FINANCIAL STATEMENTS ANALYSIS ON TESLA

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ABSTRACT

Tesla is in the news again. Tesla Incorporation (Inc.) has well engineered cars with extensive power and nominal emissions which had helped Tesla's products to stand out and make a mark in this growing sector. Establishing its presence in the prominent markets of The United States, Europe, Asia and Canada, the reach of Tesla Inc. has been creditable. The gradual shift of the consumers towards the importance of environment-friendly automobile options has helped to facilitate this. Another reason why consumers seem to find the shift to electric cars feasible is the fact that consumers can now avoid the cumbersome process of fueling by going to a gas station. Instead, they can now charge their vehicles at home. But even after having potential market and new orders in the agenda of Tesla, Why the company ends up in declaring losses every year? This is a question in everyone's mind. This study is an attempt to find answer/s to this question through Financial Statements analysis taking last three financial years i.e. 2015-2017. The current research has adopted descriptive method of research through secondary data. Financial Statements has been downloaded from the official website of Tesla Inc. and prepared Comparative and Common-size statements along with 17 financial ratios. This study observed that Gross Profit for the Company was in increasing trend in absolute figures but when compared as a percentage of sales it reveals that Gross Profit has been decreased from 23% in 2015 & 2016 to 19% in 2017. Coupled with this higher costs of Maintenance, Research and Development, Selling, General and Administrative expenses have triggered the company towards Net Loss.

Keywords: Financial Statements Analysis, Tesla Incorporation, Financial Ratios, Comparative Statements, Common-Size analysis, Research and Development Expenses.

INTRODUCTION

On 23rd Feb 2017, Tesla, one of the most prominent names in the electric car industry declared yet another disappointing financials in the annual report for the year 2015 & 2016. With the net losses aggravating from the year 2015 to in the year 2016, a whooping increase by 13 percent. One day prior to annual report declarations the CFO resigned, just adding to the ongoing woes of the troubled company. The analysts had already named the company as one the potential candidates for the bankruptcy. Some had named the company as one the Ponzi scheme and other have called the stock of tesla worth less than zero. Few analysts have stated that the Tesla will declare insolvent in four months. Unhampered with the losses and the analyst predictions, the company had been very firm in the future expansion and capital expenditure plans in 2017 to invest $2.0 billion and $2.5 billion for the production of the Model 3 and to construct the Giga factory respectively, while expanding the retail and service centers to boost its supercharger network. While the analyst were taking a gloomy picture of tesla, the investors were puzzled with the fact that Why in spite of continually increasing the sales (beating the market analyst expectation in terms of increasing the revenues) the company still ends up in loss every year?

Will the company stay afloat and pay off loans and meet its extensive capital expenditure requirements?

This paper is an attempt to describe the Financial Statements analysis of Tesla Inc. for the selected period i.e. from 2015 to 2017. Descriptive research method has been used in this study to describe the various results which are absorbed by using Financial Statements of Tesla Inc. The following sections of the paper arranged in the order starting with Objectives, about the company (Tesla Inc.), followed by literature review. After literature, Research method, Analysis & Discussion and finally ends with conclusion.

Objectives

1. The main objective of this paper is to know the reasons behind Tesla declaring losses irrespective of the sales for the select period based on Financial Statements analysis.
2. To know the efficacy of ratio analysis in detection the cash flows, working capital and capital budgeting perpetuation

About the company

Listed on NASDAQ, for a period of almost six years Tesla Inc. is well engineered cars with extensive power and nominal emissions had helped Tesla's products to stand out and make a mark in this growing sector. The gradual shift of the consumers towards the importance of environment-friendly automobile options has helped to facilitate this. Another reason why consumers seem to find the shift to electric cars feasible is the fact that consumers can now avoid the cumbersome process of fueling by going to a gas station. This supercharger feature serves as a competitive advantage for the company. Tesla cars are also backed with high safety parameters making them one of the safest cars in the world.

Competitors

Vehicles compete in the market both based on their traditional segment classification as well as based on their propulsion technology. For example, Model S and Model X compete primarily in the extremely competitive premium sedan and premium SUV markets with internal combustion vehicles from more established automobile manufacturers, including Audi, BMW, Lexus and Mercedes, and Model 3 will compete with small to medium-sized sedans from manufacturers including Audi, BMW, Lexus, Mercedes, Honda and Toyota. The progression in the EV industry has led to the emergence of various competitors for the company. Major competitors being BMW, General Motors and Ford Motor Company with extravagant models like the BMW i8, i3, Spark EV, Chevy Bolt and Ford Fusion Energy.

