MANAGEMENT & ACCOUNTING REVIEW

C O N T E N T S

Company-specific Characteristics and Market-driven Fixed Asset Revaluation in an Emerging Asian Economy

Md. Tahidur Rahman[1♣a] and Syed Zabid Hossain[b]
[a]Bangladesh Army International University of Science and Technology, Bangladesh
[b]University of Rajshahi, Bangladesh

ABSTRACT

This study aimed to explore the company-specific and market factors driving fixed asset revaluation (FAR) in an emerging economy. Our research was based on a sample of 142 companies listed on the Dhaka Stock Exchange (DSE) – the main bourse of Bangladesh. The binary logistic regression model was the main instrument used to measure the significance level of variables and test the hypotheses. The study found that market conditions, profitability, nationality, debt-to-asset ratio, fixed assets intensity, and company size could influence FAR decisions significantly. But, company age and current ratio have failed FAR decisions insignificantly. Since there are suspicions about the creative practice of FAR, users need to be cautious when explaining and utilizing the information communicated via financial statements of companies that revalued their assets. Besides, regulators should strictly enforce the laws to avoid selective disclosures, and companies should fully disclose market-sensitive information so that corporate stakeholders promptly receive FAR-related disclosures. This paper could serve a large assortment of stakeholders interested in knowing the drivers behind and effects of FAR. Inclusion and the explanation of three new factors, corporate nationality, age, and market condition, could be an extension of the existing FAR literature.

[1♣] Corresponding Author: Md. Tahidur Rahman; Department of Business Administration, Bangladesh Army International University of Science and Technology, Cumilla 3501, Bangladesh, Email: towhidais@gmail.com; Tel: +880 1718824258

INTRODUCTION

Property, plant, and equipment (PP&E) items, prevalently known as fixed assets, owned by business entities are subject to change in their fair market value due to inflation, use in operations, elapse of time, the manifestation of technological development, and so forth. Thus, to demonstrate the real picture the true account of a firm's financial position, assets of these kinds demand revaluation. Fixed asset revaluation (FAR) is a formal process of restating the book value of an asset according to its makeshift fair value (Yoo, Choi, & Pae, 2018). Compared to the historical cost model, values of assets determined by the revaluation model are most useful to the users of financial statements (Barac & Sodan, 2011; Sellhorn & Stie, 2019; Poerwati, Hardiningsih, Srimindarti, & Sundari, 2020). Proponents of the method argue that it improves transparency in the flow of information between managers and stakeholders, reduces information asymmetry, minimizes opportunistic behavior, and facilitates sound investment decisions (Zakaria, Edwards, Holt, & Ramchandran, 2014; Yoo et al., 2018; Bae, Lee, & Kim, 2019).

Although FAR is practiced in most countries, it is commonly exercised in developed countries in Europe, Australia, and Asia. However, upward revaluation is not allowed in some developed countries, such as the United States, Japan, and Germany (Seng & Su, 2010). Even though the revaluation model is a voluntary accounting choice, it has gained popularity in South Asian countries during the last decade. Consequently, a significant number of companies in Bangladesh revalued their fixed assets following the guidelines of the International Accounting Standard (IAS) 16 before the stock market crash in 2010–11 (Khaled, 2011; Rahman, 2017). In compliance with the IAS 16, a PP&E item is recorded in the primary books of accounts at its cost price on the initial recognition date (IASB, 2005). The recorded value is reflected, through the accounting cycle, in corporate financial statements and assumed to disseminate valuable information to the users (Kovacs, 2013; Rafay, Yasser, & Khalid, 2019). In the years following the asset's initial recognition, firms are allowed to choose either the cost model or the revaluation model. As fixed tangible assets, in most cases, make up a large portion of a firm's total assets, the choice of valuation method significantly influences the accounting figures in financial statements (Wang, 2006; Ballas, Panagiotoub, & Tzovasc, 2014; Rahman, 2017).

FAR requires an accounting entry to record the change in the value of any fixed asset that has no direct impact on the cash inflows but has the cost of performing and recording the revaluation (Brown, Izan, & Loh, 1992; Kang & Paik, 2020). But why has corporate FAR become a common practice around the world and also in Bangladesh? Researchers, such as Tay (2009) and Azmi and Ali (2019), have shown that the main argument in support of FAR is that it shows the fair value of fixed assets in the balance sheet. Others have argued that FAR signals a valuable message to investors, which eventually gives rise to stock price movements (Brown et al., 1992; Jaggi & Tusi, 2001; Safiuddin, 2018). Moreover, companies practicing FAR have one or more goals. Those are to enhance borrowing capacity, discover the actual rate of return on capital, identify the appropriate market value of fixed assets, obtain a bank loan by mortgaging assets, settle the justified price of assets in merger or acquisition, communicate performance expectations, avoid takeovers in case of undervalued assets, and so forth (Brown et al., 1992; Aboody, Barth, & Kasznik, 1999; Rafay et al., 2019; Sellhorn & Stie, 2019; Azmi & Ali, 2019). Moreover, managers can increase the value of equity, reduce the debt-to-equity ratio (DER), ensure a proper combination of equity and debt in the capital structure, and reduce the debt costs of their companies through upward FAR. Baek and Lee (2016) and Bae et al. (2019) have argued that an upward FAR increases the amount of assets and equity and, in turn, reduces profitability ratios, such as return on equity (ROE) and return on assets (ROA). FAR also indicates the status of a company, its growth potential, future performance, and liquidity (Aboody et al., 1999; Gaeremynck & Veugelers, 1999; Chainirun & Narktabtee, 2009).

Although there are some valid reasons behind FAR, many companies practice it on an opportunistic basis to exploit several resulting benefits. Iatridis and Kilirgiotis (2012) have argued that companies usually revalue their fixed assets when they expect the most favorable financial outcomes. If the revaluation decision is taken to generate favorable outcomes, the reliability of financial statements may be questionable (Aboody et al., 1999). It has also been argued that upward FAR is a matter of managerial discretion because market values of fixed assets are usually unavailable and estimations are unverifiable (Barac & Sodan, 2011). When the decision concerning FAR is a matter of managerial discretion, it also raises some doubts. The doubts might concern whether the revaluation is timely, whether price sensitive information (PSI) should be released to the market, or whether it offers

any new information or serves just as a "window dressing" tool (Barlev, Fried, Hadda, & Livna, 2007). In this regard, Herrmann, Saudagaran, & Thomas (2005) have claimed that the historical cost model is subject to less manipulation than the revaluation model and assumed to be a more genuine approach to represent fixed assets owned by a company.

Amid the various debates and doubts about the reliability and motives of the FAR, many companies in Bangladesh have practiced FAR based on IAS 16 (Khaled, 2011; Majercakova & Skoda, 2015; Rahman, 2017). The investigation into the factors responsible for the stock market crash in Bangladesh in 2010–11 suggests that FAR is one of the principal reasons behind the formation of a stock market bubble and its subsequent bust (Khaled, 2011; Rahman, 2017; Safiuddin, 2018). Concerned parties, such as investors, regulators, financial analysts, academics, and others, should have a great interest in the wider implications of such a controversial issue, especially the factors that influence FAR decisions in Bangladesh. However, the findings on the practice of FAR in developed economies or other country perspectives are not replicable in Bangladesh.

Important factors, such as the regulatory setting, market environment, value system, investment culture, and corporate attributes leading to corporate decision making, are different in Bangladesh from those of developed countries. In Bangladesh, the majority of shares of companies are held by only a few families, and the owners exercise extensive power over management (Hossain, 2020). The need for further country-specific study on FAR issues is supported by the notable multi-country study of Barlev et al. (2007). The study found diverse motives behind and effects of FAR across different countries and suggested that future researchers on FAR should not extrapolate the findings of one country to another country where the economic, legal, and cultural systems differ significantly; instead, they should consider country-specific factors.

