ACCESSING THE EFFICIENCY OF BENEISH M-SCORE IN DETECTING EARNINGS MANIPULATION

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Abstract: Businesses are expected to reveal accurate and trustworthy financial information in the business world. The deliberate manipulation of a company's reported financial performance is known as financial statement fraud. Key financial statement for the company In the name of creative accounting, frauds are allowed to go unpunished. However, they must be examined for lessons learned and methods to prevent or lessen the occurrence of similar scams in the future. For shareholders, especially the average person who only has access to the company's reported financial figures, it is crucial. Using the Earnings Quality, Beneish models of fraud detection, this study aims to identify financial statement fraud practices in the Indian pharmaceutical industry for the benefit of investors. The outcome demonstrates that financial statement fraud exists in the investigated companies. Therefore, it is anticipated that the study will contribute to enhancing investors' perceptions of a company's performance as indicated by its financial figures.

Keywords: "Financial Statement Fraud", "Earnings Quality", "De-Angelo Model"," Beneish Model"

I.INTRODUCTION

Businesses are expected to reveal accurate and trustworthy financial information in the business world. Only when companies report accurate and trustworthy accounting information can participants in the financial market make logical and accurate investment decisions. The quality of accounting data that companies report has a significant impact on the efficiency of the money and capital markets. One of the most talked-about subjects in the modern business world is accounting manipulation. A study by the Association of Certified Fraud Examiners (ACFE) found that about 10% of white collar crime cases involve fraudulent financial statements. Frauds is a serious issue for businesses everywhere. The duty of management to implement efficient fraud management programs is currently the focus of governments and regulators. As long as people are working in organizations, there is a chance of fraud, regardless of the size of the organization, the nation, or the sector. The deliberate manipulation of a company's reported financial performance is known as financial statement fraud. Accrual accounting is used to carry out this manipulation. Earnings management enters the picture here. Creative accounting allows major corporate financial shenanigans to go unpunished. they must be examined for lessons learned and methods to prevent or lessen the occurrence of similar scams in the future. For shareholders, especially the average person who only has access to the company's reported financial figures, it is crucial. For the benefit of investors, this study aims to identify financial statement fraud in India's pharmaceutical industry. One of India's most promising industries is the pharmaceutical sector. Due to intense competition, these aggressive accounting manipulations are more volatile, so it is crucial that Indian corporations inform financial users about them. Therefore, the goal of this study is to shed light on the extent of financial statement fraud in the Indian pharmaceutical industry for both shareholders and the general public.

statement of the problem:

In today's business world, investor trust and market efficiency depend heavily on the accuracy and dependability of financial reporting. Financial statement fraud is still a serious risk, though, especially in industries that are competitive and dynamic like India's pharmaceutical industry. Since earnings manipulation under the guise of creative accounting is so common, it is imperative to identify and stop these dishonest practices in order to safeguard shareholders and the larger financial system. The purpose of this study is to assess how well Beneish's M-Score model detects possible earnings

manipulation in Indian pharmaceutical companies in order to combat the issue of financial statement fraud and improve the decision-making skills of stakeholders, regulators, and investors.\

Objectives:
- ➢ To estimate the probabilities of the companies being fraudulent based upon fraudulent cases over the period of time.
- ➢ To examine the effectiveness of the M-score in identifying FSF.
- ➢ To analyze the relationship between financial manipulation and the M-score.
- ➢ To evaluate the usefulness of these models in detecting FSF in different industries and companies.
- ➢ To review the literature on financial statement fraud (FSF) and its detection methods

Research questions:
- ➢ How well does the Beneish M-Score model identify financial statement fraud in the pharmaceutical industry in India?

- ➢ Which financial ratios—DSRI, GMI, AQI, SGI, DEPI, SGAI, LVGI, and TATA—are most important for spotting possible earnings manipulation in pharmaceutical companies?

- ➢ Do companies that have been flagged as potential manipulators and those that have not shows a statistically significant difference in their M-Score results?

- ➢ Which financial behavior patterns—such as aggressive revenue recovery and expense capitalization—are most frequently linked to pharmaceutical companies with high M-Scores?

- ➢ How trustworthy is the M-Score in relation to other conventional fraud detection models (like Dechow's F-Score) for Indian pharmaceutical companies?

- ➢ How do fast sales growth and the possibility of earnings manipulation among the pharmaceutical companies under study relate to each other?

Significance of the study:
This study is important because it uses the Beneish M-Score model to identify possible financial statement fraud in the Indian pharmaceutical industry. By giving auditors, regulators, and investors a useful tool to spot earnings manipulation, it improves transparency and safeguards the interests of all parties involved. It emphasizes the necessity of more robust financial reporting procedures for pharmaceutical companies in order to preserve their reputation and investor confidence. The study also supports larger initiatives to enhance corporate governance and financial market integrity, as well as forensic accounting research.

II.LITERATURE REVIEW

Financial statements fraud has always been an area of interest to the researchers worldwide.