Industry

The Electric Vehicle industry is expected to grow at CAGR of 23% by the year 2021. The immense benefits of Electric vehicles have elicited the scope for growth in this sector. Neelam Barua, a lead analyst at Technavio for automotive electronics research felt that "*The adoption of green vehicles is increasing globally due to the implementation of stringent regulations regarding environmental protection, reducing emissions and enhancing fuel efficiency. The global EV market is expected to account for a share of more than 16% of the global vehicle market in 2021, which is likely to drive the growth of the global EV motor market*

during the forecast period". Analysts at Technavio automotive, felt that the main drivers that underwrite the growth of this industry are Government regulations, decline in the cost of electric motors and riding demand for EVs. KPMG's Global Automotive executive survey 2017, found out that the Battery electric vehicles have emerged to be the number one key trend in the industry.

LITERATURE REVIEW

Financial Statements Analysis

Financial statements Analysis are useful in revealing the salient features and highlight significant aspects of financial position, operational results and also helps in identifying the strengths and weaknesses of a business (Nuhu, 2014). The tools and techniques and other relevant data used on financial statements present the useful information in a precise form to the various stake holders (Hermanson et al., 1992). Financial Statements analysis can be defined as the breaking down, interpreting, and translating the data contained in financial statements to provide useful information to the future potentials of various stake holders (Choate, 1974). According to the study conducted by Choate (1974) the main objective of financial statements analysis is to find the trends and changes in the performance of the company and alert the investors. (Laitinen, 2002), the tools and techniques of financial statements analysis include common size, comparative, trend and ratio analysis. Out of these four common techniques of financial statements analysis, ratios are the most powerful tool to interpret the financial statements. Ratio is a proportion or fraction or percentage expressing the relationship between any given two variables from the financial statements (Igben, 1999). According to Lasher (1997) ratio analysis involves taking numbers out of financial statements to form judgements.

Financial statements analysis helps to detect the earning manipulation. Although the strong roots of accounting process in the analysis of financial statements still the accountant and/or auditor is not able to control the manipulations in full extent (Bhavani et al., 2018).

According to a 2012 report by the Association of Certified Fraud Examiners (ACFE), there are three main types of fraud that are committed within corporate circles. They are Financial Statements Misrepresentation, Corruption and Asset Misappropriation. Corporate organizational structures should have a mesh of management, boards of directors and audit committees who should all work in unison in the fiscal process to detect and prevent fraud. When internal controls are tight and there is a fair degree of oversight in place, there will be a disincentive to engage in financial statements fraud. (Amoa-gyarteng, 2014). There are some tools and techniques available in forensic accounting to detect financial statementss misrepresentation apart from the popular techniques of financial statements analysis. But these techniques are dependent on traditional tools of financial statements analysis mostly ratio analysis. Many researchers invented M-Score, Z-score, F -Score, Benford's law to find out earning manipulations using the main source as ratios'.

RESEARCH METHOD

The research method used in this study is descriptive. Financial reports has been downloaded from Tesla Inc., official website, investors, SEC filing and prepared Consolidated Statements of Operations, Consolidated Statements of Financial Position and Consolidated Statements of Cash Flows for the years 2015-2017 ending on December 31st. Analysis has been

given in the Analysis and Discussion section based on these statements (Appendices 1 & 2). A Comparative and Common-size Analysis statements of Operations has been prepared for better analysis of financials for the selected period. Using Financial Statements a total of 17 financial ratios has been calculated under 6 different categories. The selection of these variables is constituted from prior research on published financial statements. The selected ratios belong to the categories of Activity, Coverage, Liquidity, Solvency, Cash Performance and Profitability.

