Timing, Recurrence, and Effects of Fixed Asset Revaluation: Evidence from Bangladesh

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ABSTRACT

This study intended to explore when and how often fixed asset revaluation (FAR) is practiced in Bangladesh and explain the impacts of FAR on net asset value (NAV), stock prices, and debts of companies. Based on 175 listed companies on the Dhaka Stock Exchange, this study found increasing use of the revaluation model where the textile industry witnessed the highest number of revaluations. Most of the listed companies were irregular revaluer, and they performed FAR during the bull market in 2010. Most newly listed companies did it just before their initial public offerings (IPO). The results of the Wilcoxon signed-rank test imply that the changes in NAV, stock prices, and total debts after revaluation were statistically significant. This study found evidence of enhancing debt capacity and stock prices of several companies through improved NAV. The findings will assist regulators to recognize the consequence of revaluation and enable them to take an appropriate stance for controlling abusive and creative reporting. The study will also make investors cautious about companies with revaluation induced assets. This study suggests that companies practicing the revaluation model should perform FAR on regular intervals to reduce information asymmetry about assets' value and thus help improve investors' confidence.

Key words: Fair Value Accounting, IAS 16, PP&E, Bull-bear Market, Information Asymmetry, Net Asset Value
JEL Classifications: G1, G11, M41, M48

1. INTRODUCTION

A company requires periodic revaluation of its property, plant, and equipment (PP&E) for a trustworthy presentation financial position in the balance sheet (Yoo et al., 2018). Fixed asset revaluation (FAR) is the formal process of restating the book value of an asset to its fair value (Brown et al., 1992; Rafay et al., 2019). The users of financial statements acknowledge the fair value of assets as more relevant to make apposite investments and other decisions (Barac and Sodan, 2011; Chea, 2011; Dudycz and Praźników, 2020). By providing fair value information of fixed assets, FAR helps reduce information asymmetry that, in turn, minimizes the opportunistic behavior of the management and facilitates accurate investment decisions (Zakaria et al., 2014). Although FAR is a usual accounting policy decision in many developed and developing countries the historical cost model is still the dominant practice in Bangladesh. However, the use of FAR is gradually increasing in Bangladesh (Rahman and Hossain, 2020).

Companies in Bangladesh practice FAR voluntarily following the guidelines of the International Accounting Standard (IAS) 16. IAS 16 states that any PP&E item shall be recorded in the books of accounts at its cost price on the recognition date (International Accounting Standards Board, 2005). However, companies can choose either the cost model or the revaluation model to show the PP&E item in the succeeding balance sheet. The revaluation model requires a company to report a PP&E item at its revalued amount after subtracting subsequent accumulated depreciation (International Accounting Standards Board, 2005). Usually, fixed tangible assets hold a significant part of the total

assets of a company. Thus the selection of valuation method has a substantial influence on financial figures furnished in financial statements (Ballas et al., 2014).

The accounting cycle helps reflect the acquisition price of an asset in the financial statements of a company (Hitz, 2007, Kovacs, 2013). Although subsequent revaluation of fixed assets is highly subjective, in many situations, for example, business reorganizations, mergers, acquisitions, and planning for initial public offerings (IPO) require the application of FAR (Damodaran, 2016; Rahman, 2017). Revaluation decisions also disseminate essential information about companies to investors that ultimately reduce information asymmetry (Brown et al.,1992). FAR requires an adjusting entry, which has no direct impact on the cash inflows of a firm. Moreover, it has the involvement of costs in performing the revaluation (Brown et al.,1992). However, a growing trend is observed in the use of the FAR model in many countries (Firmansyah et al., 2017). In this context, stakeholders might be interested to know– why corporate entities practice FAR in Bangladesh and around the world.

The main argument behind FAR may be to show the fair value of fixed assets in the balance sheets of the respective companies (Azmi and Ali, 2019). Besides, companies applying the FAR model may have one or more objectives, such as determining the actual rate of return; identifying the appropriate market value of fixed assets; getting a bank loan by mortgaging assets; settling an asset price in case of merger or acquisition; communicating performance expectations for enhancing borrowing capacity and avoiding takeovers (Brown et al., 1992; Abody et al., 1999). Moreover, through upward FAR, managers can increase the equity of the stockholders, reduce the debt to equity ratio (DER), ensure an appropriate debt-equity mix in corporate capital structure, and reduce the debt costs (Azmi and Ali, 2019). Furthermore, upward FAR through the resultant increase of assets as well as equity also reduce profitability ratios, such as return on equity (ROE) and return on assets (ROA).

Although there are many justifications for FAR, corporate entities perform it on an opportunistic basis to capture some benefits (Rahman and Hossain, 2020). The study of Iatridis and Kilirgiotis (2012) has also revealed that firms usually practice FAR when they expect to have the highest favorable financial outcome. Herrmann et al. (2005) have argued that the historical cost model is sensitive to less manipulation than the revaluation model, and it is considered a more authentic way of presenting fixed assets. FAR is also criticized as a matter of managerial discretion because market values of fixed assets are usually unavailable, and estimations are unverifiable (Barac and Sodan, 2011). When FAR perform for the interest of managers or the controlling shareholders, then the authenticity of financial statements may be questionable to stakeholders, especially atomistic and let alone stockholders (Abody et al., 1999).

Despite many suspicions and criticisms about the fairness and application of the FAR model as mentioned by Majercakova and Skoda (2015), Rahman and Hossain (2020), The probe committee formed to investigate the stock market crash in Bangladesh in 2010-2011 has indicated FAR as one of the main reasons behind the crash (Khaled, 2011). Although many studies on FAR have done in developed countries, the findings concerning the timing, frequency, and accounting effects of FAR may not be identical in Bangladesh. It is due to the difference in the regulatory setting, market environment, and value system. For example, only a few families owned most companies in Bangladesh, and the managers of those companies have a connection to families with dominant shareholdings in those companies.

Therefore, investors, analysts, regulators, and academics might have a great interest in the issues concerning FAR in Bangladesh. In the above backdrop, this study intends to answer few questions, such as when companies in Bangladesh apply the FAR model; whether the companies use the FAR model regularly; and what are the consequences of FAR on particular financial figures, namely the NAV, market price of shares, and corporate debts. Moreover, the market-based research evidence on FAR issues is very few in Bangladesh. Thus, the specific objective of this study is to explore a different aspect of corporate FAR in Bangladesh, more precisely, the timing, recurrence, and consequences of FAR. Section two of this paper reviews the related literature followed by the methodology used, results, and discussion concerning timing, reoccurrence, and motive for FAR, conclusion.

2. REVIEW OF LITERATURE

The application of the FAR model as an accounting policy choice has been a topic of long-standing debate among academics, investors, corporate managers, standard setters, and regulators (Christensen and Nikolaev, 2013; Rahman and Hossain, 2020). Therefore, empirical research on asset revaluation has been undertaken in many developed and developing countries covering the issues, such as the motivation behind FAR, factors influencing FAR, the timing of revaluation, the effects of FAR on future firm performance, and so forth. We reviewed many accessible studies on fair value and FAR to locate the research gap.

2.1. Accounting Theories Supporting FAR

Researchers, such as Godfrey et al. (2000), Gaffikin (2007), Ronen (2008), Chainirun and Narktabtee (2009), Abdel-Khalik (2010), Christensen and Nikolaev (2013), Madison (2014), Palea (2014), and Firmansyah et al. (2017) explained FAR with the help of accounting theories. A theory that governs most of the researches on FAR is the positive accounting theory (PAT). The fundamental of PAT is the consideration of rational choice theory that implies that materialistic self-interest or opportunistic behavior, which is the basis of all economic activities. Hence, self-interest is a driving force leading to the choice of accounting methods and policies (Gaffikin, 2007). To examine whether there are any hidden motives behind FAR, some researchers have applied PAT that has three fundamental hypotheses.

Firstly, the debt covenant hypothesis founded on the conflicting relationship between shareholders and debt holders. Here it is assumed that managers perform their job for the overall interests of owners and usually try to transfer wealth from debt holders to shareholders (Chainirun and Narktabtee, 2009). According to this

hypothesis, owner-managers are likely to select an accounting procedure that shows more current income or reduce the DER to avoid possible violations of debt covenant or to avoid default cost (Gaffikin, 2007). Second, the signaling hypothesis, which is constructed based on the assumption of information asymmetry that causes people outside the firm, especially the investors, confused about the inner meaning of the information disclosed by managers (Godfrey et al., 2000). Management can practice FAR to signal the performance of their companies in the future, and in turn, help resolve information asymmetry problems (Chainirun and Narktabtee, 2009). By performing FAR, companies provide positive signals to investors and creditors (Firmansyah et al., 2017). Finally, the political cost hypothesis implies that larger firms are most likely to use an accounting method to reduce their profit figures. Trade unions, government, consumer associations, and other community groups continuously monitor larger firms. The main focus of different user groups remains on the financial figure, mainly the profit figure. Hence, managers of larger firms choose accounting methods that lessen profit figures. The purpose of such a choice is to reduce the demands from customers for price cuts and pressure from labor unions for enhancing wages (Godfrey et al., 2000). FAR is also used to escape political costs by reducing a firm's profit via an increased amount of depreciation expenses (Christensen and Nikolaev, 2013).