This study therefore aims to answer two unaddressed questions in the literature. First, are the factors influencing the FAR decision in Bangladesh similar to those in developed countries? Second, are there any new factors that could influence FAR decisions to a significant extent? Answering these questions demands a thorough investigation of corporate FAR from the perspective of Bangladesh. Moreover, there is still a dearth of extensive

market-based research evidence on this controversial issue in Bangladesh. The examination of common variables found in previous studies in other countries along with the findings concerning three new variables, such as 'bull-bear' as a proxy of market condition, nationality, and company age, is expected to give new insights and value to the existing literature. The next section describes the capital market conditions along with FAR regulations in Bangladesh, followed by a review of the literature and development of the hypothesis in section 3. Section 4 explains the methodology used, Section 5 analyzes the data and explains the results, and Section 6 concludes the study.

THE BANGLADESH CAPITAL MARKET AND FAR REGULATIONS

The capital market in Bangladesh consists of two stock exchanges – one in the capital city Dhaka and the other in the port city Chittagong. The Dhaka Stock Exchange (DSE) started functioning in 1954 and Chittagong Stock Exchange (CSE) in 1995. The liberalization of the capital market during the early 1990s brought significant positive changes to different market indicators (Mamun, Basher, Hoque, & Ali, 2018). The market is characterized by small investors (who lack fundamental knowledge of the stock market), rumor-based trade, insufficient regulatory control, a low number of institutional investors, a weak form of efficiency, and an occasional avenue for speculative foreign investors. Bangladesh Securities and Exchange Commission (BSEC), previously known as Securities and Exchange Commission (SEC), started its activities in 1995 as a regulatory watchdog of the stock market in Bangladesh. However, over the course of more than six decades, the stock market in Bangladesh has experienced two unprecedented crashes – the first one in 1996 and the second one in 2010–11. After the first crash, investors viewed the market with suspicion and feared any further involvement in the stock market. It forced the government to undertake numerous initiatives, including the overhaul of the institutional and regulatory framework. Consequently, some profitable government entities, along with few multinational companies (MNCs), opened their avenues for investors by enlisting themselves in stock exchanges. As a result, investors regained their confidence in stock market investment, and the market has observed a growing trend since 2006.

1954: Establishment of Dhaka Stock Exchange (DSE)
1995: Establishment of Chittagong Stock Exchange (CSE)
1995: Establishment of Bangladesh Securities & Exchange Commission
1996: 1st Stock Market Crash in Bangladesh
2010-11: 2nd Stock Market Crash in Bangladesh
2011: Report by Share Market Inquiry Committee
2013: BSEC Guidelines on Fixed Asset Revaluation(FAR)

Figure 1: Development of Bangladesh Capital Market and FAR Regulations

On December 5, 2010, the bull market, as a consequence of gradual progression, turned into a bubble when the DSE General Index reached 8,918.5, which was almost 5.6 times higher than four years earlier. Similarly, the turnover increased by 61.7 times, and the market capitalization to GDP ratio reached a record high of 47% (Rahman, Hossain, & Habibullah, 2017; Habibullah & Hossain, 2017; Mamun et al., 2018). On the next day, the bubble busted with damage, resulting in the highest one-day fall of 6.7% and a further 40% fall over the next two months. The collapse accounted for harshly affecting 3.3 million small investors (Rahman, Hossain & Omar, 2017). After the last market crash, the Government of Bangladesh and the BSEC have taken numerous initiatives to bring the market in a positive direction, but all these initiatives have miserably failed, and the market has been sluggish in the ten years after the crash. Economists expect that, like other major stock markets all over the globe, the capital market of Bangladesh will be harshly affected by the COVID-19 pandemic, but an assessment of its gravity will take time. Investors might expect some positive movement in the market because of the recent change in the leadership (chairman) of the BSEC on May 17, 2020, after the nine-year-long tenure of his predecessor.

Since many have indicated that FAR practices are one of the causes behind the 2010–11 stock market crash in Bangladesh, a briefing of the regulatory setting will be valuable (Khaled, 2011; Hasan et al., 2014; Rahman, 2017). In the absence of own national standards, Bangladesh simply adopts the IASs and International Financial Reporting Standards

(IFRSs) as the guiding standards for professional accounting and financial reporting in the country. Consequently, IAS 16 was the instrument concerning the accounting treatment of PP&E, including the revaluation of such assets. Before the market crash, any national guideline concerning FAR was absent in Bangladesh. The guidelines of the International Valuation Standard concerning FAR were also not mandatory that led companies to practice FAR arbitrarily. After the 2010–11 market crash, the regulator recognized the need for an inclusive guideline to revalue corporate assets in Bangladesh. As such, it developed and issued a guideline for FAR on August 18, 2013, and made it obligatory for publicly listed companies that intend to have their assets revalued. However, our initial investigation found no study on whether companies are following the guidelines properly.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

The choice between FAR and historical cost has been the topic of long-standing debate among academics, investors, corporate managers, standard setters, and regulatory watchdogs. The contentious nature of the issue has influenced researchers to carry out many researches, mostly in developed economies, from different angles. Several theories, such as the Positive Accounting Theory (PAT), the Signaling Theory, and the Stewardship Theory, can better explain the logic behind FAR decisions by corporate entities. Although opinions vary among researchers regarding the application of these theories to FAR, PAT is considered to be the most relevant theory supporting FAR.

PAT has three hypotheses – the debt covenant hypothesis, the political cost hypothesis, and the signaling hypothesis. Jaggi and Tusi (2001), Gaffikin (2007), Chainirun and Narktabtee (2009), Tay (2009), Seng and Su (2010), Christensen and Nikolaev (2013), Ballas et al. (2014), Zakaria et al. (2014), Yao, Percy, and Hu (2015), and Jefriyanto and Mulya (2019) are among those who used PAT to establish their arguments concerning FAR. PAT implies that the self-interest of a company is the driving force behind all economic activity and thus influences the selection of accounting policies like FAR (Gaffikin, 2007; Chainirun & Narktabtee, 2009). On the other hand, Zakaria

et al. (2014), Yao et al. (2015), Bae et al. (2019), Jefriyanto and Mulya (2019), Sellhorn and Stie (2019), and Song and Pae (2019) are among those who have used the Agency Theory to explain the motivations behind FAR. The Agency Theory implies that the self-interest of managers (the agents) is the main driver of their performance and choice of accounting model. In addition, Ronen (2008), Abdel-Khalik (2010), Madison (2014), and Palea (2014) have used the stewardship theory to explain incentives behind FAR. The stewardship behavior focuses on serving others and, hence, aligns with the interest of the principal (Madison, 2014). Thus the stewardship concept can be a better option to evaluate how efficiently managers are improving shareholders' value (Ronen, 2008).

Missonier-Piera (2007) had stated that companies in Switzerland use FAR as a device to develop creditors' perception of their economic strength, and thereby enhancing their borrowing powers. Similarly, in the context of UK firms, Cheng and Lin (2009) have found that upward FAR was followed to reduce political costs, debt contracting costs, and the problem of information asymmetry. Seng and Su (2010) also found a reduction in political costs as the motive behind FAR in New Zealand. Barac and Sodan (2011), in a study on Croatia, have argued that opportunistic managers enhance the borrowing capacity of their companies through FAR and, thus, reduce the cost of borrowing. The examination of FAR motives by Zakaria et al. (2014) recommended several reasons, namely improving financial conditions, easing debt negotiation, reducing political costs, reducing the opportunistic actions of managers, offering value relevance, and minimizing the problem of information asymmetry.

In an attempt to investigate the factors influencing FAR, Brown et al. (1992) found that a high debt-to-asset ratio (DAR), a high percentage of fixed assets, and a low amount of reserve and surplus were the driving forces of FAR in Australia. In addition to these factors, Missonier-Piera (2007) had observed a new factor *high export sales* associated with the upward FAR in Switzerland. Barac and Sodan (2011) have found that profitable big companies with low liquidity, poor cash flow, and increased debt have more chances of upward FAR. Similar to Seng and Su (2010), Iatardis and Kilirgiotis (2012) have found that FAR was significantly associated with DAR, operating cash flow, total assets, and the intensity of fixed assets before revaluation. On the other hand, using a sample of Brazilian companies, Lopes and Walker (2012)

noted that FAR had a significant negative associated with future performance, prices, and returns. The study also affirmed a positive association of FAR with debt and liquidity. Beyond different country-specific studies, Barlev et al. (2007) conducted a comprehensive research on a sample from 35 countries with diverse contexts from around the globe. The study used several variables, such as leverage, liquidity, financing requirement, financing sources, capital intensity, capital expenditure, market-to-book ratio (MBR), ROA, size, and frequency of previous revaluations. The study found mixed results and concluded that motivations for and effects of FAR were not uniform across country classifications.

In Asian countries other than South Asia, FAR has gained popularity. Consequently, some researchers conducted their studies in South Korea, Indonesia, and Iran. Tabari and Adi (2014) have found that FAR was significantly associated with DAR, operating cash flow, total assets, and the intensity of fixed assets before revaluation in Iran. Zakaria et al. (2014) developed a conceptual model of the FAR decision, where they identified the above-mentioned seven motivating factors and two effects related to FAR in Indonesia. Two effect items of the study were future financial performances and market-based reactions. Subsequently, Jefriyanto and Mulya (2019), using logistic regression in the Indonesian market, found that the size and intensity of fixed assets are positively related to FAR decisions. However, the study found no effect of leverage and liquidity on FAR. The research of Azmi and Ali (2019) investigated the future impact of FAR and found a positive influence on operating income but no significant impact on cash flow. Another Indonesian research covering the period 2015–2018, conducted by Poerwati et al. (2020), used the same statistical tool as Jefriyanto and Mulya (2019) and found that size does not influence the FAR decision. They found a significant effect of fixed asset intensity (FAI) and operating cash flow on FAR. The South Korean study conducted by Bae et al. (2019) investigated the relationship between FAR and stock price crash risk. The study concluded that FAR improves the timeliness and relevance of information, which ultimately reduces stock price crash risk and helps to develop a sustainable market. Another South Korean study by Kang and Paik (2020) attempted to explore the cost and benefits of FAR. The study found some companies using appraised prices for revaluation of their land paying fees, whereas others using government-announced price for taxation to avoid the fees.

Our search for relevant studies has revealed a dearth of FAR literature in major South Asian countries, such as India, Pakistan, Sri Lanka, and Bangladesh. Nijam (2018) had studied the motives of Sri Lankan firms for using FAR. Employing bivariate logistic regression along with the Mann-Whitney U test, the study found that manufacturing companies with high percentages of land and building applied the revaluation model whereas companies with a high percentage of plant and machinery followed the historical cost model. The study did not find any effect of firm size, the volume of PP&E, ROA, and ROE on FAR decisions. However, the study found a significant positive association between FAR and financial leverage. In contrast to Nijam's (2018) two years of data, Rafay et al. (2019), based on 10 years of data from Pakistani listed companies, found that large companies holding a high percentage of fixed assets and declaring small stock dividends are more inclined toward regular revaluation. Their study identified the percentage of stock dividends as a new factor. Their findings regarding company size are opposite to the finding of Nijam (2018). Another Pakistani study conducted by Abbas et al. (2019) attempted to observe the FAR effect on future performance. The study focused solely on the cement sector and found a significant negative impact on future performance, which is similar to the findings of Lopes and Walker (2012). The study also concluded that investors do not perceive FAR practice as fair in Pakistan.

In Bangladesh, only a few studies, such as Khaled (2011), Alam (2014), Hasan et al. (2014), Rahman (2017), and Safiuddin (2018) found relevant to FAR. All these studies have been done after the Bangladesh stock market crash in 2010–11. In 2011, a committee was formed headed by Khalid to investigate the 2010–11 stock market crash in Bangladesh. The report found some irregularities in FAR practices as one of the causes of the stock market crash. Similar to Khalid (2011), the study of Hasan et al. (2014) mentioned corrupt FAR practices as one of the reasons behind the stock market crash. Neither study employed any statistical analysis; they just made general comments about FAR practice. The study of Alam (2014) was conducted only on non-financial companies to understand the trend of FAR practices in Bangladesh and found it unpopular at that time. Rahman (2017) investigated FAR practices before IPOs on textile companies. By employing the regression model, the study found a negative relationship between FAR and FAI. The study has observed that FAR is a common practice for IPO companies in Bangladesh, with around 73% of newly listed companies practicing FAR

before IPOs. Safiuddin (2018), referring to some irregularities similar to Khalid (2011), mentioned FAR as one of the creative accounting practices used to inflate stock prices.

Based on the review of literature, several factors and situations that could influence revaluation decisions have been identified. These factors include issuing bonus shares, perils of the takeover, easing lending contract, increase borrowing capacity, decreased cash flows, growth potentials, fixed assets' intensity, earlier revaluation, depletion of equity reserves, industry classification, debt, liquidity, company size, and foreign sales (Missonier-Piera, 2007; Tay, 2009; Barac & Sodan, 2011; Seng & Su, 2010; Iatridis & Kilirgiotis, 2012; Rahman, 2017; Ghio, Filip & Jeny, 2018; Nijam, 2018; Jefriyanto & Mulya, 2019; Poerwati et al*., 2020)*. In the context of the economic, regulatory, and behavioral aspects of Bangladesh, this study considered nine factors relevant to FAR. The hypotheses concerning the factors are outlined below.

Level of Indebtedness and FAR Decision

Companies try to maintain a certain amount of debt in their capital structure in order to maximize their returns. The DAR is a common measure of a firm's level of indebtedness. A high DAR implies that the company is more likely to face insolvency and thus increases restrictions on further loans or the cost of loans in the future (Iatridis & Kilirgiotis, 2012; Tabari & Adi, 2014; Rahman, 2017). Prior studies have suggested that companies with high leverage or low borrowing limits are more likely to practice FAR (Barlev et al., *2007; Missonier-Piera, 2007; Tay, 2009; Choi, Pae, Park, & Song, 2013; Kang & Paik, 2020;* Solikhah, Hastuti, Asrori, & Budiyono, 2020). The debt covenant hypothesis explains the conflicting relationship between stockholders and debt-holders. This hypothesis assumes that managers perform their job for the overall interests of owners and usually try to transfer debt-holders' wealth to shareholders (Chainirun & Narktabtee, 2009).

Consequently, owner-managers are likely to select accounting procedures that increase current income or reduce the DER to avoid possible violations of debt covenants (Gaffikin, 2007). This argument is also supported by the stewardship theory. It is evident that when FAR is carried out by

companies with low DER, the market considers it as reducing information asymmetry or tumbling agency costs. In contrast, when FAR is practiced by companies with high DER, the market considers this to be an opportunistic behavior (Courtenay & Cahan, 2004). In Bangladesh, the submission of balance sheets along with other documents is a basic requirement for filing loan applications to lending institutions. Therefore, upward FAR might help companies receive extra loans or renew existing ones by increasing the carrying value of total assets and stockholders' equity that reduce both DAR and DER. Thus, we posit the following hypothesis concerning indebtedness and FAR decisions:

H_1: *There is a significant positive association between the level of debt and FAR.*

Liquidity Position and FAR Decision

There are many ways to judge corporate liquidity, such as the current ratio (CR), quick ratio, net working capital, and the cash conversion cycle. Many previous researchers have used the CR as a proxy of liquidity. A low CR reveals a firm's potential failure to pay its current obligations. Conversely, a high CR implies excess liquidity, which is a sign of idle current assets and poor management of working capital (Tay, 2009). Based on the signaling hypothesis, companies consider negative or low CR as a red flag for their liquidity and thus may offset it by demonstrating enhanced asset figures with the help of FAR (Chainirun & Narktabtee, 2009; Tay 2009). Previous researchers such as Lin and Peasnell (2000), Barlev et al. (2007), Cheng and Lin (2009), and Barac and Sodan (2011) have found a negative association between liquidity conditions and FAR decisions. However, as firms in Bangladesh are characterized by poor liquidity, companies facing liquidity crises might choose FAR to offset negative information of poor liquidity. Thus, based on the above discussions, we posit the following relationship between liquidity condition and FAR decision:

H_2: *There is a significant negative association between corporate liquidity and FAR.*

Growth Potentiality and FAR Decision

Brown et al. (1992), Iatridis and Kilirgiotis (2012), and Azmi and Ali (2019) have argued that the FAR signals the growth potential of concerned companies to investors. FAR also helps restore a firm's borrowing capacity, lower its borrowing cost, avoid probable underinvestment, and also sends a signal to external parties about a firm's reserved borrowing capacity (Courtenay & Cahan, 2004; Seng & Su, 2010). Thus, the signaling hypothesis supports FAR decisions by managers. Some have argued that FAR provides a "costly signal" for the future because it reduces profitability ratios, such as ROA and ROE. However, the MBR is considered a common measure of growth potentiality (Lin & Peasnell, 2000; Barlev et al., 2007; Tay, 2009). Hence, companies with a higher MBR are expected to have a high possibility of FAR. Therefore, a higher MBR inspires companies to follow upward FAR. Based on the above conjecture, the following hypothesis is formulated:

H_3: *There is a significant positive association between growth potential and FAR.*

Size of the Firm and FAR Decision

Firm size has also been used as a variable in previous research on asset revaluation (Brown et al., 1992; Lin & Peasnell, 2000; Seng & Su, 2010; Iatridis & Kilirgiotis, 2012; Ballas et al., 2014; Rafay et al., 2019; Poerwati et al., 2020; Solikhah, et al., 2020). The size of firms can be measured by net profit after tax (NPAT), total assets, total sales, and paid-up capital (Barlev et al., 2007). Most researchers used the log transformation of total assets as the size variable. The political cost hypothesis of PAT assumes that firm size is associated with FAR. The visibility of a company increases with an increase in size. On the other hand, political cost is supposed to increase as the visibility of a company increases (Ballas et al., 2014).

Size may influence the asset revaluation decision in two ways. First, highly distinct firms are supposed to transfer more wealth and, hence, according to the political cost hypothesis, encounter more political scrutiny. Thus, to reduce political costs, large companies may prefer FAR that reduces profitability ratios, such as ROA and ROE, by enhancing assets as well as

equity. FAR also decreases profits due to the increase in future depreciation expected to generate by an enhanced amount of fixed assets after revaluation. Alternatively, large and visible companies may use FAR as a tool to impress investors by reinforcing their financial position, especially equity and asset conditions (Iatridis & Kilirgiotis, 2012). Therefore, it can be assumed that larger and politically visible firms are more likely to use accounting methods that help understate income or enhance asset and equity. As such, we predict the following hypothesis:

H_4: *There is a significant positive association between firm size and FAR.*

Fixed Asset Intensity (FAI) and FAR Decision

The revaluation increment depends on the total value of fixed assets owned by the respective company. Most of the previous researchers who studied factors influencing FAR, such as Lin and Peasnell (2000), Jaggi and Tusi (2001), Barlev et al. (2007), Tay (2009), Barac and Sodan (2011), Iatridis and Kilirgiotis (2012), Poerwati et al. (2020), and Solikhah, et al., (2020), have considered FAI. It may influence a company's decision regarding FAR in two ways. First, fixed assets denote a company's collateral value, which is scrutinized by lending institutions. Since intangible assets do not support debt contracting, companies want to have a full reflection of their fixed assets through FAR (Lin & Peansell, 2009). Consequently, a low level of FAI may influence management to revalue fixed assets to improve the borrowing capacity of the respective company (Tay, 2009; Barac & Sodan, 2011). Hence, the relationship between FAI and FAR is assumed to be negative. In contrast, if the FAI of a company is high, the effect of revaluation is expected to be high, which may be attractive to lenders and investors (Barlev et al. 2007; Tay, 2009; Barac & Sodan, 2011). In this context, the intensity of fixed assets may be positively related to the FAR decision. However, whether a company will apply the FAR model depends on the intention of the management of the concerned company. Based on the above conjecture, we posit the following hypothesis:

H_5: *There is a significant (positive or negative) association between FAI and FAR.*

Profitability and FAR Decision

Although there are many measures of profitability, the NPAT is one of the most commonly used proxies. Investors and lenders are more concerned about the current profit of companies and the future performance as well. Dissemination of positive information concerning the profit and financial health of a company rewards its managers by encouraging evaluation of their stewardship that may enhance their compensation. Conversely, publication of negative information may adversely affect their reputation and compensation or even lead to their termination (Kothari et al., 2009; Bae et al., 2019). Both positive profit and negative profit may influence FAR decisions. Companies with a handsome amount of profit may prefer revaluation of their fixed assets to reduce profit figures and profitability ratios, such as ROE and ROA, and thus reduce political pressure (Jaggi & Tusi, 2001; Barlev et al., 2007; Ballas et al., 2014). In contrast, companies with continuous loss may rely on FAR to convey a positive signal to investors, lending institutions, and others by the disclosure of positive or enhanced net asset value (NAV) (Wang, 2006). Gaeremynck & Veugelers (1999) found that highly profitable firms are less interested in FAR practice. Thus, managers of companies facing loss may prefer FAR to offset negative messages concerning performance or loss of the company. Based on the aforementioned argument, the following hypothesis is drawn:

H$_6$: *There is a significant (positive or negative) association between NPAT and FAR.*

Age of the Firm and FAR Decision

As stated by Brown et al. (1992), the market value of an asset differs from its book value due to an annual increment (or decrement) of the price of that specific asset since the last revaluation. Since a price index capturing the increase in the value of fixed assets is a complicated task, age of the firm can be used as an explanatory variable to the FAR decision. Logically, the difference between the market value and the book value of fixed assets increases with an increase in firm age. The logic is more applicable to companies that possess a high share of land and building in their asset structure. For a non-revaluer company that follows the cost model, the chance of revaluation increases as the age of the concerned company

increases. Similarly, for a company that practices FAR, more frequent revaluation is expected during a period of high inflation or as time elapses since the last revaluation (Rahman, 2017). Hence, we posit the following hypothesis:

H_7: *There is a significant positive association between firm age and FAR.*

Nationality and FAR Decision

Our review of the literature on asset revaluation found no evidence of nationality (domestic or multinational) as a factor. Iatridis and Kilirgiotis (2012), beyond the common variables, used foreign operations as an explanatory variable in their UK-based study. They found that large companies with foreign operations are more inclined toward FAR to collect more capital. The nationality (NTY) of companies may affect FAR decisions. Domestic companies in Bangladesh are different from multinational companies in terms of capital base, profitability, and operating policy. It is evident that MNCs operating in Bangladesh are more financially sound than those of their domestic counterparts, and thus, they are hardly concerned about care the debt covenant hypothesis. They are also reluctant to declare a stock dividend or right shares. The reason might be that MNCs operating in Bangladesh are not interested in increasing their distinctness to reduce political pressure and thereby the associated cost. The opposite situation may induce domestic companies to practice FAR. Based on the above arguments, we posit the following hypothesis:

H_8: *There is a significant association (positive or negative) between NTY and FAR.*

Market Conditions and FAR Decision

Courtenay and Cahan (2004), Tay (2009), Bae et al. (2019), and others have studied the market reaction of the FAR decision. However, evidence has not been found as to whether the market conditions (bull or bear) influence FAR decisions. If the objective of FAR is to present the true and fair view of a company's financial position, market conditions should not influence FAR decisions. Hence, asset revaluation should be carried out at regular intervals regardless of market conditions. But if the motive

is to influence share price, market conditions can be a factor. In the context of the Bangladesh capital market, it is easier for opportunistic managers to influence share prices by disclosing FAR information when the market remains bull. At that time, even a small piece of positive PSI results in an overwhelmingly positive reaction. Conversely, a significantly positive PSI might have a very poor reaction or even no reaction when a bear market prevails. Thus, the bull period might be the best choice for opportunistic managers, who intend to capture benefits from the market by practicing FAR. Based on the above arguments, we posit the following hypothesis:

H$_9$:   *There is a significant association between market conditions and FAR.*

METHODOLOGY OF THE STUDY

The nature and intricacy of FAR pushed us to use several techniques that are mainly quantitative in approach and descriptive in nature. Data was collected mostly from annual reports of sample companies. A period of nine years, from 2007 to 2015, was preferred for four reasons. First, the guiding accounting standard for revaluation, "IAS 16," was adopted in Bangladesh on January 01, 2007, and, thus, 2007 was selected as the starting year. Second, there was an unprecedented stock market crash in Bangladesh in 2010–11. Hence, the study period was deemed appropriate for checking whether there was any cause-effect relationship between FAR and the stock market crash. Third, the BSEC issued a notification regarding FAR, the key guiding document, on August 18, 2013. At least two years of data up to 2015 after the issuance of the notification was deemed justified in capturing its effects.

Last, there were differences among companies in Bangladesh regarding the end of the accounting year till 2015. Companies used to end their annual accounting period in December, September, June, or March. To achieve consistency, the National Board of Revenue (NBR) issued a circular that required non-financial companies to prepare their annual reports for the year ended 30 June with effective from 2016. To comply with the circular, many companies that used to end their account period in September and December could not prepare their annual report in 2016. Companies accumulated their financial outcomes till June 2017. Consequently, annual reports of many

companies were not found in 2016, whereas the financial outcomes of many companies shown in the annual reports of 2017 were inflated. Thus, we did not incorporate data of 2016 and 2017.

The total number of companies listed on the DSE, as of December 31, 2015, was 571 under 22 industry categories. The target population of the study was all 198 non-financial companies. Banks, non-bank financial institutions, insurance companies, and other financial companies were excluded because the asset structure of financial companies is different from non-financial companies. Furthermore, the IT category was excluded as the initial investigation did not find any evidence of FAR in this sector. The telecom industry was excluded because of extreme values in the sector. Moreover, 12 companies were excluded due to the unavailability of annual reports and relevant data. Furthermore, 33 companies were excluded due to a lack of needed data for three consecutive years. Thus, the sample of the study included all remaining 142 DSE-listed companies under 13 industry categories. The nature of this research required categorizing sample companies into two: revaluers and non-revaluers. A revaluer is a company that revalued its fixed assets during the study period, whereas a non-revaluer company is one that did not revalue its fixed assets during the study period. Required data recorded primarily using Microsoft Excel. After that, data was placed into the worksheet of Statistical Package for the Social Sciences (SPSS) and analyzed by applying univariate, bivariate, and multivariate statistical techniques.

Variables and the Model

The only dependent variable in this study is revaluation decisions (REV), a dichotomous variable allocating 1 for revaluer and 0 for non-revaluer. Hence, the logistic regression is suitable for investigating the association between the dependent and independent variables (Barlev et al. 2007; Chainirun & Narktabtee, 2009; Nijam, 2018; Rafay et al., 2019). Since the dependent variable 'REV' is a dummy variable, there is no binding of complying the linear probability requirements. The following model examines the impact of different proxies on FAR decisions:

$$REV = \alpha + \beta DAR + \beta CR + \beta MBR + \beta LTA + \beta FAI + \beta AGE + \beta NPAT + \beta NTY + \beta BB + e \dots \tag{1}$$

To keep consistency with earlier studies and consider the perspective of firms in Bangladesh, nine independent variables were incorporated into the model. The variables are explained in table 1.

Table 1: Research Variable and their Narratives

Variable	Narrative	Type
REV	1 for a revaluer firm and 0 for a non-revaluer firm	Nominal
DAR	Total liabilities ÷ Total assets before revaluation	Scale
CR	Total current assets ÷ Total current liabilities before revaluation	Scale
MBR	Market value of common equity ÷ Book value of common equity before revaluation;	Scale
LTA	Log transformation of total assets before revaluation;	Scale
FAI	Fixed assets ÷ total assets before revaluation;	Scale
AGE	Time gap since the last revaluation or the starting of commercial operation before revaluation (for 1st-time revaluer);	Scale
NPAT	1 for positive NPAT and 0 for negative NPAT	Nominal
NTY	1 for domestic companies and 0 for non-domestic companies	Nominal
BB	1 for the bull market, 0 for the bear market.	Nominal

Note: REV = revaluation decision; DAR = debt-to-asset ratio, a proxy of indebtedness; CR = current ratio, a proxy of liquidity; MBR = market-to-book ratio, a proxy of growth potential; LTA = log transformation of the total asset; FAI = fixed asset intensity; AGE = time gap; NPAT = net profit after tax, a proxy of profitability; NTY = nationality of the company; and BB = bull-bear, a proxy of market condition.

RESULTS AND DISCUSSIONS

The regression model used in the current study incorporated both categorical and scale variables. The analysis is based on the descriptive statistics of the scale variables and the results of the logistic regression model.

Descriptive Statistics of Independent Variables

Table 2: Comparative Descriptive Statistics of the Scale Variables

Variables	Non-revaluers N=90					Revaluers N=52				
	Mini	Maxi	Mean	Median	SD(σ)	Mini	Maxi	Mean	Median	SD(σ)
CR	0.30	24.40	2.383	1.50	3.061	0.40	28.70	1.796	1.10	3.910
FAI	1.25	90.53	38.279	36.20	21.093	16.34	94.01	59.408	60.91	19.467
DAR	0.10	1.70	0.501	0.48	0.295	0.20	13.40	0.917	0.69	1.780
MBR	0.28	20.69	3.468	2.50	3.440	0.33	41.46	5.212	2.60	6.836
AGE	2.00	52.00	24.30	20.50	14.440	4.00	47.00	24.00	26.00	10.739
LTA	2.90	11.47	7.36	7.41	1.815	4.08	11.27	7.35	7.39	1.382

Note: CR = current ratio; FAI = fixed asset intensity; DAR = debt-to-asset ratio; MBR = market-to-book ratio; LTA = log transformation of the total asset; AGE = time gap; NPAT = net profit after tax; NTY = nationality of the company; and BB = bull-bear condition.

The comparative descriptive statistics of independent scale variables for non-revaluer and revaluer companies during the study period are shown in Table 2. The comparison indicates that there is a significant variation between the two groups in terms of CR, FAI, DAR, and MBR. The results also indicate that non-revaluer companies had a higher CR before revaluation than that of revaluer companies. Conversely, revaluer companies had higher mean values of FAI, DAR, and MBR than those of non-revaluer companies. Regarding AGE and LTA, there was no difference between the two groups.

Test of Multicollinearity

There are three categorical variables and six scale variables in the model. The multicollinearity test is not required for categorical variables. Thus, a correlation matrix was prepared only for the scale variables as shown in Table 3. An absolute correlation coefficient of greater than 0.7 or o.8 indicates the existence of multicollinearity problem. Since most of the correlation coefficients were less than 0.8, it can be inferred that multicollinearity is not a problem in the model.

Table 3. Correlation Matrix of Independent Scale Variables

		CR	FAI	DAR	MBR	AGE	LTA
CR	Pearson Correlation	1					
	Sig. (2-tailed)						
FAI	Pearson Correlation	-.040	1				
	Sig. (2-tailed)	.633					
DAR	Pearson Correlation	-.098	.045	1			
	Sig. (2-tailed)	.248	.592				
MBR	Pearson Correlation	-.121	-.095	.005	1		
	Sig. (2-tailed)	.150	.259	.955			
AGE	Pearson Correlation	-.160	-.287**	.003	.083	1	
	Sig. (2-tailed)	.058	.001	.969	.324		
LTA	Pearson Correlation	-.027	-.200*	-.058	-.039	.018	1
	Sig. (2-tailed)	.748	.017	.492	.641	.831	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Note: CR = current ratio; FAI = fixed asset intensity; DAR = debt-to-asset ratio; MBR = market-to-book ratio; LTA = log transformation of the total asset; AGE = time gap; NPAT = net profit after tax; NTY = nationality of the company; and BB = bull-bear condition.

We also ran a multiple regression model, taking revaluation status as the dependent variable to examine the multicollinearity problem among the independent variables. As there is no option to check VIF in logistic regression, the variance Inflation Factor (VIF) values from the multiple regression are used. We considered only the VIF column and ignored all other values when checking for multicollinearity in Table 4. Here, all the VIF values are less than 2, even close to 1. Thus, there is no multicollinearity problem among the independent variables.

Table 4: Collinearity Diagnostic of Independent Variables

Independent Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
CR	-.004	.010	-.030	-.440	.661	.913	**1.095**
FAI	.010	.002	.469	6.465	.000	.805	**1.241**
DAR	.030	.030	.068	1.002	.318	.914	**1.094**
MBR	.020	.006	.205	3.082	.003	.960	**1.042**
AGE	.005	.003	.138	1.950	.053	.851	**1.175**
LTA	.080	.021	.275	3.788	.000	.807	**1.239**

Note: CR = current ratio; FAI = fixed asset intensity; DAR = debt-to-asset ratio; MBR = market-to-book ratio; LTA = log transformation of the total asset; AGE = time gap; NPAT = net profit after tax; NTY = nationality of the company; and BB = bull-bear condition.

Requirements for Sample Size

The first condition for running a robust logistic regression is to fulfill the requirement of a minimum sample size. The minimum number of samples, n=90, is depicted in Table 5. The minimum required sample size of 90 was fulfilled to run a logistic regression model since this study used 142 sample companies.

Table 5: Determination of the Minimum Sample Size to Check Robustness

Independent Variables	Type	Categorical: (Categories-1) × 10	Continuous: 10
BB	Categorical	(2-1) ×10=10	
NPAT	Categorical	(2-1) ×10=10	
NTY	Categorical	(2-1) ×10=10	
CR	Continuous		10
FAI	Continuous		10
DAR	Continuous		10
MBR	Continuous		10
AGE	Continuous		10
LTA	Continuous		10
Total n quota = 90		30	60

Note: BB = bull-bear, a proxy of market condition; NPAT = net profit after tax, a proxy of profitability; NTY = nationality of the company; CR = current ratio, a proxy of liquidity; FAI = fixed asset intensity; DAR = debt-to-asset ratio, a proxy of indebtedness; MBR = market-to-book ratio, a proxy of growth potential; AGE = time gap; and LTA = log transformation of the total assets.

The Logistic Regression

The explanation of the binary logistic regression model starts from the omnibus test of the model coefficient. The omnibus tests of the model coefficients in Table 6 show a sig. $(p) < 0.05$, which indicates that somewhere in the model at least one of the predictor variables is statistically significant for predicting the outcome variable (REV).

Table 6: Model Coefficients, Model Summary, and Classification Table

		Chi-square	df	Sig.
Step 1	Step	83.272	9	.000
	Block	83.272	9	.000
	Model	83.272	9	.000

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	103.288[a]	.444	.607

		Predicted Revaluation Status		
		Non-revaluer	Revaluer	Percentage Correct
Revaluation Status	Non-revaluer	81	9	90.0
	Revaluer	14	38	73.1
Overall Percentage				83.8

R^2 is used to convey the extent to which the predictors account for the variability observed in the outcome variable. In Table 6, Cox & Snell R2 = 0.444 and Nagelkerke R2 = 0.607; clearly, these results are quite different. Usually, the Nagelkerke R2 is considered a better option. The Nagelkerke R2 indicates that this model accounts for 60.7% variability in FAR. The "overall percentage" row describes the accuracy of the prediction. Here, the value 83.8 indicates that this approach to predictions is correct 83.30% of the time, which is very high. Whether the result is significant, however, depends on the context. In social science studies, 83.3% is considered quite accurate. To determine the variable(s) that statistically (significantly) predict the outcome variable, we have to look to the variables in the equation Table 7 and identify the rows where sig. (p) is less than or equal to 0.05.

Table 7: Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
BB(1) [0=Bull, 1=Bear]	-1.168	.545	4.591	1	**.032**	.311	.107	.905
NPAT(1) [0=Loss, 1=Profit]	-2.357	.873	7.290	1	**.007**	.095	.017	.524
NTY(1) [0=Non-domestic, 1=Domestic]	2.235	.890	6.311	1	**.012**	9.350	1.635	53.481
CR	-.005	.083	.003	1	.955	.995	.847	1.170
FAI_t_0	.074	.015	24.705	1	**.000**	1.077	1.046	1.109
DAR	.027	.009	8.227	1	**.004**	1.027	1.008	1.046
MBR	.174	.077	5.150	1	**.023**	1.190	1.024	1.383
AGE	.026	.021	1.552	1	.213	1.026	.985	1.068

LTA	.622	.176	12.518	1	**.000**	1.862	1.320	2.628
Constant	-10.96	2.344	21.848	1	.000	.000		

a. Variable(s) entered on step 1: BB, NPAT, NTY, CR, FAI_t_0, DAR, MBR, AGE, LTA.

Note: BB = bull-bear, a proxy of market condition; NPAT = net profit after tax, a proxy of profitability; NTY = nationality of the company; CR = current ratio, a proxy of liquidity; FAI = fixed asset intensity; DAR = debt-to-asset ratio, a proxy of indebtedness; MBR = market-to-book ratio, a proxy of growth potential; AGE = time gap; and LTA = log transformation of the total assets.

Market Conditions (BB): The *p-value* .032 < .05 in Table 7 implies that market conditions have a statistically significant influence on FAR. Exp (B) = .311 indicates that the bear market has 0.311 times of FAR outcome as against the bull market. In other words, the bull market has 3.22 times (1 ÷ .311) of asset revaluation chance compared with the bear market. The reason may be the opportunistic behavior or speculative motives of the management and the shareholders with substantial control over corporate capital. In the context of the stock market in Bangladesh, FAR is viewed as positive information, as it enhances the NAV of the revalued company. Thus, a tiny PSI may yield a large amount of gain in the bull market. The result is similar to the predicted relationship between market conditions and FAR decisions.

Profitability (NPAT): The *p-value* .007 < .05 implies that profitability has a significant influence on FAR. Exp (B) = .095 denotes that profitable companies have .095 times of FAR outcome as compared to companies suffering losses. In other words, the companies facing loss have 10.53 times (1 ÷ .095) the possibility of FAR compared to the companies reporting a profit. This outcome may be the consequence of the management motive of applying the FAR model to conceal poor performance by shifting the investors' focus on the increased NAV. Another reason might be to offset the decreased borrowing capacity that originated from a poor financial performance by improving the NAV through FAR. The result is supported by the debt covenant hypothesis and is also in line with the findings of Gaeremynck and Veugelers (1999) and Wang (2006).

Nationality (NTY): The *p-value* .012 < .05 suggests that the nationality of companies has a significant impact on FAR decisions. Exp (B) = 9.35 implies that the chances of asset revaluation in domestic companies is 9.35 times higher compared to MNCs or companies with a higher percentage of foreign shareholding. The result can be explained by the political cost hypothesis, which states that MNCs operating in Bangladesh are unwilling to be more

visible to pressure groups by increasing the value of assets through FAR. Thus, a positive relationship between the domestic nature (local ownership) of companies and FAR decisions is proven.

Current Ratio (CR): The *p-value* .955 > .05 implies that the CR has a negative but insignificant influence on FAR decisions. Similarly, the descriptive statistics (mean values) of CR in revaluer and non-revaluer companies of 1.796 and 2.383, respectively, indicate that companies with high liquidity are not willing to practice FAR while those with lower liquidity are more inclined to do so. The results are consistent with the findings of Lin and Peasnell (2000), Barlev et al. (2007), Cheng and Lin (2009), and Barac and Sodan (2011). Companies with enough working capital or current assets do not need to borrow and, in turn, they do not engage in FAR practices. However, if borrowing is the motive behind FAR, a question might emerge about the appropriateness of the valuation process.