RESULTS AND DISCUSSION

Analysis Based on Comparative and Common-size Statements of Operations

Though there is an increase in sales by almost 191% as compared to 2015 in 2017 there is a decrease in composition of revenues from Automotives by 12 % to the total revenues (Table 1). Energy generation & storage revenues has increased considerably it comprised 9% of the total revenues and at par to Automotive leasing by 2017. Cost of Revenue for Automotives reduced in 2016 by 1% and increased by 2% in 2017 compared to 2015 which has reduced the profits of the Company. Tesla should have looked various avenues for reducing the cost of revenues such as buying raw materials with negotiated prices or should have searched for alternative sources of procurement of raw materials, might have used innovative technology for reducing production costs or adapt revised re-engineering process and other measures to control the same which are not happening over the years. Due to these reasons the cost has increased by 2% which (Table 1, i.e. it has increased from 75% in 2015 & 16 to 77% in 2017) is really a bad sign and can quote as a significant reason for the decrease of profits as well. Alternatively Tesla to survive in the market has reduced the sale price of their prime product which can be one of the main reasons for reduction of profits.

Table 1
COMPARATIVE AND COMMON SIZE ANALYSIS OF STATEMENT OF OPERATIONS TESLA INC.

	USD 2017	**USD 2016**	**USD 2015**	**Incr +/ Dec - 2015-2016**	**Incr + / Dec - 2016-2017**	**Incr + / Dec - 2015-2017**	**22015 as a % of Sales**	**22016 as a % of Sales**	**22017 as a % of Sales**
AUTOMOTIVE	8,534,752	5,589,007	3,431,587	63%	53%	149%	85%	80%	73%
AUTOMOTIVE LEASING	1,106,548	761,759	309,386	146%	45%	258%	8%	11%	9%
TOTAL AUTOMOTIVE	**9,641,300**	**6,350,766**	**3,740,973**	**70%**	**52%**	**158%**	92%	91%	82%
ENERGY GEN AND STORAGE	1,116,266	181,394	14,477	1153%	515%	7611%	0%	3%	9%
SERVICES AND OTHER	1,001,185	467,972	290,575	61%	114%	245%	7%	7%	9%
TOTAL REVENUES	**11,758,751**	**7,000,132**	**4,046,025**	**73%**	**68%**	**191%**			
COST OF REVENUES									
AUTOMOTIVE	6,724,480	4,268,087	2,639,926	62%	58%	155%	77%	76%	79%
AUTOMOTIVE LEASING	708,224	481,994	183,376	163%	47%	286%	59%	63%	64%
TOTAL AUTOMOTIVE	**7,432,704**	**4,750,081**	**2,823,302**	**68%**	**56%**	**163%**	75%	75%	77%
ENERGY GEN				1351%	390%	7018	85%	98%	78%

Table 1 COMPARATIVE AND COMMON SIZE ANALYSIS OF STATEMENT OF OPERATIONS TESLA INC.									
AND STORAGE	874,538	178,332	12,287			%			
SERVICES AND OTHER	1,229,022	472,462	286,933	65%	160%	328%	99%	101%	123 %
TOTAL REVENUES	**9,536,264**	**5,400,875**	**3,122,522**	**73%**	**77%**	**205%**	77%	77%	81%
GROSS PROFIT	**2,222,487**	**1,599,257**	**923,503**	**73%**	**39%**	**141%**	23%	23%	19%
OPERATING EXPENSES									
R&D	1,378,073	834,408	717,900	16%	65%	92%	18%	12%	12%
Selling General and Administrative Expenses	2,476,500	1,432,189	922,232	55%	73%	169%	23%	20%	21%
TOTAL OPERATING EXP	**3,854,573**	**2,266,597**	**1,640,132**	**38%**	**70%**	**135%**	41%	32%	33%