Some researchers have also used the stewardship theory to explain the reasons behind FAR. Steward behavior focuses on serving others and, therefore, aligns with the interest of the principal (Madison, 2014). The stewardship concept can be a better option to evaluate how capable managers are to increase shareholders' value (Ronen, 2008). However, knowing only the fair value is not enough for investors to appraise the stewardship of managers. They also need to recognize the volume of resources that has sacrificed to get that fair value (Abdel-Khalik, 2010, Palea, 2014).

2.2. Objective of FAR
Many early studies of Easton et al. (1993), Aboody et al. (1999), Cheng and Lin (1999), Missonier-Piera (2007), Chainirun and Narktabtee (2009), Seng and Su (2010), Barac and Sodan (2011), Zakaria et al. (2014 attempted to find out motives behind FAR. The Australian study of Easton et al. (1993) stated that the primary objective of the FAR practice is to present the fair picture of fixed assets in the balance sheet followed by the motive to reduce the DER. Aboody et al. (1999) have observed that companies in the UK undertake upward FAR to indicate their better future operating performance. Cheng and Lin (1999), referring to prior studies, affirmed that upward FAR is practiced to reduce political costs, debt contracting costs, and the problem of information asymmetry. The research of Missonier-Piera (2007) stated that revaluation is a mechanism for improving creditors' perceptions about the economic strength of the concerned company, and thereby increasing its borrowing limit. Chainirun and Narktabtee (2009), opined that revaluation information signal investors regarding a company's status, growth opportunities, future performance, and liquidity. Seng and Su (2010) also proved the motive of reducing political costs.

Barac and Sodan (2011) found that opportunistic managers apply FAR as a trick to improve the borrowing capability of companies,

and thus, reduce the cost of borrowing. Zakaria et al. (2014) examined different motives behind FAR and accepted seven. Those are to enhance financial benefits and performance, decrease costs of debt contracting, diminish political costs and lessen the opportunistic action of management, offer value relevance, signal investors, and reduce the problem of information asymmetry. Rafay et al. (2019) stated that the reason behind FAR is to provide valuable information to investors and other stakeholders about the balance sheet. The study of Azmi and Ali (2019) explored that companies mainly perform FAR to take the tax advantage offered by the government in Indonesian. They also found that disclosure of the fair value of fixed assets is also another objective of FAR practice.

2.3. Factors Influencing FAR
The studies of Brown et al. (1992), Barlev et al. (2007), Missonier-Piera (2007), Barac and Sodan (2011), Iatridis and Kilirgiotis (2012), Lopes and Walker (2012), Tabari and Adi (2014), Wali (2015), Baek and Lee (2016), Nijam (2018), and Rafay et al., (2019) are related to factors affecting FAR decisions. Brown et al. (1992) observed that higher fixed asset intensity (FAI) and debt to asset ratio (DAR) with lower reserve & surplus influence FAR decisions. The study of Barlev et al. (2007) on 35 countries using different variables, such as leverage, liquidity, sources of financing, capital requirement, capital expenditure, market to book ratio (MBR), ROA, firm size, and frequency of revaluations in their logistic regression model and found them inspiring FAR decisions in many countries. But cash flows and market returns had no significant impact on FAR choice. Beyond the common factor– leverage, Missonier-Piera (2007) found high export sales positively associated with upward FAR.

Barac and Sodan (2011) found that companies in Croatia with low liquidity ratio, poor cash flow ratio, and increased debt are more likely to practice upward FAR. Iatridis and Kilirgiotis (2012), on the other hand, found that firm size is positively related to FAR choice. The study also found some opposing views that firms with foreign operations, low FAI, and high requirements for debt capital are more likely to apply the FAR model. Similarly, the Brazilian study of Lopes and Walker (2012) discovered that indebtedness and liquidity of the company have a positive influence on the FAR decision. By applying the regression model, Tabari and Adi (2014) found that DAR, operating cash flow, total assets, and FAI of companies have a significant influence on FAR choice.

Wali (2015) similar to some prior studies, found that companies with earlier accumulated loss and high leverage would likely practice FAR to avoid debt covenant in Tunisia. However, the research has explored institutional shareholding as a new factor that positively influences the FAR decision of companies. Baek and Lee (2016) have observed in their South Korean study that firms with a high cost of capital and debt are more likely to practice FAR. The Srilankan study of Nijam (2018) by applying the logistic regression and Mann–Whitney U test has found that the high share of land and building in total asset influence companies to use FAR practice. The study has also found that financial leverage is positively related to FAR. However, the study has found no effect of size, PP&E, ROA, and ROE on the choice of FAR model.

