated with firm performance. While the coefficients of most control variables are consistent with

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<sup>17</sup> Our sample includes one state-owned bank, Rupali Bank Ltd. In Bangladesh, state-owned banks are criticised due to their higher amount of default loans. In our main analysis, we included this bank. However, for assessing the robustness of our main findings, we excluded this bank from our analysis. The unreported results indicate that the tenor of our findings did not change due to the exclusion of Rupali Bank Ltd.

our expectations, the negative coefficient of *SIZE* contradicts our expectations but is consistent with the findings of Bose et al. (2017a). Perhaps the reason for the negative relationship between firm size and firm performance is the substitution effect of the disclosure of financial inclusion activities with firm size; that is, firms with financial inclusion activities are larger, as reported by Bose et al. (2017a).

[INSERT TABLE 4 ABOUT HERE]

The explanatory power ( $R^2$ ) of the model with financial inclusion (*FII*) (Table 4, Model 2) is 89.70 per cent. To evaluate the incremental contribution of financial inclusion (*FII*) to the explanatory power of our main regression model (Table 4, Model 2), we follow Gujarati (2003) by repeating our main regression model (Table 4, Model 2), after excluding the main research variable, *FII*. The results from this regression are reported in Table 4, Model 1, indicating that the explanatory power of the regression model decreases to 89.30 per cent. We then compute the *F*-statistic, following Gujarati (2003), using the  $R^2$  statistics reported for the regressions with and without *FII* to test the null hypothesis that the inclusion of *FII* as an explanatory variable does not affect the explanatory power ( $R^2$ ) of our main regression model. Gujarati's (2003) *F*-statistic is 4.99 and significant at 5 per cent, as reported in Table 4, indicating that *FII* significantly increases the explanatory power ( $R^2$ ) of our main regression model. This suggests that a firm's disclosure of financial inclusion activities has an incremental role in assessing the firm's performance.

The OLS regression results of the analysis of the disclosure of financial inclusion activities and bank performance may, however, be biased due to potential simultaneity. While more financial inclusion activities create better relationships with key stakeholders that may help improve overall operations, banks with superior performance may have slack resources that allow them to devote more resources to increase their financial inclusion activities (Waddock and Graves, 1997). As a result, the relationship between firm performance and financial

inclusion activities may have a simultaneity bias. We address this concern using two equations. In the first equation, we develop a model based on the determinants of financial inclusion activities' disclosure.<sup>18</sup> In the second equation, we use Equations (1), (2) and (3), respectively, and then estimate two equations in a simultaneous equations framework using three-stage least squares (3SLS) analysis with Table 5 reporting the results. The results show that the relationship still holds after considering the simultaneous relationship between the level of a firm's financial inclusion activities and firm performance.

[INSERT TABLE 5 ABOUT HERE]

Overall, we find evidence consistent with *H1* that the degree of financial inclusion activities is positively associated with firm performance; with *H2* that the relationship between financial inclusion activities and firm performance is moderated by market competition; and with *H3* that the relationship between financial inclusion activities and firm performance is moderated by government ownership.

### 5.3. Additional analysis

This section provides evidence of the benefits which, arguably, firms may enjoy through investing in financial inclusion activities. Specifically, we focus on two types of benefit: increased market share and reduced information asymmetry as both attributes contribute to increasing the banking firm's performance.

#### 5.3.1 Financial inclusion disclosure and market share

In the market, firms struggle to increase even a small percentage of their market share. Corporate managers are more likely to be encouraged to invest in social activities given that their firm's social record increases market share (Owen and Scherer, 1993) which

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<sup>18</sup> We use firm size (*SIZE*), leverage (*LEV*), profitability (*ROA*), liquidity (*LIQUIDITY*), firm age (*FAGE*), growth opportunities (*GOP*), audit committee size (*ACSIZE*), audit committee independence (*ACIND*), board size (*BSIZE*), board independence (*BIND*) and female directors (*FEMDIR*) as determinants of the firm's financial inclusion activities. We follow the extant literature on CSR to discover the determinants of financial inclusion disclosure (Khan et al., 2012; Bose et al., 2017b). The descriptions of these latter variables are presented in Table 1.

consequently contributes to increased firm performance. Prior studies document that customers consider a firm's social activities when making their purchase decisions (e.g., Luo and Bhattacharya, 2006; Servaes and Tamayo, 2013). Extending this argument, we examine whether banking firms' financial inclusion activities increase market share. We use the following model to test the association between market share and financial inclusion activities' disclosure:

$$\begin{aligned}
 MKTSHARE_{i,t+1} = & \beta_0 + \beta_1 FII_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 LEV_{i,t} + \beta_4 ROA_{i,t} + \beta_5 LIQUIDITY_{i,t} \\
 & + \beta_6 FAGE_{i,t} + \beta_7 FOREIGN_{i,t} + \beta_8 GOP_{i,t} + \beta_9 RISK_{i,t} + \beta_{10} GOVOWN_{i,t} \\
 & + \beta_{11} SPREAD_{i,t} + \sum YEAR_{i,t} + \varepsilon_{i,t}
 \end{aligned} \tag{4}$$

where *MKTSHARE* is the market share of banking firms which is computed based on total revenue. All other variables are as described in Section 4.2.<sup>19</sup> Table 6, Model 1, presents the regression results. The coefficient of financial inclusion disclosure (*FII*) is positively significant with market share, implying that the disclosure of financial inclusion activities positively influences the banking firm's market share. The control variables in Table 6, Model 1, when significant, have the predicted signs. Overall, a firm's disclosure of financial inclusion activities increases the firm's market share through attracting customers, consequently contributing to better firm performance.

[INSERT TABLE 6 ABOUT HERE]

### 5.3.2 Financial inclusion disclosure and information asymmetry

Voluntary disclosure reduces information asymmetry between informed and uninformed investors (Bushman and Smith, 2001). In a voluntary disclosure setting, firms have discretion in choosing what to disclose based on their needs. However, regulators reduce the information gap between informed and uninformed investors through creating disclosure requirements (Healy and Palepu, 2001). Prior to the central bank of Bangladesh's directive in

<sup>19</sup> We also run the correlation matrix for the market share model. The unreported results show that the model has no multicollinearity concerns.

2008, some investors were better informed than others about financial inclusion activities due to lower information acquisition costs. This signalled a higher level of information asymmetry in the market. However, increased disclosure may facilitate the reduction of the information gap for uninformed investors relative to more informed investors. Consequently, we examine whether financial inclusion disclosure reduces information asymmetry in the market, based on the following model:

$$SPREAD_{i,t+1} = \beta_0 + \beta_1 FII_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 ROA_{i,t} + \beta_4 LIQUIDITY_{i,t} + \beta_5 LNPRICE_{i,t} + \beta_6 PROA_{i,t} + \sum YEAR_{i,t} + \varepsilon_{i,t} \quad (5)$$

where *SPREAD* is the annual average of the daily closing bid–ask spread as a percentage of the daily closing price. We used two measures of *SPREAD*: *SPREAD1* is the annual average of the daily closing bid–ask spread as a percentage of the daily closing price, following Ali et al. (2007); and *SPREAD2* is the yearly median of the daily quoted spreads, measured at the end of each trading day as the difference between the bid and ask price divided by the midpoint annual average of the daily closing bid–ask spread as a percentage of the daily closing price, following Daske et al. (2008). *SIZE* and *LIQUIDITY* are included in the model as larger firms and those whose shares are more frequently traded in the market have less information asymmetry (Ali et al., 2007). We also control for share price (*LNPRICE*) as fixed-order costs are spread across more dollars in stocks that have a higher price: consequently, the percentage spread is lower for these stocks (Ali et al., 2007). *LNPRICE* is the natural logarithm of the banking firm’s stock price at the beginning of the fiscal year. Finally, we control for *ROA* and *PROA* to control for the effects of profitability on information asymmetry. *PROA* is the average of the previous five (5) years’ earnings before extraordinary items divided by the average of the previous five (5) years’ total assets, while *ROA* is described in Section 4.2.<sup>20</sup>

<sup>20</sup> We also run the correlation matrix for the information asymmetry model. The unreported results show that the model has no multicollinearity concerns.

Table 6, Models 2 and 3, present the regression results. The coefficient of financial inclusion disclosure (*FII*) is negatively significant in both information asymmetry proxies, implying that the disclosure of financial inclusion activities reduces a firm's information asymmetry. This supports the prediction that regulators' pressure, in terms of additional disclosure requirements, reduces information asymmetry in the market. The control variables in Table 6, Models 2 and 3, when significant, have the predicted signs. Overall, a firm's disclosure of financial inclusion activities reduces information asymmetry in the market, consequently contributing to better firm performance.

## 6. Sensitivity analyses

We test the robustness of our results using a number of additional analyses. Firstly, in our firm performance model, we use different proxies for firm performance. Tobin's Q may be a biased performance measure due to potential measurement error; therefore, to address this concern, following Ferreira and Matos (2008), we replace Tobin's Q (*TOBINQ*) with the natural logarithm of *TOBINQ* and  $-1/TOBINQ$ . Our unreported results remain qualitatively similar to those reported in Table 4. As our sample focuses on banking firms, we use the ratio of loan defaults to total loans as another alternative proxy for firm performance. As expected, the unreported results show that the disclosure of financial inclusion activities is negatively associated with a firm's default loans. This indicates that firms with a higher level of financial inclusion disclosure are more likely to have a lesser amount of loan defaults. This implies that firms with a higher level of financial inclusion activities are more socially responsible, resulting in a higher loan recovery rate. For this reason, the loan default ratio of these firms is lower. In relation to our moderating hypotheses, as expected, we find that government ownership negatively moderates the relationship between firm performance and financial inclusion disclosure. However, *H2*, which hypothesised the moderating role of market competition in the relationship between financial inclusion disclosure and firm