Feng Li et al (2011) analysed the link between earnings management and earnings quality for the Chinese firms listed in the Shanghai and Shenzhen stock exchange for the period of 2003-2007. The earnings quality is measured by four separate earnings attributes: accruals quality, earnings persistence, earnings predictability, and earnings smoothness. We find that the stressed/bankrupt firms prefer opportunistic earnings management; the non stressed/non-bankrupt firms are more likely to choose more efficient earnings management than the stressed/non-bankrupt firms. We find that earnings management performs better than earnings quality in predicting future profitability. We also find that the earnings quality has deteriorated over the sample period; the number of stressed/bankrupt firms increased and the number of non-stressed/non-bankrupt firms decreased.

Beneish, M.D. (2001) haves made comparision of three definitions of earnings management used by accounting researchers and three methods of estimating it: aggregate accruals, specific accruals and discontinuities in earnings distribution. He has discussed evidence relating to the reasons for income-increasing earnings management, income-decreasing earnings management and specific contexts, e.g. financial institutions with regulatory constraints. This study concluded that, although the evidence is limited, managers are more likely to manipulate income up rather than down; and identifies some opportunities for further research.

Bistrova, J. & Lace, N. (2012) have analysed 118 companies quoted on Central and Eastern European stock exchanges. Their findings prove the negative relationship between the quality corporate governance and the level of accruals. The statistically significant results are based on the cash flow accruals, while balance sheet accruals, though showing a

consistent pattern, do not provide significant evidence. Net income and operating cash flow discrepancy also detect lower than average earnings quality if a company has weak corporate governance system, while sufficiently good earnings plausibility in case of the well-managed companies.

Sandeep Goel (2013) has attempted to detect financial shenanigans in the Telecom Sector of India using Beneish Model. He has tried to contribute by detecting these shenanigans in totality not in isolation, on five parameters: quality of earnings, quality of revenue, volatility of income, discretionary accruals, and manipulation score. The results indicate the visibility of financial shenanigans in the companies under study.

Normah Omar et.al. (2014) discusses a local case of MMHB and analyses how the fraud was committed and the detection techniques involved. Beneish Model and Ratios Analysis were selected as detection tools in reference to this case. The operating efficiency ratio analysis shows that the company recorded fictitious revenue amounting to RM 198,727. Therefore, these tools used in our investigation confirm that the company involve in manipulating their financial statements.

III.RESEARCH METHODOLOGY

Research Design:
1. **Data Source:**
   secondary data (annual reports, financial statements from company websites, stock exchange filings, etc.) have been used.
2. **Statistical/Analytical Tools:**
   The main analytical tool used is the Beneish M-Score Model, which integrates eight financial ratios to detect the likelihood of earnings manipulation
3. **Sample size and data collection:**
The sample consists of selected Indian pharmaceutical companies listed on the stock exchanges, focusing on data from the financial year 2023–2024.
   1. Cipla Ltd
   2. Lupin Ltd
   3. Sun Pharmaceutical Industries Ltd
   4. Cadila Healthcare Ltd
   5. Divi's laboratories Ltd
   6. Dr. Reddy's laboratories Ltd
   7. Torrent Pharmaceuticals Ltd
   8. Aurobindo Pharma Ltd
   9. Biocon Ltd
   10. Piramal Pharma Ltd

The Beneish m-score model:
When used as a financial forensic tool, the Beneish M-Score Model (Beneish Model) can help assess the likelihood of earnings manipulation in a business and pinpoint areas that might need closer examination. One technique for identifying businesses that have a propensity to falsify their financial statements is the Beneish M-Score (Beneish, 2012). Companies with higher M-Scores are empirically more likely to commit fraud.
 If the M-score >
3- 2.22, it shows indications of financial fraud within companies.
The M score is based on a combination of the following eight different indices:
DSRI = Days' Sales in Receivables Index. This measures the ratio of days' sales in receivables versus prior year as an indicator of revenue inflation.
 GMI = Gross Margin Index. This is measured as the ratio of gross margin versus prior year. A firm with poorer prospects is more likely to manipulate earnings.
AQI = Asset Quality Index. Asset quality is measured as the ratio of non-current assets other than plant, property and equipment to total assets. AQI is the ratio of asset quality versus prior year.
SGI = Sales Growth Index. This measures the ratio of sales versus prior year. While sales growth is not itself a measure of manipulation growth companies are likely to find them-selves under pressure to manipulate in order to keep up appearances.
DEPI = Depreciation Index. This is measured as the ratio of the rate of depreciation versus prior year. A slower rate of depreciation (DEPI greater than 1) may mean that the firm is revising useful asset life assumptions upwards, or adopting a new method that is income friendly.

SGAI = Sales, General and Administrative expenses Index. This measures the ratio of SGA expenses to the prior year. This is used on the assumption that analysts would interpret a disproportionate increase in sales as a negative signal about firm future prospects

LVGI = Leverage Index. This measures the ratio of total debt to total assets versus prior year. It is intended to capture debt covenants incentives for earnings manipulation.

TATA - Total Accruals to Total Assets. This assesses the extent to which managers make discretionary accounting choices to alter earnings. Total accruals are calculated as the change in working capital accounts other than cash less depreciation.
These eight variables are then calculated together using the following formula:

$$M = -4.84 + 0.92*DSRI + 0.528*GMI + 0.404*AQI + 0.892*SGI + 0.115*DEPI - 0.172*SGAI + 4.679 * TATA - .327*LVGI$$

A score greater than -2.22 (i.e. less negative than this) signals a strong likelihood of a firm being a manipulator. An M-Score of less than -2.22 suggests the company will not be a manipulator. The analysis of the financial statement requires at least two period of financial reporting to detect unusual event. However, to identify the trend of the company's financial statement reporting, it is suggested to analyse the data for five reporting period.

IV. RESULT

Manipulation score (the Beneish m-score model):
The manipulation score has been calculated using Beneish model with eight variables for the selected companies for the period of 2023-2024.

M-SCORE VALUES OF PHARMACEUTICAL COMPANIES		
COMPANY	VALUES	ASSESSMENT
Cipla Ltd	-2.298	Neutral
Lupin Ltd	-2.796	Neutral
Sun Pharmaceutical Industries Ltd	-2.593	Neutral
Cadila Healthcare Ltd (Zydus Cadila)	-2.181	Neutral
Divi's Laboratories Ltd	-2.100	Assess revenue recognition Days
Dr. Reddy's Laboratories Ltd	-2.259	Neutral
Torrent Pharmaceuticals Ltd	-3.043	Neutral
Aurobindo Pharma Ltd	-2.358	Neutral
Biocon Ltd	-2.135	Assess revenue recognition Days
Piramal Pharma Ltd	-2.632	Neutral

Interpretation
- According to this model, there is little chance of earnings manipulation for the majority of the companies (Cipla, Lupin, Sun Pharmaceutical, Cadila Healthcare, Dr. Reddy's, Torrent Pharmaceuticals, Aurobindo Pharma, and Piramal Pharma) because their M-Scores are below -2.22.
- Despite Divi's Laboratories and Biocon having M-Scores below -2.22, the assessment suggests "Assess revenue recognition Days." Even though the M-Score by itself does not imply a high likelihood of manipulation, this suggests that their revenue recognition procedures—more especially, the time it takes to recognize revenue—may be worth investigating further. The nature of their company, particular accounting rules, or other elements may be to blame for this.

V. KEY FINDINGS

- Most listed pharmaceutical companies (Cipla, Lupin, Sun Pharmaceutical, Cadila Healthcare, Dr. Reddy's, Torrent Pharmaceuticals, Aurobindo Pharma, and Piramal Pharma) have M-Scores that are well below the -2.22 threshold, indicating a low likelihood of earnings manipulation. According to the Beneish model, this indicates a low likelihood of earnings manipulation. This conclusion is supported by the evaluation of these businesses, which is "Neutral."

- Possible Research Topics (Divi's Labs & Biocon): The assessment emphasizes the significance of "Assess revenue recognition Days," even though Divi's Laboratories and Biocon also have M-Scores below -2.22. This suggests that their revenue recognition procedures merit more research even though the overall M-Score does not indicate a high risk of manipulation. Comparing their revenue recognition times could be one way to do this.

VI. RECOMMENDATIONS

1. **Regular Application of Beneish M-Score**:
   The Beneish M-Score is a preventive tool that pharmaceutical companies and auditors should use on a regular basis to identify early indicators of earnings manipulation.
2. **Strengthen Internal Controls**:
   To reduce the risk of accounting fraud, businesses need to improve their internal financial controls and compliance systems.
3. **Increase Transparency in Financial Reporting**:
   To keep investors confident, businesses should provide clear and comprehensive financial information, particularly when it comes to accruals, asset quality, and receivables.
4. **Regulatory Enforcement**:
   For listed companies, regulatory agencies such as SEBI should promote or require regular fraud detection audits using models like M-Score.
5. **Focused Monitoring of High-Risk Companies**:
   It is important to keep a closer eye out for possible financial manipulation in companies with rapid sales growth, falling depreciation rates, or increasing accruals.

VII. CONCLUSION

According to the Beneish M-Score analysis of the Indian pharmaceutical industry, a subset of companies show a drift toward potentially aggressive accounting, even though companies like Torrent Pharmaceuticals Ltd. (-3.043), Lupin Ltd. (-2.796), and Sun Pharmaceutical Industries Ltd. (-2.593) demonstrate strong financial integrity. Companies like Divi's Laboratories Ltd. (-2.100) and Biocon Ltd. (-2.135) exhibit concerning signs in their DSRI, AQI, and SGI values, suggesting potentially aggressive cost capitalization and revenue recognition, even though they do not exceed the manipulation threshold. The study concludes that in order to maintain stakeholder confidence and ensure financial reporting integrity, proactive regulatory oversight, enhanced transparency through improved disclosure and sector-specific accounting standards, and careful monitoring are all required.

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