Utilizing the same model as used by Nijam (2018), the Pakistani study of Rafay et al. (2019) found that firm size, FAI, and stock dividends are positively related to FAR decisions.

2.3. FAR, Future Firm Performance, and Market Reaction

Some studies found the effects of FAR on future firm performance and market reactions. Aboody et al. (1999) observed that upward FAR has a positive influence on the expected performance predicted by income and cash flows. Jaggi and Tusi (2001) found that the current year's revaluation is positively related to firms' future operating income, indicating that FAR reflects the fair value and could be utilized to predict future performance. The South Korean study of Baek and Lee (2016) noticed that FAR reduces the cost of capital after the revaluation of assets. Jamshidian and Sharifabadi (2016) have found that capital appreciation induced by FAR or any other means enhances the future performance of companies in Iran. The study of Azmi and Ali (2019) observed a significant positive impact of FAR on net operating performance after 1 year of revaluation. Based on the research of South Korean data, Bae et al. (2019) found that FAR has a positive impact on the sustainability of the stock market by disclosing timely and relevant information. However, the study has argued that the practice of FAR by financially weak companies may create the risk of a market crash. The paper has emphasized the honesty of management behind the FAR decision. The study of Rahman and Hossain (2020) observed that FAR has a significant effect on the net asset value (NAV), FAI, and DER of companies in the subsequent year of revaluation. The study also found an increase of 427% in NAV and a decrease of 70% in DER originated essentially by FAR. The researchers have termed these as evidence of significant financial numbers game through FAR.

2.4. Timing and Recurrence of FAR

The accounting standards related to PP&E have given revaluing companies the liberty concerning the timing, recurrence, and scope of revaluation. Companies that practice FAR are required to revalue their PP&E items with regularity so that any material changes fixed assets can be reflected in the financial statements (IASB, 2005). However, it does not mean that companies need to revalue fixed assets every year. The study of Yoo et al. (2018) suggested that companies can revalue fixed assets every 3-5 years if there is no significant and volatile change in fair value. As FAR has a statistically significant impact on financial statements and, in turn, investors and other stakeholders, study findings on the timing, frequency, and effects of FAR may have an interest to them.

In Bangladesh, only a few studies have been found relevant to FAR. Among those, Razzaque et al. (2006) conducted their research on the textile industry and observed FAR is a medium of earnings management. Bangladesh stock market observed the most devastating crash during 2010-2011 that harshly affected millions of investors (Rahman et al., 2017). The probe committee report of Khaled (2011) has stated that FAR was one of the reasons behind the 2010-2011 share market crash in Bangladesh. Alam (2012) also identified the faulty asset revaluation practices in Bangladesh as one of the reasons behind the 2010-2011 stock market crash in the country. Hasan et al. (2014) supported the

study of Alam (2012) on nonfinancial companies in Bangladesh. Alam (2014) found the FAR practice is unpopular in Bangladesh, where he examined only the FAR done after the listing of the companies on the exchanges through IPO. The qualitative study of Safiuddin (2018) stated that companies in Bangladesh apply FAR to inflate earnings. Likewise, Rahman and Hossain (2020) found evidence of significant financial numbers game by using the FAR model. The review of the existing literature indicates that many researchers conducted their studies on FAR issues in both the developing and the developed countries. However, there is a dearth of FAR literature in Bangladesh. Also, most researches are indirectly related to FAR. None of the studies examined how frequently revaluer companies practice FAR. The literature in the context of Bangladesh is also a reflection of the effect of FAR on different financial statement figures and indicators. This literature gap is the main inspiration behind this research relating to timing, recurrence, and impact of FAR using a developing country setting.

3. METHODOLOGY OF THE STUDY

The current study is mainly quantitative in approach and descriptive in nature. Data used in this study have been extracted mostly from secondary sources, especially the annual reports of the sample companies. Other sources of secondary data include websites of concerned companies, prospectus of IPOs, and websites of the Dhaka stock exchange (DSE) and Bangladesh securities and exchange commission (BSEC). This study covers a period of 9 years ranging from 2007 to 2015. We have chosen the period thoughtfully to capture three important events related to FAR. Firstly, the accounting standard "IAS 16" adopted in Bangladesh on January 1, 2007, which guides the revaluation. Second, the Bangladesh stock market experienced an unprecedented crash in 2010-2011. Third, the BSEC issued its guidelines concerning FAR on August 18, 2013. Thus the period of study is appropriate to capture the cause-effect relationship of these events.

The total number of companies listed on the DSE up to December 31, 2015, was 571 under 22 industry categories, including corporate bond, treasury bond, and debenture. Among the companies, the population of the current study was all the 198 non-financial companies under 15 categories. Financial categories, such as banks and non-bank financial institutions, insurance companies, corporate bonds, treasury bonds, debentures, and mutual funds excluded because their assets' structures are different from that of the non-financial companies. The DSE listed non-financial companies are of two categories–revaluer and non-revaluer. Revaluer companies are those companies that revalued their fixed assets during the study period. Contrarily, non-revaluer companies are those that did not revalue their fixed assets during the study period. Among the 15 categories, we excluded the IT sector because our primary investigation found no evidence of FAR in this sector. We discarded the telecom industry because of extreme outlier values. We dropped 12 companies from the remaining industrial sectors in our sample for the non-availability of their annual reports and relevant data. Thus the study included all the remaining 175 listed companies under 13 industry categories. Data were primarily collected and recorded with the help of Microsoft Excel. Then we put the data into the Statistical Package for Social

Sciences (SPSS) worksheet for analysis. Since the data concerning NAV, the market price of the stock, and liabilities found not normally distributed, and the Wilcoxon Signed Ranks Test was applied to measure the significance of changes.

4. FINDING AND DISCUSSION

In this section, we incorporated the findings and discussions concerning timing, recurrence, and effects of FAR from the perspective of Bangladesh. Timing means the moment when revaluations are done, such as before IPO, after IPO, before merger and acquisition, and during the bull or bear market. Recurrence means the frequency of undertaking the revaluation by a particular company. From the revaluation viewpoint, firms can be divided into three categories– regular revaluers, occasional revaluers, and non-revaluers (Lin and Peasnell, 2000). Firms that perform revaluation of their assets regularly based on their accounting policy are called regular revaluers. Firms that perform revaluation on an irregular basis are called occasional revaluers. Non-revaluers are the companies that have not revalued their assets ever.

4.1. Timing of Fixed Asset Revaluation

Table 1 shows that among the 175 sample companies, 56% had a balance of revaluation surplus in their balance sheet. This picture indicates that the revaluation of fixed assets has become a common practice in Bangladesh. It is an indication of the gradual popularity of the revaluation model in Bangladesh. But only a few years back, the study of Alam (2014) found the revaluation model very was unpopular.

About half of the sample companies revalued their fixed assets during the study period, and around 7% of companies revalued their fixed assets before the study period. We found the number of

revaluer companies after the IPO was higher than the companies that performed revelation before the IPO. If we compare revaluer companies with the total companies listed through IPOs, the percentage will be very high. It is unique that many companies performed assets revaluation just before the IPO. This practice might raise questions about the motives of FAR in Bangladesh.

Table 2 shows the state of revaluation among different industry categories. We observed a total of 86 revaluations in the study of 1,161 company years. Among the 13 industry categories, the highest number of revaluations was noticed in the textile sector, followed by the engineering sector and pharmaceuticals and chemicals sector in that order. Among all the revaluation cases, 31.4% occurred in the textile sector, 17.44% in the engineering sector, and 16.28% in the pharmaceuticals and chemicals sector. The percentage of revaluation in the remaining ten sectors was negligible.

A total of 73 companies became listed on the DSE during the study period. It is evident from Table 3 that among the newly listed companies, more than 64% of the companies revalued their fixed assets either just before the IPO or after the IPO. Thus asset revaluation has been found a common practice for newly listed companies in Bangladesh.

Table 4 shows that almost three- fourths of the newly listed companies that practiced did it just before the IPO as against a mere 28% after the IPO. Here, the logic might be to show the real picture of companies or to provide a better impression of assets' condition to stakeholders. However, the implied intention might be to attract more public subscriptions or to get a higher price of the IPOs while issuing shares under the book-building method. Another objective might be to get a loan from financial institutions or selling bonds either to the public or institutions.

Table 5 shows whether FAR is conducted during a bull market or bear market. Here the frequency means the number of revaluations during the study period, where we counted more than one revaluation by a company. The first 5 years of the study period ranging from 2007 to 2011 were considered as the bull market, whereas the last 4 years under study ranging from 2012 to 2015 were considered the bear market. The market became bearish in the later part of

Table 1: Revaluation status of listed companies in Bangladesh

Revaluation status	Frequency	Percent
Revaluation before IPO	34	19.42
Revaluation after IPO	52	29.72
Revaluation before the study period	12	6.86
No revaluation	77	44.00
Total	175	100.00

Table 2: Sector-wise revaluation status during the study period

Serial	Industry category	Before IPO	After IPO	No of Revaluations	Percent
1.	Cement	2	2	4	4.65
2.	Ceramic	0	2	2	2.33
3.	Engineering	7	8	15	17.44
4.	Food and allied	1	4	5	5.81
5.	Fuel and power	0	2	2	2.33
6.	Jute	0	2	2	2.33
7.	Miscellaneous	2	4	6	6.98
8.	Paper and print	1	1	2	2.33
9.	Pharmaceuticals and chemicals	4	10	14	16.28
10.	Service and real estate	1	3	4	4.65
11.	Tannery	0	1	1	1.16
12.	Textile	14	13	27	31.40
13.	Travel and leisure	2	0	2	2.33
	Total	34	52	86	100.00

Table 3: Revaluation status of newly listed companies during the period of study

Revaluation Status	Frequency	Percent	Cumulative percent
Non-revaluer	26	35.62	38.36
Revaluer	47	64.38	100.0
Total	73	100	

Table 4: Time of revaluation by the newly listed revaluer companies

Time of FAR	Frequency	Percent	Cumulative Percent
Before IPO	34	72.34	95.2
After IPO	13	27.66	100.0
Total	47	100.0	

Table 5: Market condition and revaluation of fixed assets

Market condition	Frequency	Percent	Cumulative Percent
Bull Market	40	69.0	69.0
Bear Market	18	31.0	100.0
Total	58	100.0	

Table 6: Revaluation frequencies of the sample companies

Revaluation status	No of companies	Percent
Revalued assets twice or more during the study period	13	7.43
Revalued assets only once during the study period	72	41.14
Revalued assets only before the study period	12	6.86
Not revalued assets in the whole life	78	44.57
Total	175	100.00

Table 7: Descriptive statistics of the time gap between two revaluations

Description	Values
Minimum time gap between two revaluations	2 years
Maximum time gap between two revaluations	24 years
Average time gap between two revaluations	5.33 years
Std. Deviation of time gap between two revaluations	4.64
Total number of observation	30

2011. However, FAR decisions that influenced assets' figures in the balance sheet of 2011 were taken during the bull period and the market reactions were also observed in that period. As stated in the table, 69% of the revaluations took place during the bull market against 31% of revaluations that took place during the bear market. Even the FARs conducted during the bear market condition of 2012 might have related disclosures during the period when the market was bull. The consequence might be considered very significant in the context of asset revaluation in Bangladesh as it has raised some questions. Why most revaluer companies performed FAR during the bullish period when small price-sensitive information could play a significant market reaction? Had there been any relationship between market manipulation and the revaluation of fixed assets?

4.2. Recurrence of Fixed Asset Revaluation

Table 6 shows the recurrence of asset revaluation by the sample companies. It is evident from the table that among 175 sample companies, around 45% of the companies did not perform revaluation throughout their life. More than 41% of the companies conducted assets revaluation only once, 7% of the companies revalued their assets before the study period, and only around 7.5% of the companies revalued their fixed assets twice or more during the study period. According to the BSEC guideline on asset revaluation, companies can revalue their assets after every 3 years if they are willing to do that. However, only a few companies have been found to have their fixed assets revalued regularly. The companies that revalued their assets were irregular or occasional revaluers. The practice of non-revaluation or occasional revaluation might create further doubts about the fairness of motive for asset revaluation. If the motive was to show the real picture of fixed assets, why a significant portion of sample companies have not yet practiced FAR?

Table 7 shows the time gap between two revaluations by the companies that performed revaluation twice or more. In companies that performed revaluation twice or more during the study period, the minimum time gap between two revaluation dates was 2 (two) years with the maximum of 24 years, and the average gap was 5.33 years.

There is no scope for revaluation of the same group of assets held by a company in 3 years following the circulation of BSEC notification in 2013. However, some companies conducted FAR even after 2 years break before the circular. Only two companies performed FAR at regular intervals. Contrarily, most of the revaluer companies performed FAR based on chance or necessity without following a regular time interval. This practice of revaluation has again raised a question on the motives for their choice of the revaluation model. If the objective of revaluation was to show the fair market value of fixed assets, they could practice FAR regularly following a set time interval. Of course, the involvement of money in conducting FAR could influence the decisions in this respect.

4.3. Effects of FAR

Although both upward and downward FAR are allowed in Bangladesh, the study of Alam (2014) observed only upward revaluation of fixed assets by the DSE listed companies. Similarly, the current research has not found any instance of downward FAR by the sample companies. Besides, it is evident that companies, in the name of creative accounting, have performed FAR for getting a positive response in their IPOs (Safiuddin, 2018). Prior studies have identified two common motives behind FAR – enhancing borrowing capacity and inflating share price. Concerning these two, this study examines the effects of FAR one three selective variables, namely NAV, stock prices, and liabilities of revaluer companies. Subsequent findings and discussion are on the 52 revaluer companies, not all the 175 sample companies.

Table 8 shows the liabilities of revaluer companies in three different periods. The average amount of liabilities of the sample companies in the previous year of revaluation was BDT 2551.34 million. The amount increased to BDT 2738.71 (1.073 times) in the reporting year of revaluation that exhibited an increase of 7.31%. LT_{t2} increased by 12.17% as compared to LT_{t1}. A substantial change of 20.41% was observed considering the difference between the years before (LT_{t0}) and in the year following the reporting of revaluation surplus (LT_{t2}). All these changes, especially the change after revaluation, suggest that FAR influences the total liabilities of the revaluer companies.

Table 8: Effect of FAR on liabilities (in million BDT) of revaluer companies

Liability conditions on different points of time	N	Minimum	Maximum	Mean	Change
Liabilities in the preceding year of revaluation (LT_{t0})	52	35	33707	2551.34	N/A
Liabilities in the year of revaluation (LT_{t1})	52	31	41925	2738.71	7.31
Liabilities in the year following revaluation (LT_{t2})	52	45	45038	3072.06	12.17

Table 9: Effect of FAR on stock prices (in BDT) of revaluer companies

Stock prices on different points of time	n	Minimum	Maximum	Mean	Change
Stock prices in the preceding year of revaluation (MP_{t0})	52	7.00	411.00	79.79	N/A
Stock prices in the year of revaluation (MP_{t1})	52	8.00	561.00	113.08	41.72%
Stock prices in the year following revaluation (MP_{t2})	52	13.86	517.86	100.00	-11.57%

Table 10: Effect of FAR on NAV (in BDT) of revaluer companies

NAV on different points of time	n	Minimum	Maximum	Mean	Change
NAV before in the preceding year of Revaluation (NAV_{t0})	52	-34.00	272.00	31.81	N/A
NAV in the year of revaluation (NAV_{t1})	52	-9.30	1566.70	104.38	228.14%
NAV in the year following revaluation (NAV_{t2})	52	-16.20	1566.50	103.59	-0.76%

Table 11: Test statistics[a] of selective variables

Change between points of time	Z	Asymp. Sig. (2-tailed)	Difference
NAV_{t1} - NAV_{t0}	−6.220[b]	0.000	Significant
NAV_{t2} - NAV_{t0}	−6.247[b]	0.000	Significant
NAV_{t2} - NAV_{t1}	−0.428[c]	0.669	Insignificant
MP_{t1} - MP_{t0}	−2.006[b]	0.045	Significant
MP_{t2} - MP_{t0}	−0.605[b]	0.545	Insignificant
MP_{t2} - MP_{t1}	−1.031[c]	0.303	Insignificant
LT_{t1} - LT_{t0}	−2.468[b]	0.014	Significant
LT_{t2} - LT_{t0}	−3.807[b]	0.000	Significant
LT_{t2} - LT_{t1}	−3.925[b]	0.000	Significant

[a]Wilcoxon Signed Ranks Test; [b]Based on negative ranks; [c]Based on positive ranks

More specifically, these results sufficiently explain the FAR motive of enhancing the borrowing capacity of respective companies.

Table 9 shows that the average stock price of revaluer companies was BDT 79.79 before revaluation, which witnessed a substantial growth of 41.72% in the year of revaluation. It signifies that the motive behind asset revaluation in Bangladesh was to increase the stock prices of the respective companies. However, the price, instead of continuous increase, again dropped in the subsequent year (MP_{t2}) by 11.57%. The market price of stocks is the complex function of many factors, such as regular market corrections, government policies, change in the regulatory framework, the economic condition of the respective country, stock bubble, and price-sensitive information about companies. However, the FAR decision by the companies might be the most influential factor behind the change in the stock price in the year in which the revaluation surplus was reported (MP_{t1}). Though explaining the reasons for a drastic reduction in the stock price in the subsequent year might be a difficult job, the FAR was one of the principal causes of such radical changes in the Bangladesh stock market that directed to a crash in 2010-2011. A large majority of the FARs occurred during the bullish period when a very negligible PSI influenced stock prices heavily.

