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EARNINGS MANAGEMENT: AN EVIDENCE FROM INDIAN AUTOMOBILE SECTOR

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ABSTRACT

Using a sample of Indian automobile companies from 2014 to 2019, we find strong evidence for earnings management. This is particularly true for firms affiliated with business groups that also receive financial assistance from their member firms. We base our analysis on the Beneish M. Model, a standard model that exists in the earning management literature to detect manipulation. Our study provides serious policy implications to curb earning management practices, thereby helps investors to ascertain the true market value of the firm.

Keywords—Automobile Industry, Beneish M-Score Model, Earnings Manipulations detection, Financial Statements

INTRODUCTION

One of the major factors behind India's' growth story is the Foreign Investment in the economy. It is always easy for a developing economy like India to attract investment due to higher expected returns. Domestic as well as Foreign investors keep pouring money because of the higher returns. In recent times India witnessed a great inflow of funds in its corporate via the stock market. The stock market/ capital market works on trust but scams like Satyam (2009), Lehman Brothers (2008), WorldCom (2002), Xerox (2002), and Enron (2001) use to shake the confidence of investors.

Right now, India is on such a growth trajectory where companies have tremendous opportunities for growth if they are able to keep investing in the business at the right time. In recent times Reliance, Jio is an example of a company ripening fruits of investment capability, as they were able to invest funds at the right time. Companies are competing to attract funds and it is CXOs who are competing to attract investment. These CXOs are getting handsome packages, so they are under huge pressure to perform and their performances are gauged by the company's financial results. Due to this pressure sometimes CXOs are motivated towards earnings management to improve the organization's stock market performance.

Earnings Management has been defined by different authors/ researchers in different manners. (Healy, 1998) says, "Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers."[1] (Schipper, 1989) defines "Earnings Management as the purposeful

intervention in the external financial reporting process with the intent of private gains." [2] In short, earnings management is the manipulation in the financial statements to portray the company's financial position as per its objectives.

Indian Automobile Industry

Automobile Industry-running in the top gear (August 28, 2020) The Indian automobile sector is one of the biggest in the world. It contributes over 7.1% of India's Gross Domestic Product (GDP). It accounts for around 22% of India's manufacturing GDP. India's automobile sector has achieved 5th position in the automobile market in 2019 with sales of 3.81 million units. It is expected to become the 3rd biggest automotive market in terms of volume by 2026 with annual revenue of US$ 300 billion and can generate 65 million new jobs with 12% of GDP. To cope up with this growing industry needs huge investment.[3]

Singh. V. 2017 concludes that the automobile sector is considered an important indicator of the economic prosperity of any country especially developing nations like India. It has a great multiplier value in the economy. It creates a great opportunity for its ancillary industries like steel, machine tools, electronics, glass, rubber, robots, software, and many others. His research found that factors like Employment, GDP, FDI, etc have a positive correlation with the automobile industry.[4]

LITERATURE REVIEW

(Maccarthy, 2017) examines the case of Enron Corporation to explore the possibility of corporate fraud. To do this, they employ Beneish M Model and Altman Z score to analyze financial data for over 5 years. They find that the financial statements are manipulated as prepared by the company. In addition to this, they suggest that using Beneish M Model and Altman Z score enables to detect earnings management with better accuracy.[5]

(Kanapickienė&Grundienė, 2015) studies financial statements of 40 fraudulent companies (experimental group) and financial statements of 125 non-fraudulent companies (control group). To predict financial statement fraud, they employ a logistic regression model on the estimates derived from 51 financial ratios. The desire to fulfil growth-target promises and certain debt obligations are the driving forces behind it.[6]

(Goel, 2015) testify quality of revenues and quality of earnings using a sample of 10 companies from the automobile sector.They find the evidence of earning manipulation in 5 of 10 companies. [7]

(Beneish, 1999) concludes that there is a relation between the financial statement variables and the possibility of manipulation. Their study proves that the financial data has a consistent relationship with earnings manipulation and can be used to check the reliability of earnings. Like (Goel, 2015), they also find a clear evidence of earning manipulation in 40 out of a sample of 80 companies.[8]

(Safiq& Seles, 2019) study the effect of financial targets, external pressures, and financial distress on the possibility of earnings management with the help of the Beneish M. Model. Their study involves a sample of 123 manufacturing companies listed on the Indonesia Stock Exchange analyzed. They find that the outside shareholders' pressure is the sole reason behind it. The other reasons such as financial distress and financial targets are not responsible for the same.[9]

(Jain, Mishra, 2020) examines the quality of earnings and revenue taken as a proxy for the earnings management. The study includes a sample of 6 largest companies from Indian Cement Industry. As per the study, 3 out of 6 companies are found to be involved in earnings management reflecting a serious concern of corporate governance.[10]

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RESEARCH METHODOLOGY

Research Gap

Detection of Earnings manipulation in financial reporting is an important concern for academicians, corporate houses, and investors as well. The present study is an attempt to explore the possibilities of earnings manipulations in the Indian automobile sector. The careful study of existing literature shows that so many studies have been carried out in the area of earnings manipulation, but there was an absence of focused work on the Indian automobile industry. So, the present study will provide an insight into earnings manipulation in the aforesaid sector.

Further research in this area focusing on the Indian scenario is expected to provide new insights and will answer the questions that have been enquired here, which will lead to the reduction in the earning manipulations. Ultimately it would reduce the effect on the shareholders' wealth in particular and economic resources in general and also enriches the existing literature on earnings manipulation especially with regards to the Indian context.

Objective of the Study

The objective of the current study is to analyze the earning manipulation practices in the Indian automobile industry.

Sample

The data of 8 companies from the Indian automobile industry for the duration of 6 years were studied and analyzed. CMIE Prowess Database was the source of the data, a leading database for the Indian market, and is widely referred to in existing studies.

TABLE- I

TECHNIQUE USED

Variable	Full-Form	Description	Weight	Rationale
DSRI	Days Sales in Receivables Index	(Net Receivables$_t$ / Sales$_t$) / (Net Receivables$_t$-1 / Sales$_t$-1)	0.920	This variable measures how accounts receivables as a percentage of sales have changed compared to the previous year. This variable is useful to capture distortions in accounts receivables that initiate from an inflated revenue.
GMI	Gross Margin Index	[(Sales$_t$-1 - COGS$_t$-1) / Sales$_t$-1] / [(Sales$_t$ - COGS$_t$) / Sales$_t$]	0.528	This variable compares the gross margin i.e. sales to the cost of goods sold between the previous year and the current year.
AQI	Asset Quality Index	[1 - (Current Assets$_t$ + PP&E$_t$ + Securities$_t$) / Total Assets$_t$] / [1 - ((Current Assets$_t$-1 + PP&E$_t$-1 + Securities$_t$-1) / Total Assets$_t$-1)]	0.404	This variable indicates the relationship between the non-current assets other than PPE and the total assets.

SGI	Sales Growth Index	$Sales_t$ / $Sales_t$-1	0.892	This variable compares sales between two consecutive years. An increase in sales in the current year compared to the previous year indicates that the company in the current year is doing good or not. But growth companies always have chances of manipulation in their earnings.
DEPI	Depreciation Index	($Depreciation_t$-1/ ($PP\&E_t$-1 + $Depreciation_t$-1)) / ($Depreciation_t$ / ($PP\&E_t$ + $Depreciation_t$))	0.115	This variable indicates that growth in income as a result of declining depreciation could have changes in earnings manipulations.
SGAI	Sales General and Administrative Expenses Index	($SG\&A\ Expense_t$ / $Sales_t$) / ($SG\&A\ Expense_t$-1 / $Sales_t$-1)	0.172	Higher sales and administrative expenses indicate a decrease in administrative efficiency and influence firms to engage in financial misstatements.
LVGI	Leverage Index	[(Current $Liabilities_t$ + Total Long Term $Debt_t$) / Total $Assets_t$] / [(Current Liabilitiest-1 + Total Long Term Debtt-1) / Total Assetst-1]	0.327	This variable indicates the relationship between long-term debt and current liabilities to total assets. An increase in leverage could make a company prone to earnings manipulation.
TATA	Total Accruals to Total Assets	(Income from Continuing $Operations_t$ - Cash Flows from Operations) / Total Assets	4.697	This variable is useful to capture accounting profits that are not real and are not supported by the profits at hand.

TABLE -II

BENEISH M-SCORE MODEL

Index	Non-Manipulator	Manipulator
Days Sales in Receivables Index (DSRI)	1.030	1.460
Gross Margin Index (GMI)	1.041	1.190
Asset Quality Index (AGI)	1.040	1.250
Sales Growth Index (SGI)	1.134	1.610
Depreciation Index (DEPI)	1.001	1.077
Sales General and Administrative Expenses Index (SGAI)	1.001	1.041
Leverage Index (LVGI)	1.037	1.111
Total Accruals to Total Assets Index (TATAI)	0.018	0.031

Source: Adapted from Beneish M Score Model

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Table 1 shows the manipulator and non-manipulator values of all eight variables of the Beneish model.

TABLE- III

ANALYSIS & INTERPRETATION
ASHOK LEYLAND

Years	2014	2015	2016	2017	2018	2019
DSRI	1.086	0.803	0.593	0.85	0.924	1.992*
GMI	1.397*	0.758	0.849	0.997	1.201*	1.152
AQI	1.012	0.944	0.944	1.08	0.959	1.135
SGI	0.783	1.359	1.377	1.068	1.23	1.088
DEPI	1.072y	0.859	0.793	0.986	0.905	0.967
SGAI	0.937	0.813	1.085*	1.05*	1.026	0.918
TATAI	0.025	-0.024	-0.026	0.057	0.053	-0.059
LVGI	0.988*	0.932*	0.887*	1.023*	0.993*	1.115*
Score	-2.258	-2.563	-2.742	-2.28	-2.019	-1.658
Assessment	No Manipulation	No Manipulation	No Manipulation	No Manipulation	No Manipulation	Likely Manipulation

*This indicates the possibility that earnings were manipulated when compared to Beneish (1999).

Table III shows the M-score of Ashok Leyland for the period from 2014 to 2019. The six-year score was less than the score of manipulation figure of -2.22 except for 2019 means unlikely to be a manipulator. However, a detailed study of the eight variables during the study revealed that in 2014 GMI and LVGI were manipulated, in 2015 LVGI was manipulated, in 2016 SGAI and LVGI were manipulated, in 2017 SGAI and LVGI were manipulated, in 2018 GMI and LVGI were manipulated and in 2019 DSRI and LVGI were manipulated.

TABLE- IV

BAJAJ AUTO

Years	2014	2015	2016	2017	2018	2019
DSRI	0.916	1.049	0.323	1.633*	1.171	1.424
GMI	0.93	1.055	0.915	1.018	1.175	1.165
AQI	1.331*	0.556	2.209*	0.772	1.168	1.262*
SGI	1.002	1.064	1.06	0.967	1.107	1.189
DEPI	1.017	0.671	0.894	0.981	0.945	1.084*

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SGAI	1.441	1.215	0.842	0.993	1.21	1.254
TATAI	0.156	0.214	0.181	0.18	0.163	0.153
LVGI	0.962*	0.909*	0.597*	0.91*	1.109*	1.033*
Score	-1.79	-1.573*	-1.612*	-1.137*	-1.383*	-1.06*
Assessment	Possible Manipulator	Likely Manipulator	Likely Manipulator	Likely Manipulator	Likely Manipulator	Likely Manipulator

*This indicates the possibility that earnings were manipulated when compared to Beneish (1999).

The six-year score in Table IV of Bajaj Auto was above the score of a non-manipulated figure of negative 1.78 except 1997, which is also a possible manipulator as per Beneish M score. However, a detailed study of the eight variables in 2014 also revealed that AQI, SGAI, and TATAI were manipulated. This indicates that there were manipulations in the all the six-year financial statements.

TABLE V

EICHER MOTOR

Years	2014	2015	2016	2017	2018	2019
DSRI	0.956	0.622	1.704*	1.108	1.571*	1.532*
GMI	0.915	0.939	0.877	0.948	1.123	1.081
AQI	0.713	2.166*	2.704*	1.008	0.811	0.736
SGI	1.623*	1.733*	2.102*	1.139	1.164	1.061
DEPI	1.152*	1.012	0.595	0.941	1.173*	0.881
SGAI	0.988	0.863	1.089*	0.94	1.144*	1.018
TATAI	0.174	0.115	0.06	0.048	0.024	-0.043
LVGI	1.163*	1.003*	0.62*	1.006*	1.052*	0.742*
Score	-1.343*	-1.172*	0.115*	-2.056	-1.728*	-2.136
Assessment	Likely Manipulator	Likely Manipulator	Likely Manipulator	No manipulation	Likely Manipulator	No manipulation

*This indicates the possibility that earnings were manipulated when compared to Beneish (1999).

Table V indicates that the earnings of Eicher Motors were likely to be manipulated in the year 2014, 2015 & 2018. The detailed investigation of table 4 revealed that SGI and LVGI were used for the manipulation. There were some shreds of evidence that DSRI, AQI, and SGAI were used for manipulation.

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Vol:54 Issue:04:2021

TABLE VI

FORCE MOTOR

Years	2014	2015	2016	2017	2018	2019
DSRI	1.158	0.722	1.128	0.773	1.864*	0.689
GMI	0.919	1.015	0.737	1.07	1.934*	1.716*
AQI	0.979	0.487	0.699	1.18	1.458*	1.11
SGI	1.024	1.141	1.3	1.012	1.008	1.036
DEPI	0.873	1.016	1.181*	0.931	0.901	1.057
SGAI	0.825	1.213*	0.714	1.065*	0.761	0.37
TATAI	-0.057	-0.057	0.053	0.022	0.04	0.018
LVGI	0.972*	0.869*	0.986*	1.069*	0.769*	1.108*
Score	-2.605	-3.066	-2.031	-2.506	-0.706*	-2.146
Assessment	No manipulation	No manipulation	No manipulation	No manipulation	Likely Manipulator	No manipulation

*This indicates the possibility that earnings were manipulated when compared to Beneish (1999).

Table VI reveals about Force Motors that M score of six years was below the non-manipulated threshold limit with the exception in 2018. A closer look at table 6 reveals that DSRI, GMI, AQI, and LVGI were used for manipulation. There were a few more shreds of evidence of manipulation in other parameters like SGAI, GMI, and DEPI in some of the years as well.

TABLE VII

HERO MOTOCORP

Years	2014	2015	2016	2017	2018	2019
DSRI	1.283	1.442	0.889	1.248	1.133	1.635*
GMI	0.971	0.943	0.853	1.098	1.038	1.134
AQI	0.75	0.88	1.336*	0.836	1.047	1.286*
SGI	1.051	1.079	1.048	1.005	1.065	1.024
DEPI	1.021	2.346*	1.452*	1.159*	0.969	1.003
SGAI	1.037	1.156	0.997	0.48	2.19	0.995
TATAI	0.229	0.25	0.246	0.232	0.183	0.186
LVGI	1.055*	0.845*	0.69*	1.01*	0.921*	0.898*

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Score	-1.239*	-0.733*	-1.176*	-1.071*	-1.585*	-0.783*
Assessment	Likely Manipulator	Likely Manipulator	Likely Manipulator	Likely Manipulator	Likely Manipulator	Likely Manipulator

*This indicates the possibility that earnings were manipulated when comparedtoBeneish (1999).

The application of the Beneish model to Hero MotorCrop's financial statements, shown in table VII, indicates that the company is likely manipulating its earnings. In these years Hear MotorCop has manipulated its DSRI, AQI, DEPI, and LVGI. Further analysis shows that LVGI has been manipulated every year.

TABLE VIII

MAHINDRA&MAHINDRA

Years	2014	2015	2016	2017	2018	2019
DSRI	1.111	1.083	0.926	1.052	1.033	1.096
GMI	0.972	1.083	0.945	1.044	1.066	1.145
AQI	1.014	1.026	0.991	1.109	0.973	1.002
SGI	0.993	0.942	1.068	1.083	1.047	1.085
DEPI	1.346*	0.866	1.059*	0.901	0.973	1.042
SGAI	1.271*	0.835	0.992	1.07*	1.149*	0.922
TATAI	0.051	0.054	0.063	0.152	0.066	-0.066
LVGI	0.921*	0.932*	0.899*	0.845*	1.109*	0.951*
Score	-2.135	-2.114	-2.183	-1.553*	-2.14	-2.514
Assessment	No manipulation	No manipulation	No manipulation	Likely Manipulator	No manipulation	No manipulation

*This indicates the possibility that earnings were manipulated when comparedtoBeneish (1999).

Table VIII shows the computation M score of Mahindra & Mahindra. As per the M score company is unlikely for earnings manipulation except in the year 2017 in which the score is -1.553. A closer look at table 7 reveals that this manipulation has been done with the help of manipulation in SGAI and LVGI. In other years some sign of manipulation has shown in DEPI, SGAI, and LVGI.

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E-Publication: Online Open Access
Vol:54 Issue:04:2021

TABLE IX

MARUTI LTD.

Years	2014	2015	2016	2017	2018	2019
DSRI	0.895	0.53	1.468*	0.746	1.119	1.275
GMI	0.953	0.987	0.829	0.982	1.378*	1.227*
AQI	0.906	1.431*	0.887	1.09	1.054	1.032
SGI	0.995	1.126	1.183	1.189	1.057	1.044
DEPI	0.991	0.96	0.909	1.123*	0.961	1.039
SGAI	1.02	1.089*	1.05*	0.912	1.248*	1.224*
TATAI	0.094	0.126	0.171	0.149	0.124	0.085
LVGI	1.011*	0.986*	0.616*	0.984*	1.014*	0.867
Score	-2.21	-2.061	-1.113*	-1.789	-1.569*	-1.646*
Assessment	No manipulation	No manipulation	Likely Manipulator	Possible Manipulator	Likely Manipulator	Likely Manipulator

*This indicates the possibility that earnings were manipulated when comparedtoBeneish (1999).

Table IX regarding the Beneish M score of Maruti Ltd reveals that the company was involved in earnings manipulation except for the initial two years of the study period. Mainly LVGI and SGAI were used for the manipulation. DSRI, GMI, AQI, and DEPI were also used for the manipulation.

TABLE X TATA MOTORS

Years	2014	2015	2016	2017	2018	2019
DSRI	1.054	0.98	0.877	1.002	1.315	0.847
GMI	1.732*	1.105	0.578	1.297*	1.551*	0.944
AQI	1.114	0.95	0.854	1.008	0.925	1.081
SGI	0.768	1.044	1.201	1.035	1.216	1.171
DEPI	0.884	0.832	1.497*	0.807	0.996	1.007
SGAI	1.192*	1.113*	0.9	0.966	0.912	0.964
TATAI	-0.091	0.187	0.09	0.1	-0.45	-0.169
LVGI	0.923*	1.146*	0.819*	1.078*	1.106*	0.933*
Score	-2.652	-1.634*	-2.139	-1.86*	-3.864	-3.229
Assessment	No manipulation	Likely Manipulator	No manipulation	Possible Manipulator	No manipulation	No manipulation

*This indicates the possibility that earnings were manipulated when comparedtoBeneish (1999).

Table X reflects the Beniesh M score of Tata Motors. A close look at the table shows that there were no signs of earnings manipulation in the years 2014, 2016, 2018, and 2019. But the M score in the year 2015 indicates the manipulation in earnings. The data shows that SG&A and leverage could have been used for manipulation in the year 2015. The M score in the year 2017 was at the threshold.

CONCLUSION

This research paper is an application of the Beneish M model to detect the practice of earnings manipulations being followed in the Indian automobile sector. This is particularly important as the Indian automobile industry contributes to nearly 7.1% of the country's GDP. Based on our analysis, we find that automobile companies are prone to earnings manipulations in some way or the other. Depending on the standard ratios formulated under the Beneish M model, we find that these companies tend to manipulate either of the eight ratios at their own convenience. This is done to induce the investors to misinterpret the present financial health of the company. Our study provides policy implications for earning management practices in the Indian automobile industry whereas it can be extended to other important sectors of the economy.

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