In energy generation and storage the company has improved on the margins substantially by reducing customer acquisition costs, by cutting advertising expenses and increasing sale of these products in Tesla stores. In comparison to 2015 the margin has improved by 7%. The company plans to triple their sales in Energy Generation & Storage. The company should aim to improve operational efficiency. Gross margin for total automotive decreased from 25% to 23% during the year ended December 31, 2017 compared to the year ended December 31, 2016. Gross margin for total automotive & services and other segment decreased from 23% to 19% (Table 1) during the year ended December 31, 2017 compared to the year ended December 31, 2016. This decrease can be driven by the factors impacting gross margin for total automotive, as well as higher costs of maintenance service. Research & Development expenses has reduced by 6% in 2017 compared to 2015. Research and development ("*R&D*") expenses consist primarily of personnel costs for teams in engineering and research, manufacturing engineering and manufacturing test organizations, prototyping expense, contract and professional services and amortized equipment expenses. R&D expenses increased $116.5 million, or 16%, to $834.4 million during the year ended December 31, 2016 compared to the year ended December 31, 2015. The increase of $116.5 million was primarily due to a $78.2 million increase in employee and labor related expenses due to a 15% headcount increase. Selling, General and Administrative (SG &A) expenses increased by 1% in 2017. SG&A expenses increased by $1.04 billion, or 73%, during the year ended December 31, 2017 compared to the year ended December 31, 2016. This increase was primarily due to a $524.0 million increase in employee and labor related expenses. The reasons for labor related expenses can be headcount growth from the expansion of automotive & energy generation and storage businesses. Secondarily due to $64.9 million increase in stock-based compensation expense. This can be based on the increase in headcount and number of employee stock awards granted for new hire and refresher employee stock grants.

Analysis Based on Ratios

Tesla Inc. Inventory Turnover ratio has shown a consistent increase in the efficiency of turning its inventory into sales. There is an improvement by 1.18 times in 2017 as compared to 2016 and 1.602 times as compared to 2015. But there is an increase in inventory in absolute values by USD 196 Million or 9.48% as contrast to Dec 2016 in Dec 2017 (Table 2). The

company should aim to reduce the same to improve upon its inventory turnover ratio. Whereas, Asset Turnover Ratio of the Company has shown an improvement as compared to 2016. The assets which were acquired in 2017 has helped in improving this ratio. Huge investments were made in Plant & equipment by USD 4.045 Billion or 67% increase in contrast to Dec 2016 in Dec 2017 (Table 2). In late 2017, Tesla completed installation of the largest battery in the world in South Australia. This battery delivers electricity during peak hours to help maintain the reliable operation of South Australia's electrical infrastructure. In 2017, this company deployed 358 Mega Watts (MW) per hour of energy storage products and 523 MW of solar energy generation. However the ratio is below 1 (every 1 dollar invested today is able to earn only 0.41 dollar) which indicates that the company has to significantly improve on its sales and it will take some time for the company to get the return on its investments done in 2017. Receivables Turnover ratio is also showing continual increase which indicates extended credit terms to the customers / lag in the collection of debt from the market (Table 2).

Table 2
RATIO ANALYSIS OF TESLA INC.

MEASURES	RATIOS	2017	2016	2015
ACTIVITY RATIOS	INVENTORY TURNOVER	4.4037	3.2289	2.7986
	TOTAL ASSET TURNOVER	0.4103	0.3089	0.5015
	RECEIVABLES TURNOVER	23.191	20.9551	20.4567
COVERAGE RATIOS	CASH COVERAGE RATIO	0.2016	2.1700	-1.865
	INTEREST COVERAGE RATIO	-3.4649	-3.3567	-6.0296
LIQUIDITY RATIOS	CURRENT RATIO	0.8561	1.0743	0.9897
	QUICK RATIO	0.561	0.719	0.535
SOLVENCY RATIOS	DEBT RATIO	0.8034	0.7391	0.8598
	TOTAL DEBT TO EQUITY RATIO	5.4335	3.5242	6.4011
CASH PERFORMANCE RATIOS	CASH RETURN TO REVENUE	0.2874	0.3279	0.3834
	CASH RETURN TO ASSETS	-0.0020	-0.0055	-0.0650
	CASH RETURN TO EQUITY	-0.0141	-0.0261	-0.4840
PROFITABILITY RATIOS	GROSS PROFIT MARGIN	0.1889	0.2285	0.2282
	RETURN ON ASSET	-0.0872	-0.0503	-0.1279
	RETURN ON EQUITY	-0.5286	-0.1626	-0.8200
	NET PROFIT MARGIN	-0.1905	-0.1104	-0.2196

Cash coverage ratio

The cash coverage ratio is useful for determining the amount of cash available to pay for a borrower's interest expense, and is expressed as a ratio of the cash available to the amount of interest to be paid. To show a sufficient ability to pay, the ratio should be substantially greater than 1:1. Surprisingly, only 2016 it has 2.17 (Table 2) that is greater the ideal ratio. When it comes to Interest Coverage Ratio, