The Timing of Asset Sales and Earnings Manipulation: An Empirical Analysis

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Abstract: The study examined accounting manipulations using timing of assets (independent variable) and firm’s financial performance (dependent variable) using Return on assets, Return on Equity and Earnings per share based on Secondary data obtained from National stock exchange and tries to ascertain whether firms use TAT to manipulate financial results. TATs were subjected to Hausmann test and also regressed against performance variable. Findings indicate that TAT has significant relationships with ROA, ROE and EPS implying it could be used for accounting manipulations. The study confirmed a positive relationship of TAT with ROA and EPS and we conclude that an increase in TAT increases ROA and EPS. Conversely, TAT also has a negative relationship with ROE confirming that a decrease in TAT increases ROE and vice versa. Managers can deploy TAT for economic or accounting manipulation incentives. Managers can use TAT to smooth earnings for bonus compensation, for debt covenants and for political costs reasons in line with the various hypothesis stated in the theoretical framework.

Keywords: Timing of Asset Sales, Return on Asset, Return on Equity, Earnings per Share.

I. INTRODUCTION

Financial accounting conveys information to various stakeholders which include shareholders, creditors, regulators, employees, analysts etc. However, despite the role of regulators and auditors a lot of firms that have reported profits went into bankruptcy. This anomaly generated interests amongst standard setters, regulators, accounting practitioners and other users of accounting information as how to mitigate these problems. The underlying reason for these failures were identified as the latitude given managers to choose accounting methods, internal control weakness and weak corporate governance mechanisms.

Managers are given the liberty by accounting rules to choose a particular method and set accounting policies for the firm. The self-interested motive of these managers sometimes influences the choice. It is widely espoused in accounting literature that managers act in this manner to increase bonus compensation accrued in their favor, to meet debt covenant, to present a positive impression of the firm to investors and influence market price, to stabilize fluctuating earnings, to reduce tax and for political cost reasons.

These dimensions are perceived as conflict of interest as they may not be in congruent with the shareholders interest while some argue that sometimes their actions may be beneficial to the firm. Many methods are deployed by managers to achieve this. First income can be increased through premature sales recognition, increase of interest receivables, and treat loan as sales and swaps. Secondly through decreasing expenses by bogus provision, reduction of tax provisioning, excessive write off or big bath accounting. Thirdly, through increases in assets such as increase closing inventory, capitalization of expenses, lengthen depreciation lives, generous bad debt, enhancement of goodwill, enhancement of brands and intangibles and revaluation of assets. Fourthly, it may be achieved through decreasing liabilities such as off statement of financial position financing and reclassifying debt as equity.

Accounting manipulation is the deliberate alteration and falsification of financial information to satisfy the whims and caprices of preparers with the intent to deceive users either by creating plausible outlook of the firm to outsiders or satisfying the expectation of owners or the agent. Accounting Manipulation can be divided into two separate groups which are Creative Accounting which means keeping the accounting practices into the limits of legality (Earnings Management) and Accounting Fraud which means violating the accounting rules and principles (Earnings Manipulation).

The problems created by accounting manipulations are myriad. It creates distorted financial information which affects accounting quality and decision making. It leads to wrong tax assessment, poor credit decisions, wrong share pricing, payment of unmerited amounts as compensation and wrong dividend decisions as dividend may be paid out of capital. Regulators responded to this anomaly by tightening of standards, Security and exchange rules. The aim of the study is to ascertain if managers of manufacturing firms manipulate earnings through the timing of income recognition from disposal of long-lived assets and investments. This is essential because managers can select which asset to be disposed, the time to sale and the price to sale thus having the liberty of choice enhances actualization of self-motive. Furthermore, the historical cost convention requires that assets be valued at historical cost of acquisition and carried in the books
and changes can only be reported during the period of sale. This implies that changes on the value of the asset are only recognized at the time of sale. This gives managers the opportunity to manipulate earnings.

Prior studies on the use of timing of assets were all carried out in advanced countries using financial statements prepared under generally accepted Accounting principles (GAAP). The paucity of research on this subject in Asian countries motivates further study on the subject due to differences in culture, technology and the stage of economic growth. Secondly, weak institutions in the developing countries encourage accounting manipulations to which India may not be exempted. Thirdly, the implementation of International accounting standards require new statements of accounts and dearth of skills may create opportunities for manipulations and thus the necessity to carry out new studies based on financial statements prepared under IFRS. In summary, the factors outlined above create gaps necessary for further studies. Perhaps, IFRS have an influence in the manipulative behavior of firms.

II. LITERATURE

Theoretical framework

Income Smoothing Hypothesis

Income smoothing means the use of accounting methods to average income from one period to another. Firms embark on this practice out of the belief that investors or capital providers will be willing to pay something extra on the market value of stock when the income of a firm is steady from period to period as against firms with fluctuations in income. It does not necessarily involve violation of accounting rules but rather managers leveraging on latitude provided by accounting rules to massage accounting numbers. Examples include bogus provisioning for bad debts even when the loans are not likely to go bad, over statement of expenses and understatement of receivables. The motivation is normally two fold either to satisfy external users of accounting information; creditors and investors or internal users of information, management which may be for compensation benefits or threat of management displacement. The underlying assumption when viewed from the perspective of satisfying management is that without smoothing there will be dispersion in earnings over the years. The higher the variability in earnings the higher the risk that investors and creditors will have negative outlook of the firm. This will in turn affect investors’ capitalization rate with negative effect on the share prices of the firm.

Bonus plan Hypothesis

The bonus plan hypothesis suggests that Managers of organizations with bonus plans are more inclined to selecting accounting techniques that pull reported earnings from future to the present period with the intention to raise bonuses due for personal gains in the current year. The hypothesis explains that managers of firms with bonus plans are more likely to use accounting methods that raise or optimize present period reported income. According to Watts & Zimmerman (1990) the choice is assumed will raise current value of bonuses if the reward committee of the board of directors do not modify for changes in the method chosen. This behaviour by managers is tagged opportunistic due to the deliberate selection of accounting procedures which satisfy their selfish intent.

Debt covenant hypothesis

Debt covenant hypothesis explains the behaviour of borrowing firms. It states that when firms are close to default in meeting debt obligations managers are inclined to making accounting policy selections that pull reported profits from future accounting periods to the current period. This will increase current year profits and the firm will avoid debt covenant violations. The theory assumes the higher the firms’ debt/equity ratio the more difficult it is for firms to comply with debt covenants and this increases the possibility of the firm incurring additional cost for technical default and managers will most likely use accounting techniques that increase income. Managers will use their initiatives to select accounting methods to increase income, reduce debt problems and costs associated with default (Watts & Zimmerman, 1990). Managers in other words will indulge in accounting manipulation.

Political cost Hypothesis

PCH assumes that the higher the political cost imposed on the firm the higher the possibility of managers deploying accounting methods to deter reported profits in the current period and push it to future periods. High profit can result on increased political pressure in form of higher taxes or stiffer regulations such as amendments in standards of reporting. The theory explains that bigger and not small firms possess a higher propensity to deploy accounting selection techniques to mitigate reported gains. Thus size is a proxy for political attention. Underlying this hypothesis is the assumption that it is expensive for individuals to be educated about whether accounting earnings represent monopoly profits and to contract with others in the political process to enact laws and regulations that enhance their welfare. As a result, rational individuals are not well informed of the activities. The political process does not diverge from the market place and given associated costs of monitoring and obtaining information managers are motivated to exercise their sense of judgement in choosing accounting methods that will satisfy their intention in reducing associated costs and satisfying parties involved (Watts & Zimmerman, 1990).
For the political cost hypothesis, Deegan & Unerman (2006) observed that if managers believed they are being watched and monitored by regulators, they are likely to choose accounting techniques that mitigate reported profit, and consequently reduce the probability and perception that individuals will conclude that the firm is exploitative. The hypothesis further explains that large firms will attract higher political focus than smaller firms. This could serve as a motivation for managers to select accounting methods and use earnings management techniques that reduce profit. The increased political attention could take the form of new regulation and government interference with potential negative effects on firms’ performance. To combat this negative effect, the firm may resort to self-help by using changes in accounting methods to reduce profit thus lowering risk of sanctions from regulators.

**Empirical Review**

Accounting manipulations are made possible by flexible accounting rules and selection of accounting techniques, poor regulation, and liberty granted managers to make decisions regarding expectations about the future, timing of transactions, and creation of non-existent transactions, reclassification, falsification and presentation of inaccurate figures (Akabom (2011) Flexibility of accounting rules is universal and cuts across even highly regulated accounting environment such as USA (Largay,2002; Mulford & Comiskey,2002). One of the methods used for accounting manipulations is timing of asset sales. According to Dey(2004) timing of assets offer loopholes for managers to raise operating profit so as to influence the outcome of financial performance. Teoh et al (1998) in a study of dimensions of timing of assets by Initial public offer (IPO) firms conclude that IPO firms carry out extensive write off of bad debts in the years prior to the offer and the year of the IPO than firms in the same industry without IPO. However, no extensive write-off of bad debts was noticed in the IPO firms’ years after the IPO. Beauty et al (2002) noted firms’ time account collection provisioning and write-offs to create outcome of accounting results. The realization of assets is a function of the disparity between carrying amounts in the books of the firm and the market price or amount the buyers are willing to pay thus creating an accounting profit or loss. Firms have been shown to time sales of long-lived assets or use early debt retirement to manage reported performance (Bartor,1993). A costlier type of asset timing is the modification of investment decision by firms to achieve short term gains. Mande & File (2000) showed that Chief Executive officers alter and also reduce costs of Research & Development to achieve increases in profit and positive short term performance improvements. Black et al. (1998) examined the sale of long lived asset as a technique of massaging income and concluded that where accounting rules allow managers will exploit the loopholes to time asset sales and influence accounting reports. Such behaviors are curtailed once accounting rules are tightened. However, Black et al (1988) also concluded that firms can shift manipulative accounting activity among a variety of methods so, even if certain loopholes in regulation are eliminated accounting manipulation behavior is likely to persist.

**III. RESEARCH METHODOLOGY**

**Sample**

The population of the study includes all the firms listed on NSE in the food processing sector of the economy. The period of study is 2009 to 2017.

**Variables**

**Independent**

The independent variable is related parties transaction (RPT). This is measured as the total of business transacted for firm I in period t between directors and related parties to the firm

**Dependent**

The dependent variables in this study are financial performance variables Return on Assets (ROA) Return on Equity (ROE) and Earnings per share.

Return on Assets (ROA) = \( \frac{\text{Net Profit after tax} + \text{interest}}{\text{Total Assets}} \)

Return on Equity (ROE) = \( \frac{\text{Net Profit after tax} - \text{pref. Div}}{\text{Shareholders’ Equity}} \)

Earnings per share (EPS) = \( \frac{\text{Net profit (loss) attributable to ordinary shareholders}}{\text{Weighted Average number of ordinary shares outstanding during the period}} \)

**Model specification**

The functional relationship between the dependent and independent variable, the disturbance, coefficient and intercepts for accounting manipulations and financial performance for the purpose of the research is as stated below:

\[ FP = f(\text{TAXNS}) \]

\[ F_p = \text{ROA, ROE and EPS} \]
ROA = f(TATXNS)  
ROE = f(TATXNS)  
EPS = f(TATXNS) 

From the above functional relationship, the econometric models are specified thus:

ROA = α₀ + α₁ TATXNS + U₁,t  (iv)
ROE = β₀ + β₁ TATXNS + U₂,t  (v)
EPS = w₀ + w₁ TATXNS + U₃,t  (vi)

Using equations iv to vi above, the mathematical form of the models are specified as:

ROA = α₀ + α₁ TATXNS  (vii)
ROE = β₀ + β₁ TATXNS  (viii)
EPS = w₀ + w₁ TATXNS  (ix)

IV. RESULT

H₀₁: Timing of Assets transactions do not significantly affect Returns on Assets.

Table 1: the relationship between TAT and ROA; Fixed Effects Model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-23.31798</td>
<td>1.594079</td>
<td>-14.62787</td>
<td>0.0000</td>
</tr>
<tr>
<td>TAT</td>
<td>3.398822</td>
<td>0.233215</td>
<td>14.57378</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Effects Specification

Cross-section fixed (dummy variables)

| R-squared | 0.796509 | Mean dependent var | - |
| Adjusted R-squared | 0.770668 | S.D. dependent var | - |
| S.E. of regression | 1.250285 | Akaike info criterion | - |
| Sum squared resid | 98.48524 | Schwarz criterion | - |
| Log likelihood | 3.514382 | Hannan-Quinn criter. | - |
| F-statistic | 30.82441 | Durbin-Watson stat | - |
| Prob(F-statistic) | 0.000000 | - | - |

Source: Author's Computation using Eviews version 7.1

The output of Hausman test (see appendix) gives a p-value of 0.0000 which is less than 0.05 significance level, hence we reject the hypothesis that random effect model is more appropriate than fixed effect model in assessing the effect of Timing of Assets Transactions (TAT) on Return on Assets (ROA). Based on the Hausmann test result, we use fixed effect to test the hypothesis which states that Timing of Assets Transactions (TAT) do not significantly affect return on Assets (ROA).

From the fixed effect estimation result in table 1, the regression of ROA on TAT showed an intercept of -23.31798, which imply that the average level of ROA is -23.31798, when TAT is zero. A positive relationship exist between TAT and EPS in the slope with a coefficient of 3.398822 and p-value of 0.000 which is less than the usual 0.05 level of significance. Based on the p-value, we reject the hypothesis that timing assets transaction do not significantly affect return on assets. This imply that timing of assets have significant effect on ROA.
The positive coefficient means that a unit increase in timing of assets transaction increases the average level of return on assets by 3.4 and vice versa. The coefficient of determination is 80 percent which connotes that timing of assets transaction accounts for 80 percent of the variation in return on assets.

**H02**: Timing of Assets transactions do not significantly affect Returns on Equity.

**Table2: The relationship between RPT and ROE; Fixed Effects Model**

<table>
<thead>
<tr>
<th>Dependent Variable:</th>
<th>ROE Method: Panel</th>
<th>Least Squares</th>
<th>Periods included: 9</th>
<th>Cross-sections included: 8</th>
<th>Total panel observations: 72</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td>Coefficient</td>
<td>Std. Error</td>
<td>t-Statistic</td>
<td>Prob.</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>11.17566</td>
<td>2.387421</td>
<td>4.681061</td>
<td>0.0000</td>
<td></td>
</tr>
<tr>
<td>TAT</td>
<td>-1.572124</td>
<td>0.349281</td>
<td>-4.501022</td>
<td>0.0000</td>
<td></td>
</tr>
</tbody>
</table>

**Effects Specification**

| R-squared           | 0.328381         | Mean dependent var | 0.475833 |
| Adjusted R-squared | 0.243096         | S.D. dependent var | 2.152325 |
| S.E. of regression  | 1.872528         | Akaike info criteron | 4.208924 |
| Sum squared resid   | 220.9007         | Schwarz criteron   | 4.493508 |
| Log likelihood      | -142.5213        | Hannan-Quinn criter. | 4.322218 |
| F-statistic         | 3.850396         | Durbin-Watson stat | 1.221512 |
| Prob(F-statistic)   | 0.000964         |                |                      |

The output of Hausman test (see appendix) shows a p-value of 0.004 which is lower than 0.05 significance level and based on this result we reject the hypothesis that random effect model is more appropriate than fixed effect model in analyzing the effect of Timing of Assets Transactions (TAT) on Return on Equity (ROE). The Hausmann test result guides the study to select fixed effect model to test the hypothesis which states that Timing of Assets Transactions (TAT) do not significantly affect return on Equity (ROE).

From the output of the fixed effect estimation in table 2, the regression of ROE on TAT showed an intercept of 11.17566 which connotes that the average level of ROE is 11.17566, when TAT is zero. A negative relationship exist between TAT and ROE in the slope with a coefficient of -1.572124 and p-value of 0.0000 which is lower than the usual 0.05 level of significance. Based on the p-value, we reject the hypothesis which states that timing of assets transactions do not significantly affect return on equity.

The negative coefficient means that any unit rise in timing of assets transaction reduces the average level of return on assets by 1.57 and vice versa. The coefficient of determination is 33 percent which connotes that timing of assets transaction is responsible for 33 percent of the variation in return on equity.

**H03**: Timing of Assets transactions do not significantly affect Earnings per share.

**Table3: The relationship between TAT and EPS; Fixed Effect Model**

<table>
<thead>
<tr>
<th>Dependent Variable:</th>
<th>EPS Method: Panel Least Squares</th>
<th>Periods included: 9</th>
<th>Cross-sections included: 8</th>
<th>Total panel observations: 72</th>
</tr>
</thead>
</table>

The negative coefficient means that any unit increase in timing of assets transaction increases the average level of return on assets by 1.57 and vice versa. The coefficient of determination is 33 percent which connotes that timing of assets transaction accounts for 33 percent of the variation in return on assets.
Transactions (TAT) does not significantly affect Earnings per Share (EPS). Therefore, the random effect model is used to analyze the hypothesis that, Timing of Assets Transactions (TAT) does not significantly affect Earnings per Share (EPS).

From the fixed effect estimation result in table 3, the regression of EPS on TAT shows an intercept of -6.458841, which means that the average level of EPS is -6.458841, when TAT is zero. There is a positive relationship between TAT and EPS in terms of its slope, which has a coefficient of 1.494167, and p-value of 0.0145, which is less than the usual 0.05 level of significance. Based on the p-value we reject the null hypothesis which specifies that timing assets transaction do not significantly affect earnings per share.

The positive coefficient means that, for every unit increase in timing of assets transaction the average level of return on assets is estimated to decreases by 1.49. Coefficient of determination is 9 percent and is an evidence that timing of assets transaction is responsible for 9 percent of the variation in earnings per share.

V. DISCUSSION OF FINDINGS

Managers exercise discretion on whether to sale assets or not and even when the decision is taken which asset to sale and when. The decisions are within their control and depend on the motivation to sale. Previous empirical studies lend credence to the possibility of using asset sales as yardstick to manipulate earnings. Slovin et.al (1995) suggested that firms can influence reported earnings through choosing the period which assets are sold. Wolk et. al (1989) timing of assets sales is probably the most direct influential method of manipulating earnings. The motivation for this type of activity is varied. Economic factors motivating asset sales such as changing market valuations may be small relative to asset sales. Apart from economic motivations John and Ofek(1995) suspect the need to manage operating performance is the underlying reason.

The type of assets also affects the use to which it is put to time sales for accounting manipulation purposes. Certain types of assets sales will be more adaptable to earnings management, generally those involving investment assets and especially highly liquid assets where management is unlikely to possess superior information about intrinsic worth (Poitras et. al, 2002). This implies substantial changes in the ability to time asset sales for performance incentives.

Using a sample of 653 firms Bartov (1993) tried to find the relationship between timing of asset sales and earnings management and concluded that managers attempt to misrepresent actual earnings through timing of asset transactions in order to achieve earnings smoothing objectives. The study shows that certain firms with unstable earnings indulge in asset sales to smooth earnings.

Black, sellers and Manly (1998) studied a sample of Australian, New Zealand and UK firms and observed that though timing of assets sales can be used to influence earnings, the results do not extend to situations where firms possess the liberty to revalue the assets without recourse to timing asset sales to impact earnings.

Poitras, Wilkins and Kwan (2002) studied the Singapore Stock Exchange from 1989 to 1991 and confirmed that assets sales could be used for accounting manipulations although the incentive may be economic or otherwise. Our study collaborates findings by prior research notably Bartov (1993) and Poitras et.al (2002) and confirm that timing of asset sales can be deployed to massage financial earnings. This study reveals that timing of asset sales explains 80% variability in ROA, 33% in ROE and 9

From the Hausman test result (see appendix) the p-value is 0.3350; this is greater than 0.05 significance level, hence we do not reject the assumption that random effect model is more appropriate than fixed effect model in analyzing the effect of Timing of Assets Transactions (TAT) on Earnings per Share (EPS).
percent in EPS. There is a significant relationship between timing of asset sales and ROA, ROE and EPS. The incentives to indulge in managing financial reports are myriad. This include to obtain finance at reduced cost (deschow, sloan & swinney, 1995), to fulfill debt covenants and to attract external funding. The desire to obtain external financing through asset sales can motivate to a large extent why and when an asset is sold and is considered an important explanation for the association between financial performance and timing of assets for firms. Interestingly, the rate of variation is explained by 80% indicating the significant role asset sales play on performance of firms. The motivation to modify accounting results differ across industries (kinunen et al, 1995 and Mcnichols et.al 1998). Manufacturing industries is a capital intensive industry and the need to raise additional finance can possibly influence timing of asset decisions. The economic performances of the firm also play an important role in accounting manipulation decisions of firms. According to Burgstahler and Dichev (1997) firms with poor economic performance have greater and possibly different incentives to manage earnings than firms exhibiting stronger performance. This can possibly explain the significant relationship between timing of asset sales and financial performance depending on the performance bracket the firms in our industry of study fall within.

Furthermore, managers exercise discretion over assets sales in terms of why, when and how. This discretion enables managers either to speed or slow down the process of asset sales. The nature of the industry also plays a significant role for instance service oriented industries are likely to have lower number of assets for disposal in contrast to property and investment firms. Thus, the nature of industry of our study being a manufacturing sector may significantly influence the result of our study. Interestingly, even though accounting manipulations may be practiced some asset disposal may be a direct consequence of real economic condition and not susceptible to time adjusted factors. Other factors which probably impact asset disposal are types of activities engaged in, financial capacity of the firm, the firms’ strategic investment plan, managerial control, ownership structure of the firm and quality of assets for disposal.

VI. CONCLUSION

We found a significant effect between TAT and ROA, ROE and EPS. The reason is not far-fetched; the timing of asset could be a deliberate policy of the firm to raise external capital without the intent to manipulate accounting performance. This consideration may be motivated by the nature of the industry which is capital intensive. However, this line of thought should not be considered in isolation as the economic consideration may be over ridden by the motive to manipulate accounting performance. Hence, this study suggests that our result should not be taken without further analysis of the motives for using TAT by firms. Furthermore, the study established a negative relationship between TAT and ROE implying an increase in TAT decreases ROE. Yet again the shareholding structure is suspect as prior empirical evidence suggests shareholding structure could affect earnings management incentives. Conversely, the study confirms a positive relationship of TAT on ROA and EPS. This could be explained further by the insight that as more assets are sold and converted to capital for financing and investment decision the more the returns. At a certain point there will be optimum point where the firm maximizes its return on assets and returns per share to shareholders. Our findings suggest that manufacturing firms apart from economic motives can be motivated by earnings management to time sales its assets to manipulate earnings. This collaborates prior studies by Bartov (1993) and postrika (2002).

VII. REFERENCES