performance, is not supported. We document a positive but weakly significant coefficient of  $FII \times HHI$  which contradicts our main findings. It is possible that market competition influences banking firms to generate a higher amount of default loans through encouraging loans to non-viable sectors. Consequently, in the presence of higher market competition, financial inclusion activities are unable to improve a firm's default loan conditions. Furthermore, we use another proxy for firm performance which is the proportion of loan write-offs to total loans. Using this alternative proxy, we document support only for  $H3$ .

Secondly, endogeneity and self-selection bias could affect our results in the firm performance model. We use a lead-lag approach in our main research models to control the endogeneity issues (Dhaliwal et al., 2011). In addition, we employ two-stage regression that also addresses endogeneity. In the first stage, we estimate the determinants of financial inclusion activities' disclosure. The residuals from this first-stage regression ( $FII\_RESID$ ) are used as the independent variable in our second-stage regression models, namely, Equations (1), (2) and (3), respectively. The residuals are considered as exogenous as they are not determined by firm-specific factors (Gul et al., 2011). To estimate the first stage, we use the same variables mentioned in Footnote 18. The unreported results from the second stage indicate: a positive and significant coefficient of the residuals of  $FII\_RESID$  in Equation (1); a negative and significant coefficient of the interaction term of  $FII\_RESID \times HHI$  in Equation (2); and a positive and significant coefficient of  $FII\_RESID \times GOVOWN$  in Equation (3). These results suggest that our findings remain robust after controlling for endogeneity bias in our analysis.

Although many banking firms in Bangladesh now disclose financial inclusion activities in their annual reports due to perceived pressure from the central bank, some firms still do not disclose any information, with this possibly creating self-selection bias. In our third additional analysis, to address self-selection bias, we use Heckman's (1979) two-stage

regression approach. In the first stage, we model the determinants of disclosure decisions about financial inclusion activities using a probit regression. In the second stage, we run an OLS regression of firm performance on financial inclusion activities' disclosure while including the inverse Mills ratio (*IMR*), derived from the first-stage regression, and other control variables. For the first-stage regression, our dependent variable is a dummy variable for whether firms disclose financial inclusion activities (*FII\_DUM*) in their annual report. In the first stage, the independent variables are: the industry average financial inclusion activities' disclosure score (*FII\_IND*); firm size (*SIZE*); leverage (*LEV*); profitability (*ROA*); liquidity (*LIQUIDITY*); firm age (*FAGE*); growth opportunities (*GOP*); female directors (*FEMDIR*); board size (*BFSIZE*); board independence (*BIND*); audit committee size (*ACSIZE*); and audit committee independence (*ACIND*). We compute the inverse Mills ratio (*IMR*) from this stage and include it as an additional control variable in our second-stage OLS regression models. The inverse Mills ratio (*IMR*) is used in the second-stage model to control for sample selection bias. We use a banking industry average of financial inclusion activities' disclosure scores (*FII\_IND*) in the first-stage model as an exclusion restriction, arguing that industry pressure to engage in financial inclusion activities may influence the current year's financial inclusion activities (*FII\_DUM*), but it does not influence the subsequent year's firm performance. We also test the strength of *FII\_IND* by partial correlation, with a value of 12.46 per cent and statistically significant at the 1 per cent level. Therefore, *FII\_IND* serves as an appropriate exclusion restriction in performing Heckman's (1979) procedure. Our second-stage OLS models are Equations (1), (2) and (3) but with the inclusion of *IMR* as a new variable. As our untabulated test results show, sample selection bias does not qualitatively affect our main results.

## 7. Conclusion

In this study, we examine the association between financial inclusion disclosure and firm performance using the setting of an emerging economy, the case of Bangladesh. We find that disclosure of financial inclusion activities is positively associated with firm performance, and that this positive association is moderated by market competition as well as government ownership. In addition, we find that banking firms' engagement in financial inclusion activities increases their market share and reduces information asymmetry in the market. Given that financial inclusion activities contribute to enhancing firm performance, this result suggests that increasing market share and reducing information asymmetry act as a mechanism that contributes to increasing firm performance. Our study contributes to the literature on the firm performance effects of non-financial information based on banking industry-specific financial inclusion disclosure. Furthermore, the results of our study show that bank managers should be informed about the overall effects of their engagement in financial inclusion activities. Shareholders, analysts and investment managers should understand that firm performance is affected by a firm's financial inclusion disclosures. The findings of our study also contribute to the larger debate on the reasons why banking firms should consider incorporating these initiatives in their operational activities. Furthermore, our findings inform country-level regulators and various international organisations that promote financial inclusion activities about the benefits of firm-level financial inclusion activities.

Like all research, this study has some limitations. Firstly, our financial inclusion disclosure index only captures the government of Bangladesh's recommended areas of financial inclusion activities' disclosure; however, banking firms may engage in other types of financial inclusion activities. Secondly, although a number of determinants of financial inclusion are included in our three-stage least squares (3SLS) regression, it is possible that we have missed some important factors that simultaneously determine the level of financial

inclusion activities and firm performance. Therefore, our analysis may suffer from omitted variable bias. Thirdly, we use only stock exchange-listed banking firms, leading to a limited sample size. Future research in this area could investigate both stock exchange-listed and non-listed banking firms as financial inclusion activities are equally applicable to both types of banks. Although our findings show that financial inclusion activities affect information asymmetry and market share, future research could explore whether they affect stakeholder sentiment.

Despite these limitations, our findings provide theoretical and empirical support for the beneficial role of financial inclusion and add to the growing body of financial inclusion literature that explore the benefits of banking firms' engagement in financial inclusion activities.

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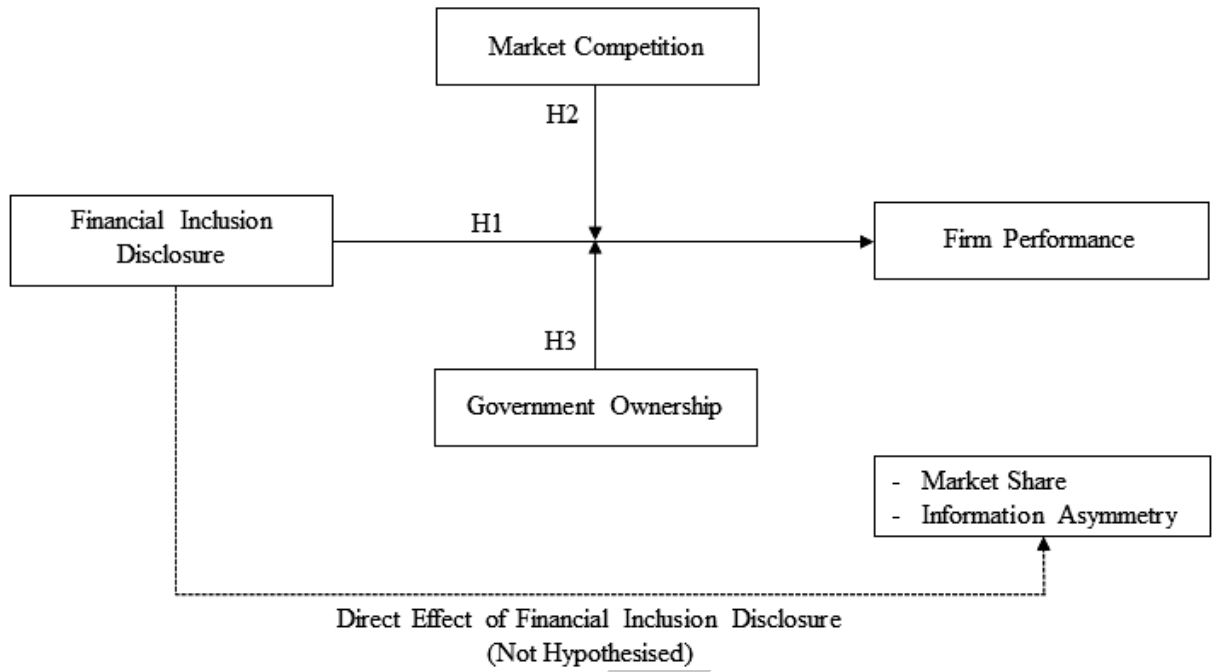


Figure 1: Hypothesised relationships

**Table 1**

Description of variables.

<b>Notation</b>	<b>Variable Name</b>	<b>Description</b>
<i>TOBINQ</i>	Firm performance	Sum of the book value of total assets plus market value of equity minus the book value of equity divided by total assets.
<i>FII</i>	Financial inclusion disclosure index	Financial inclusion disclosure scores/index.
<i>SIZE</i>	Firm size	Natural logarithm of total assets.
<i>LEV</i>	Leverage	Ratio of total debt scaled by total assets.
<i>ROA</i>	Profitability	Ratio of income before extraordinary items divided by total assets.
<i>LIQUIDITY</i>	Liquidity	Average monthly share trading volume relative to total number of shares outstanding.
<i>FAGE</i>	Firm age	Natural logarithm of the number of years since the firm's inception.
<i>FOREIGN</i>	Foreign exposure	Percentage of shares owned by foreign investors.
<i>RISK</i>	Firm risk	Market-model beta computed from daily stock returns.
<i>LNCPAY</i>	CEO's pay	Natural logarithm of the total amount of payments to CEO.
<i>GROWTH</i>	Firm's growth	Percentage change in annual revenue.
<i>HHI</i>	Market competition	Herfindahl–Hirschman Index (HHI) is computed by summing the squares of market shares of all firms in the banking industry. The market share of a firm is computed by dividing the total amount of revenue of a firm by the total amount of revenue of all firms in the banking industry. We multiply <i>HHI</i> by -1 where higher values indicate greater competition.
<i>GOVOWN</i>	Government ownership	Percentage of shareholding by the government.
<i>INSTOWN</i>	Institutional ownership	Percentage of shareholding by institutional investors.
<i>GOP</i>	Growth opportunities	Market-to-book ratio of equity.
<i>ACSIZE</i>	Audit committee size	Natural logarithm of the total number of members on the audit committee.
<i>ACIND</i>	Audit committee independence	Ratio of total independent members on the audit committee relative to total members.
<i>BSIZE</i>	Board size	Natural logarithm of the total number of members on the board.
<i>BIND</i>	Board independence	Percentage of independent members on the board.
<i>FEMDIR</i>	Female director	Percentage of female directors to total directors on the board.
<i>MKTSHARE</i>	Market share	Percentage of market share based on total revenue.
<i>SPREAD</i>	Information asymmetry	Annual average of the daily closing bid–ask spread as a percentage of daily closing price.
<i>LNPRICE</i>	Share price	Natural logarithm of share price.
<i>PROA</i>	Prior return on assets	Average of prior 5 years' earnings before extraordinary items divided by the average of prior 5 years' total assets.

**Table 2**

Descriptive statistics.

Variable	<i>N</i>	Mean	Std. Dev.	Median
<i>FII</i>	161	0.302	0.275	0.308
<i>TOBINQ</i>	161	1.092	0.163	1.050
<i>SIZE</i>	161	11.468	0.598	11.525
<i>LEV</i>	161	0.929	0.095	0.917
<i>ROA</i>	161	0.012	0.015	0.013
<i>LIQUIDITY</i>	161	0.042	0.064	0.006
<i>FAGE</i>	161	2.762	0.398	2.708
<i>FOREIGN</i>	161	0.025	0.081	0.000
<i>RISK</i>	161	1.079	0.362	1.048
<i>LNCPAY</i>	161	2.228	0.382	2.315
<i>GROWTH</i>	161	0.248	0.160	0.237
<i>HHI</i>	161	-0.042	-0.001	-0.041
<i>GOVOWN</i>	161	0.025	0.119	0.000
<i>INSTOWN</i>	161	0.136	0.119	0.135
<i>GOP</i>	161	2.009	1.545	1.795
<i>ACSIZE</i>	161	1.273	0.223	1.099
<i>ACIND</i>	161	0.217	0.172	0.250
<i>BSIZE</i>	161	2.612	0.335	2.639
<i>BIND</i>	161	0.074	0.076	0.067
<i>FEMDIR</i>	161	0.115	0.125	0.091
<i>MKTSHARE</i>	161	0.034	0.016	0.031
<i>SPREAD</i>	160	0.032	0.006	0.032
<i>LNPRICE</i>	161	4.712	1.626	4.202
<i>PROA</i>	115	0.011	0.017	0.014

This table reports the descriptive statistics of all variables included in our research models. *N* represents the number of observations. Std. Dev. is the standard deviation. All variables are defined in Table 1.

**Table 3**

Pearson's correlation matrix.

	<i>FII</i>	<i>SIZE</i>	<i>LEV</i>	<i>ROA</i>	<i>LIQUIDITY</i>	<i>FAGE</i>	<i>FOREIGN</i>	<i>RISK</i>	<i>LNCPAY</i>	<i>GROWTH</i>	<i>HHI</i>	<i>GOVOWN</i>	<i>INSTOWN</i>	<i>VIF</i>
<i>FII</i>	1.000													2.17
<i>SIZE</i>	0.402***	1.000												3.95
<i>LEV</i>	-0.059	-0.271***	1.000											4.91
<i>ROA</i>	-0.034	0.305***	-0.533***	1.000										4.68
<i>LIQUIDITY</i>	-0.345***	-0.361***	-0.156**	0.186**	1.000									2.00
<i>FAGE</i>	-0.034	0.444***	0.081	-0.138*	-0.089	1.000								1.82
<i>FOREIGN</i>	-0.117	-0.125*	0.239***	-0.452***	-0.034	0.071	1.000							1.27
<i>RISK</i>	-0.271***	-0.118*	-0.119*	0.230**	0.189***	-0.006	-0.008	1.000						2.60
<i>LNCPAY</i>	0.164**	0.368***	-0.118*	0.029	-0.319***	0.122*	0.023	-0.081	1.000					2.21
<i>GROWTH</i>	-0.204***	-0.036	-0.194***	0.233***	0.191***	-0.227***	-0.007	0.216***	0.069	1.000				1.45
<i>HHI</i>	0.538***	0.618***	0.012	-0.023	-0.480***	0.293***	-0.129**	-0.199***	0.525***	-0.300***	1.000			4.46
<i>GOVOWN</i>	-0.050	0.061	-0.050	-0.067	-0.019	0.263***	-0.070	0.124*	-0.529***	-0.070	-0.038	1.000		1.78
<i>INSTOWN</i>	0.195***	-0.036	0.105	-0.039	-0.174**	-0.032	0.004	-0.149**	0.059	-0.239***	0.065	-0.237***	1.000	1.18

This table reports the Pearson's correlation matrix for the firm performance model's explanatory variables. All variables are defined in Table 1.

\*\*\* Significance at the 1% level.

\*\* Significance at the 5% level.

\* Significance at the 10% level.

**Table 4**

OLS regression results of financial inclusion disclosure and firm performance.

Variable	Pred. Sign	Dependent Variable = <i>TOBINQ</i>			
		Model 1	Model 2	Model 3	Model 4
<i>FII</i>	+		0.053** (2.277)	1.241** (2.018)	0.045** (2.017)
<i>FII</i> × <i>HHI</i>	?			28.803* (1.925)	
<i>FII</i> × <i>GOVOWN</i>	?				0.336** (2.594)
<i>SIZE</i>	?	-0.047*** (-2.838)	-0.053*** (-3.215)	-0.053*** (-3.191)	-0.050*** (-3.008)
<i>LEV</i>	+	1.072*** (9.198)	1.086*** (9.993)	1.094*** (10.010)	1.164*** (10.758)
<i>ROA</i>	+	-1.009 (-1.233)	-0.871 (-1.136)	-0.827 (-1.078)	-0.459 (-0.560)
<i>LIQUIDITY</i>	+	-0.006 (-0.055)	-0.029 (-0.274)	-0.042 (-0.400)	-0.037 (-0.349)
<i>FAGE</i>	+	0.089*** (6.128)	0.099*** (6.140)	0.098*** (6.007)	0.098*** (6.149)
<i>FOREIGN</i>	+	0.118 (1.337)	0.113 (1.427)	0.117 (1.547)	0.112 (1.388)
<i>RISK</i>	-	0.051 (1.384)	0.057 (1.519)	0.055 (1.501)	0.061 (1.608)
<i>LNCPAY</i>	+	-0.003 (-0.179)	0.001 (0.032)	0.004 (0.204)	0.002 (0.130)
<i>GROWTH</i>	+	-0.013 (-0.413)	-0.009 (-0.281)	-0.011 (-0.339)	-0.004 (-0.133)
<i>HHI</i>	?	-28.509*** (-3.848)	-36.136*** (-4.206)	-42.234*** (-4.261)	-36.042*** (-4.141)
<i>GOVOWN</i>	?	-0.203** (-2.429)	-0.210*** (-2.673)	-0.208** (-2.591)	-0.305*** (-4.174)
<i>INSTOWN</i>	-	-0.070** (-2.026)	-0.087** (-2.315)	-0.088** (-2.339)	-0.083** (-2.229)
Constant	?	-0.855* (-1.724)	-1.186** (-2.296)	-1.456** (-2.548)	-1.291** (-2.471)
Year Fixed Effects		YES	YES	YES	YES
Observations		161	161	161	161
$R^2$		0.893	0.897	0.898	0.901
Adj. $R^2$		0.881	0.884	0.885	0.888
$F$		102.496***	101.051***	102.236***	78.051***
Gujarati's (2003) $\Delta R^2$ - $F$ -statistic			4.99**		

This table presents the OLS regression results of financial inclusion disclosure on firm performance. Model 1 shows the main regression model excluding financial inclusion disclosures, while Model 2 presents the regression model with financial inclusion disclosures. Model 3 shows the regression model with interaction between financial inclusion disclosure and market competition. Model 4 shows the regression model with interaction between financial inclusion disclosure and government ownership. The numbers in parentheses are  $t$ -statistics. Pred. sign is the predicted sign. All variables are defined in Table 1.

\*\*\* Significance at the 1% level.

\*\* Significance at the 5% level.

\* Significance at the 10% level.

**Table 5**

Three-stage least squares (3SLS) regression results of financial inclusion disclosure and firm performance.

Variable	Pred. Sign		Dependent Variable = <i>TOBINQ</i>	Dependent Variable = <i>FII</i>	Dependent Variable = <i>TOBINQ</i>	Dependent Variable = <i>FII</i>	Dependent Variable = <i>TOBINQ</i>	Dependent Variable = <i>FII</i>
	Models (1), (3) and (5)	Models (2), (4) and (6)	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<i>FII</i>	+	-	0.360*** (4.033)		10.033*** (2.673)		0.376*** (3.997)	
<i>FII</i> × <i>HHI</i>	?				241.935*** (2.661)			
<i>FII</i> × <i>GOVOWN</i>	?						0.286* (1.885)	
<i>TOBINQ</i>		+		0.519** (2.289)		-0.240 (-0.871)		0.618*** (2.757)
<i>SIZE</i>	?	+	-0.086*** (-4.434)	0.156*** (3.341)	-0.054*** (-3.081)	0.127*** (2.685)	-0.087*** (-4.287)	0.158*** (3.404)
<i>LEV</i>	+	+	1.114*** (8.812)	-0.712 (-1.593)	1.151*** (9.177)	0.221 (0.446)	1.182*** (8.975)	-0.826* (-1.861)
<i>ROA</i>	+	+	-0.194 (-0.244)	-3.488 (-1.608)	-0.496 (-0.654)	-2.701 (-1.210)	0.201 (0.247)	-3.378 (-1.562)
<i>LIQUIDITY</i>	+	+	-0.097 (-0.787)	0.133 (0.422)	-0.144 (-1.163)	0.177 (0.560)	-0.110 (-0.871)	0.141 (0.450)
<i>FAGE</i>	+	-	0.151*** (6.360)	-0.246*** (-5.001)	0.090*** (4.984)	-0.181*** (-3.562)	0.154*** (6.266)	-0.252*** (-5.112)
<i>FOREIGN</i>	+		0.063 (1.021)		0.151** (2.036)		0.058 (0.943)	
<i>RISK</i>	-		0.056** (2.541)		0.048** (2.015)		0.060** (2.718)	
<i>LNCPAY</i>	+		0.011 (0.600)		0.028 (1.210)		0.013 (0.688)	
<i>GROWTH</i>	+		-0.009 (-0.262)		-0.023 (-0.583)		-0.007 (-0.219)	
<i>HHI</i>	?		-79.465*** (-5.250)		-87.303*** (-4.023)		-82.636*** (-5.291)	
<i>GOVOWN</i>	?		-0.203*** (-3.890)		-0.196*** (-3.297)		-0.284*** (-4.428)	
<i>INSTOWN</i>	-		-0.103** (-2.035)		-0.098** (-2.020)		-0.102* (-1.956)	
<i>GOP</i>		+		0.011		0.013		0.006



			(0.783)		(0.763)		(0.445)
<i>ACSIZE</i>	+		0.158*		0.249***		0.149*
			(1.829)		(2.577)		(1.744)
<i>ACIND</i>	+		0.067		0.107		0.066
			(0.568)		(0.744)		(0.572)
<i>BSIZE</i>	+		-0.011		-0.059		-0.006
			(-0.191)		(-0.864)		(-0.110)
<i>BIND</i>	+		-0.041		-0.207		-0.038
			(-0.120)		(-0.495)		(-0.113)
<i>FEMDIR</i>	+		-0.164		-0.277**		-0.140
			(-1.448)		(-2.160)		(-1.265)
Constant	?	-2.923***	-1.042	-3.450***	-0.913	-3.140***	-1.057
		(-3.847)	(-1.599)	(-3.334)	(-1.376)	(-4.084)	(-1.625)
Year Fixed Effects		YES	YES	YES	YES	YES	YES
Observations		161	161	161	161	161	161
$R^2$		0.763	0.488	0.830	0.526	0.747	0.482
$Chi^2$		812.402***	183.345***	868.046***	179.209***	788.384***	184.472***

This table presents the three-stage least squares (3SLS) regression results of financial inclusion disclosure on firm performance. Models 2, 4 and 6 report the regression model of the determinants of financial inclusion disclosure, while Model 1 presents the regression model of financial inclusion disclosure and firm performance. Model 3 presents the regression model with the interaction between financial inclusion disclosure and market competition. Model 5 presents the regression model with the interaction between financial inclusion disclosure and government ownership. The numbers in parentheses are  $t$ -statistics. Pred. sign is the predicted sign. All variables are defined in Table 1.

\*\*\* Significance at the 1% level.

\*\* Significance at the 5% level.

\* Significance at the 10% level.

**Table 6**

OLS regression results of financial inclusion disclosure, market share and information asymmetry.

Variable	Pred. Sign	Dependent Variable =	Pred. Sign	Dependent Variable =	Dependent Variable =
		<i>MKTSHARE</i>		<i>SPREAD1</i>	<i>SPREAD2</i>
		Model 1		Model 2	Model 3
<i>FII</i>	+	0.004** (2.010)	-	-0.005*** (-3.198)	-0.005*** (-3.218)
<i>SIZE</i>	+	0.038*** (25.517)	-	-0.007*** (-6.316)	-0.007*** (-6.187)
<i>LEV</i>	+	0.073*** (8.361)			
<i>ROA</i>	+	-0.015 (-0.298)	?	0.043 (0.827)	0.047 (0.842)
<i>LIQUIDITY</i>	+	0.011 (1.240)	-	-0.016* (-1.748)	-0.022* (-2.363)
<i>FAGE</i>	+	-0.000 (-0.054)			
<i>FOREIGN</i>	+	-0.006 (-1.341)			
<i>GOP</i>	?	-0.001* (-1.765)			
<i>RISK</i>	+	0.002 (0.848)			
<i>GOVOWN</i>	?	-0.019*** (-4.360)			
<i>SPREAD</i>	-	-0.065 (-0.471)			
<i>LNPRICE</i>	-		-	-0.001 (-0.518)	-0.001 (-0.266)
<i>PROA</i>	+		?	0.081 (1.311)	0.107 (1.613)
Constant	?	-0.446*** (-20.467)	?	0.109*** (9.685)	0.121*** (9.794)
Year Fixed Effects		YES		YES	YES
<i>N</i>		161		118	118
<i>R</i> <sup>2</sup>		0.929		0.749	0.780
Adj. <i>R</i> <sup>2</sup>		0.922		0.723	0.757
<i>F</i>		87.603***		36.042***	35.392***

This table presents the OLS regression results of financial inclusion disclosure on market share and information asymmetry. Model 1 shows the regression model of financial inclusion disclosure and market share. Models 2 and 3 report the regression models of financial inclusion disclosure and information asymmetry. The numbers in parentheses are *t*-statistics. Pred. sign is the predicted sign. All variables are defined in Table 1.

\*\*\* Significance at the 1% level.

\*\* Significance at the 5% level.

\* Significance at the 10% level.

**Appendix A:** List of sample banks.

<b>Name of Bank</b>	<b>Name of Bank</b>
Arab Bangladesh Bank	National Bank Ltd
Al-Arafah Islami Bank Ltd	NCC Bank Ltd
Bank Asia Ltd	One Bank Ltd
BRAC Bank Ltd	Premier Bank Ltd
Dhaka Bank Ltd	Prime Bank Ltd
Dutch-Bangla Bank Ltd	Pubali Bank Ltd
Eastern Bank Ltd	Rupali Bank Ltd
EXIM Bank Ltd	Shahjalal Bank Ltd
First Security Islami Bank Ltd	Social Islami Bank Ltd
ICB Islami Bank Ltd	Southeast Bank Ltd
IFIC Bank Ltd	Standard Bank Ltd
Islami Bank Bangladesh Ltd	The City Bank Ltd
Jamuna Bank Ltd	Trust Bank Ltd
Mercantile Bank Ltd	United Commercial Bank Ltd
Mutual Trust Bank Ltd	Uttara Bank Ltd

**Appendix B:** Financial inclusion disclosure items.

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- 1 Programs that support small and medium-sized enterprises (SMEs) with a particular focus on collaboration with micro-credit institutions (MCIs) and business ideas that aim to solve a social problem.
  - 2 Organisations that support the programs mentioned in item 1 and provide them with unique facilities, such as a collateral-free loan and lower interest rates.
  - 3 Financing programs for installation of biomass processing plants (e.g., biogas plants).
  - 4 Financing programs for installation of solar panels in rural households.
  - 5 Financing programs for waste recycling plants in locations populated by the urban poor.
  - 6 Financing programs for effluent treatment plants (ETPs) in manufacturing establishments.
  - 7 Financing programs to support agricultural activities (e.g., crops, oilseeds, spices, vegetables, fruits, etc.).
  - 8 Financing programs to support farming activities (e.g., milk production, or fish or cattle farming) with particular focus on co-production activities (e.g., fish/duck farming with rice of a deep-water variety in low-lying fields).
  - 9 Financing programs to support traditional handicraft businesses, and folk music and performing arts activities that are carried out with a view to income generation and employment for the population groups involved.
  - 10 Additional banking facilities provided to the financial inclusion target groups (e.g., low-cost or free bank account, school banking, reduced initial deposit and/or low ongoing deposit maintenance requirements).
  - 11 Campaign to introduce the bank's financial inclusion program. Introducing different schemes through which microfinance is channelled to the target groups.
  - 12 Incorporation of rural population in mobile banking activities with provision of any extra facilities to encourage them to use these facilities (e.g., training program on how to use mobile banking, etc.).
  - 13 Special programs in place to help remote rural households receive remittances from family members residing overseas.
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