Fixed Asset Intensity (FAI): The *p-value .000 < .05 implies that the FAI ratio has a significant impact on FAR decisi*ons. Exp (B) = 1.077 implies that for every 1% increase in fixed assets, the chances of asset revaluation increased by (1.077 – 1) × 100, or 7.7 times. The result is compatible with the predicted outcome of this study. The companies with a higher percentage of fixed assets, especially land and buildings, have a higher chance of FAR. The mean values of 59.408 and 38.279 for revaluer and non-revaluer companies, respectively, also support the regression results. This finding is in line with most other studies, such as those by Barlev et al. (2007), Tay (2009), and Barac and Sodan (2011), but contradicts the findings of Iatridis and Kilirgiotis (2012).

Debt-to-Assets Ratio (DAR): The *p-value* .004 < .05 suggests that DAR has a significant impact on FAR decisions. Exp (B) = 1.027 indicates that for every 1% increase in DAR, the chances of FAR increased by 2.7 times. The average DAR of 0.917 and 0.501 for revaluers and non-revaluers, respectively, support the regression result. This result is similar to the predicted outcome and is also supported by prior studies of Barlev et al. (2007), Missonier-Piera (2007), Tay (2009), Iatridis and Kilirgiotis (2012), Choi et al. (2013), and Kang and Paik (2020). Moreover, the outcome can be explained by the debt covenant hypothesis. Thus, the hypothesis that there is a significant positive association between the level of debt and FAR decision is accepted.

Market-to-Book Ratio (MBR): The *p-value* .023 < .05 implies that the MBR has a statistically significant influence on FAR decisions. Exp (B) = 1.190 denotes that for every 1% increase in MBR, the chances of FAR increased by 19 times. The mean values of 5.212 and 3.468 for revaluers and non-revaluers, respectively, also indicate that companies with a higher MBR are more likely to revalue their fixed assets. However, the increase in MBR before revaluation might be caused by the "selective disclosure" of information to large shareholders or institutional investors before they become public. Thus, information asymmetry could better explain why MBR increases before the official disclosure of revaluation decisions to the general public. These results are supported by the findings of Barlev et al. (2007) and Tay (2009) but contradict the findings of Lin and Peasnell (2000). Thus, the hypothesis concerning the relationship between MBR and FAR decisions is accepted.

Age of the Company (AGE): Although the regression result indicates a positive association between AGE and FAR decision, the p-value .213 > .05 implies that the association is not significant. This result does not completely match the expected outcome. However, the corresponding mean and median AGE of 24.00 and 26.00 for revaluers compared with 24.30 and 20.50 for non-revaluers. These results affirm that FAR is more preferable to older companies compared to newer companies, which is consistent with our predicted outcome.

Log Total Assets (LTA): The *p-value* of the size variable LTA is .000 < .05. This implies that LTA has a statistically significant influence on FAR. Exp (B) = 1.862 also suggests that for every 1% in LTA, the chances of asset revaluation increases by 86 times. This result is similar to the corresponding hypothesis of this study and is supported by the findings of Lin and Peasnell (2000), Seng and Su (2010), and Rafay et al. (2019). However, the descriptive statistics about LTA reveal that there is implicitly no difference between revaluer and non-revaluer companies on FAR decision, which is also in line with the findings of Poerwati et al. (2020). As several alternatives can be used as a proxy for the size variable, the results of this variable should be interpreted with caution.

Table 8: Summary Result of Hypothesis Test

Hypothesis	Statement	Result
H_1	There is a significant positive association between the level of debt and FAR.	Accepted
H_2	There is a significant negative association between corporate liquidity and FAR	Rejected
H_3	There is a significant positive association between growth potential and FAR	Accepted
H_4:	*There is a significant positive association between firm size and FAR*	Accepted
H_5:	There is a significant (positive or negative) association between FAI and FAR	Accepted
H_6:	There is a significant (positive or negative) association between NPAT and FAR	Accepted
H_7:	There is a significant positive association between firm age and FAR	Rejected
H_8:	There is a significant association (positive or negative) between NTY and FAR	Accepted
H_9:	There is a significant association between market conditions and FAR	Accepted

CONCLUSION

FAR is one of the most controversial issues allied with three separate but interrelated fields of business – accounting, finance, and valuation. Similar to other emerging countries in South Asia, corporate FAR is a common practice in Bangladesh. Though downward FAR is allowed throughout the world, we found no evidence of the same in Bangladesh. However, there are variations in the application of upward FAR among different countries. Many researchers have raised doubts about the fairness of FAR reports. The existing literature has shown mixed results regarding the factors and motives behind FAR. The official purpose of FAR is to present a more accurate picture of the fixed assets in the balance sheet. However, improving the borrowing capacity, reducing the possibility and amount of the political cost, signaling future performance, and enhancing stock prices have become common motives for corporate FAR.

The descriptive statistics and the logistic regression model have confirmed that seven variables, which include market conditions, profitability, nationality, indebtedness, the intensity of fixed assets, future prospects, and company size, have a statistically significant influence on corporate FAR. However, the logistic regression model could not find any significant impact of the CR and company age on FAR decisions. The finding that the chances of FAR are more than three times higher in a bull market than a bear market signifies the use of FAR to inflate share prices before the Bangladesh stock market crash in 2010–11. The findings of this study are assumed to help regulators and professional bodies to recognize the factors leading to FAR decisions and to revamp their roles in strengthening the capital market and the accounting profession as well. This study will serve as the basis for drafting the FAR framework and assisting corporate management to approach FAR decisions with due circumspection. The findings of the three new variables will also contribute to the existing literature on corporate FAR.

The current study has some limitations, which should be kept in mind while generalizing the findings regarding FAR. First, the research findings are on non-financial listed companies in Bangladesh. Second, the devastating 2010–11 stock market crash in Bangladesh happened during the study period when many economic factors might not have worked properly, which could generate misleading results. Thus, further research on FAR should incorporate the financial sectors and non-listed companies. Moreover, research on the qualitative aspects of FAR is also needed to measure the perception of investors, professionals, and academics.

REFERENCES

Abdel-Khalik, A. R. (2010). Fair value accounting and stewardship. *Accounting Perspectives, 9*(4), 253–269.

Aboody, D., Barth, M. E., & Kasznik, R. (1999). Revaluation of fixed assets and future firm performance: evidence from the UK. *Journal of Accounting and Economics, 26*(1-3), 147–171.

Alam, S. (2014). Applicability of revaluation model in Bangladesh: an empirical analysis. *Jagannath University Journal of Business Studies, 4*(1&2), 77–93.

Azmi, A. F., & Ali, S. (2019). Fixed assets revaluation and future firm performance: empirical evidence from Indonesia. *The Indonesian Journal of Accounting Research, 22*(3), 419– 448.

Bae, J., Lee, J., & Kim, E. (2019). Does fixed asset revaluation build trust between management and investors? *Sustainability, 11*(13), 3700. doi:10.3390/su11133700

Baek, H. Y., & Lee, D. Y. (2016). Motives for and effects of asset revaluation: an examination of South Korean data. *Emerging Markets Finance & Trade, 52*, 2808–2817.

Ballas, A., Panagiotoub, V., & Tzovasc, C. (2014). Accounting choices for tangible assets: a study of Greek firms. *SPOUDAI Journal of Economics and Business, 64*(4), 18–38.

Barac, Z. A., & Sodan, S. (2011). Motives for asset revaluation policy choice in Croatia. *Croatian Operational Research Review, 2*(1), 60–70.

Barlev, B., Fried, D., Hadda, J. R., & Livna, J. (2007). Reevaluation of revaluations: a cross-country examination of the motives and effects on future performance. *Journal of Business Finance & Accounting, 34*(7&8), 1025–1050.

Brown, P., Izan, H. Y., & Loh, A. L. (1992). Fixed asset revaluation and managerial incentives. *ABACUS, 28*(1), 36–57.

Chainirun, P., & Narktabtee, K. (2009). The evidence of management motivation to revalue property plant and equipment in Thailand. *NIDA Business Journal, 5*, 134–155.

Cheng, C. S., & Lin, S. W. (2009). When do firms revalue their assets upwards? Evidence from the UK. *International Journal of Accounting and Information Management, 17*(2), 166–188.

Choi, T. H., Pae, J., Park, S., & Song, Y. (2013). Asset revaluations: motives and choice of items to revalue. *Asia-Pacific Journal of Accounting & Economics, 20*(2), 144–171.

Christensen, H. B., & Nikolaev, V. V. (2013). Does fair value accounting for non-financial assets pass the market test? *Rev Account Stud, 18*(3), 734–775.

Courtenay, S. M., & Cahan, S. F. (2004). The impact of debt on market reactions to the revaluation of noncurrent assets. *Pacific-Basin Finance Journal, 12*(2), 219–243.

Gaeremynck, A., & Veugelers, R. (1999). The revaluation of assets as a signaling device: a theoretical and an empirical analysis. *Accounting and Business Research, 29*(2), 123–138.

Gaffikin, M. (2007). Accounting research and theory: the age of neo-empiricism. *The Australasian Accounting Business & Finance Journal, 1*(1), 1–17.

Ghio, A., Filip, A., & Jeny, A. (2018). Fair value disclosures and fair value hierarchy: literature review on the implementation of IFRS 13 and SFAS 157.

Habibullah, M., & Hossain, S. Z. (2017). Bangladesh stock market bubble burst: the transgression of economic factors. *Research Bulletin, 41*(1), 51–63.

Hasan, M. S., Rahman, R. A., & Hossain, S. Z. (2014). Corporate accruals practices of listed companies in Bangladesh. *European Journal of Economics and Management, 1*(1), 17–46.

Herrmann, D., Saudagaran, S. M., & Thomas, W. B. (2005). The quality of fair value measurement for property, plant and equipment. *Accounting Forum, 30*(1), 43–59.

Hossain, M. K. (2020). Shareholding patterns and financial performance: evidence from the banking sector in Bangladesh. *Management & Accounting Review, 19*(1), 135–168.

IASB. (2005). *International accounting standard No. 16: property, plant, and equipment.* London: International Accounting Standards Board.

Iatridis, G. E., & Kilirgiotis, G. (2012). Incentives for fixed asset revaluations: the UK evidence. *Journal of Applied Accounting Research, 13*(1), 5–20.

Jaggi, B., & Tusi, J. (2001). Management motivation and market assessment: revaluations of fixed assets. *Journal of International Financial Management and Accounting, 12*(2), 160–187.

Jefriyanto, & Mulya, H. (2019). Fixed asset revaluation: decision making. *International Journal of Science and Research, 8*(2), 433–439.

Kang, N. R., & Paik, T. Y. (2020). Who will take costs incurred by revaluation? The choice between two kinds of measurements. *Academy of Accounting and Financial Studies Journal, 24*(2), 1528-2635-24-2-524.

Khaled, K. I. (2011). *Share market inquiry committee, 2011.* Dhaka: Ministry of Finance, The Peoples' Republic of Bangladesh.

Kothari, S. P., Shu, S., & Wysocki, P. D. (2009). Do managers withhold bad news? *Journal of Accounting Research, 47*(1), 241–276.

Kovacs, D. M. (2013). *The role and application of fair value accounting in the Hungarian regulatory framework.* PhD thesis, Corvinus University of Budapest, Budapest, Hungary.

Lin, Y. C., & Peasnell, K. V. (2000). Fixed asset revaluation and equity depletion in the UK. *Journal of Business Finance & Accounting, 27*(3&4), 359–394.

Lopes, A. B., & Walker, M. (2012). Asset revaluations, future firm performance and firm-level corporate governance arrangements: new evidence from Brazil. *The British Accounting Review, 44*(2), 53–67.

Madison, K. J. (2014). *Agency theory and stewardship theory integrated, expanded, and bounded by context: an empirical investigation of structure, behavior, and performance within family firms.* PhD thesis, University of Tennessee, Knoxville, Tennessee, USA.

Majercakova, D., & Skoda, M. (2015). Fair value in financial statements after financial crisis. *Journal of Applied Accounting Research, 16*(3), 312–332.

Mamun, A., Basher, S., Hoque, N., & Ali, M. H. (2018). Does stock market development affect economic growth? Econometric evidence from Bangladesh. *Management & Accounting Review, 17*(1), 123–144.

Missonier-Piera, F. (2007). Motives for fixed-asset revaluation: an empirical analysis with Swiss data. *The International Journal of Accounting, 42*(2), 186–205.

Nijam, H. M. (2018). Motives for reporting fixed assets at revalued amount: evidence from a developing economy. *Global Business Review, 19*(3), 604–622.

Palea, V. (2014). Fair value accounting and its usefulness to financial statement users. *Journal of Financial Reporting and Accounting, 12*(2), 102–116.

Poerwati, R. T., Hardiningsih, P., Srimindarti, C., & Sundari, R. I. (2020). Does the company's scale, fixed asset intensity and operating cash flow affect asset revaluation? *Jurnal Analisis Bisnis Ekonomi, 18*(1), 1–13.

Rafay, A., Yasser, F., & Khalid, Z. (2019). Revaluation of non-current assets under IAS-16: possibility of any managerial inducement: evidence from a South Asian economy. *DLSU Business & Economics Review, 29*(1), 93–105.

Rahman, M. T. (2017). Revaluation of fixed assets before IPO: a study on textile industry in Bangladesh. *Journal of Finance and Accounting, 5*(5), 200–205.

Rahman, M. T., Hossain, S. Z., & Habibullah, M. (2017). Stock market crash in Bangladesh: the moneymaking psychology of domestic investors. *American Journal of Theoretical and Applied Business, 3*(3), 43–53.

Rahman, M. T., Hossain, S. Z., & Omar, N. (2017). Factors influencing subscription of IPO in Bangladesh. *International Journal of Economics, Management and Accounting, 25*(3), 529–548.

Ronen, J. (2008). To fair value or not to fair value: a broader perspective. *ABACUS, 44*(2), 181–208.

Safiuddin, M. (2018). Creative accounting practices by Bangladeshi companies: a study on recent share market crisis in Bangladesh. *Australian Academy of Accounting and Finance Review, 4*(1), 15–21.

Sellhorn, T., & Stie, C. (2019). Fair value measurement for long-lived operating assets: research evidence. *European Accounting Review, 28*(3), 573–603.

Seng, D., & Su, J. (2010). Managerial incentives behind fixed asset revaluations: evidence from New Zealand firms. *Department of Accountancy and Business Law, Working Paper Series No. 3, University of Otago*, 1–33.

Solikhah, B., Hastuti, S., Asrori, and Budiyono, I. (2020). Fixed assets revaluation to increase value relevance of financial statements. *Journal of Critical Reviews 7*(5), 589–595.

Song, Y., & Pae, J. (2019). The impact of appraisal quality on the voluntary disclosure of asset revaluation. *Asia-Pacific Journal of Financial Studies, 48*(5), 615–639.

Tabari, N. Y., & Adi, M. (2014). Factors affecting the decision to revaluation of assets in listed companies of Tehran stock exchange(TSE). *International Journal of Scientific Management and Development, 2*(8), 373–377.

Tay, I. (2009). *Fixed asset revaluation: management incentives and market reactions.* master's thesis, Lincoln University, Chester County, Pennsylvania, USA.

Wang, Z. (2006). Upward revaluation of fixed assets. *Journal of Business & Economics Research (JBER), 4*(1), 53–58.

Yao, D. F., Percy, M., & Hu, F. (2015). Fair value accounting for non-current assets and audit fees: evidence from Australian companies. *Journal of Contemporary Accounting & Economics, 11*(1), 31–45.

Yoo, C. Y., Choi, T. H., & Pae, J. (2018). The case of the asset revaluation boom in Korea during the global financial crisis. *Journal of Business Finance & Accounting, 45*(1&2), 92–114.

Zakaria, A., Edwards, D. J., Holt, G. D., & Ramchandran, V. (2014). A review of property, plant and equipment asset revaluation decision making in Indonesia: development of a conceptual model. *Mindanao Journal of Science and Technology, 12*, 109–28.