Conversely, when the market crashed, stock prices of revaluer companies decreased heavily. Another reason might be the short term effect of FAR on the stock market. Since upward FAR is just a paper-based increase of different figures in financial statements that upward change might not be long-lasting, and hence, a fall of stock price might be the natural outcome.

Table 10 shows the most profound effect of FAR, where the mean NAV growth was 228.14%, which suggests an unusual increase in NAV immediately after the adjustment of the revaluation surplus. This effect has a relationship on overall liabilities and stock price movement of the revaluers companies. Thus the FAR choices of companies can further be explained by the debt covenant and signaling hypotheses. However, a very slight reduction in the NAV – less than one percent – was observed 1 year after revaluation. The NAV condition after 1 year of revaluation can be considered a stable position, which may be explained by dividend payment, increase in retained earnings, and adjustment in revaluation reserve.

As the data sets are not normally distributed, we run the Wilcoxon signed-rank test to see whether the changes in NAV, MP, and liabilities were significant. The test results in Table 11 revealed a significant difference between NAV_{t0} and NAV_{t1}, n = 52, Z = −6.220, P < 0.05. The difference was also significant between NAV_{t0} and NAV_{t2}. However, the difference was insignificant between NAV_{t1} and NAV_{t2}. However, the difference was insignificant between NAV_{t1} and NAV_{t2}. It indicates that revaluation plays a significant role in NAV change. Contrarily, the difference between MP_{t0} and MP_{t2} was insignificant, and the difference between MP_{t0} and MP_{t1} was insignificant. These indicate that revaluation decision and its reflection in the balance sheet affects the market price of shares for a comparatively shorter period. However, the effect of FAR on total liabilities was significant in all aspects. We observed an increasing trend in liabilities after the revaluation. It indicates that companies may use FAR as a creative accounting technique to enhance their borrowing capacity.

5. CONCLUSION

FAR, a long-standing concern of academics, financial analysts, corporate stakeholders, and regulators, is related to accounting, valuation, and capital market operation. There are differences

among countries regarding the application of upward FAR, though there is no restriction on downward FAR. Besides the developed world, corporate FAR has been a routine accounting practice in some Asian countries, such as Bangladesh, India, Pakistan, Indonesia, Malaysia, and Singapore. The existing literature on FAR suggests that exposing the real picture of fixed assets is the well-articulated primary motive of corporate FAR. However, enhancing debt capacity, reducing political cost, and signaling the future performance have been identified as implied motives of corporate FAR. Moreover, there are doubts among the shareholders, other stakeholders, and researchers on the reliability of FAR reports disclosed by corporate entities.

Although FAR is a voluntary accounting policy choice and is not permitted in some countries, it has been a practice in Bangladesh with an increasing trend. However, companies that preferred the revaluation model were mostly irregular revaluers. The study found that only a few companies practice FAR regularly. The cost of revaluation might be the main reason behind irregular revaluation or non-revaluation. The study found that most companies revalued their fixed assets during the bull market that created a scope for raising a question about the motive behind revaluation. The study found FAR is a well-received practice for companies that are interested in going public through IPO. We observed that companies performed FAR just before the IPO on the ground of disclosing the real value of their fixed assets. The study found FAR was more popular in the textile sector, where 31.4% of companies performed revaluation, followed by the engineering sector 17.44%, and pharmaceuticals and chemicals sector 16.28% in that order.

Similar to prior studies in developed countries, this study from Bangladesh perspective supports the motives of increasing debt capacity and stocks' prices of respective companies by resorting to enhanced NAV. Therefore, the users of financial statements should be careful while interpreting financial statements containing post-revaluation information, and if required, they should solicit more details. In some cases, the application of the political cost hypothesis and the signaling theory can explain the cause-effect relationship regarding FAR.

The current study found a statistically significant effect of FAR on the market price of stocks, NAV, and liabilities and, in turn, helped the investors and regulators to understand the consequence of revaluation. This understanding will enable regulators to take an appropriate position to prevent abusive and creative reporting. It will also help investors to make judicious investment decisions in companies with inflated assets due to revaluation surplus. This study implies that companies following the revaluation model should exercise FAR on regular intervals to reduce information asymmetry about the current price of their assets and thus help enhance investors' confidence in the weak and inefficient capital market in Bangladesh.

As the study excluded financial sectors, the results may lack generalization. Moreover, the study examined a few selective effects of FAR. Future research may include both the financial and non-financial sectors and showing more diverse impacts of FAR.

This paper is the first attempt to examine the timing, recurrence, and effects of FAR from the perspective of Bangladesh. The current study will add new feathers to the existing stock of knowledge.

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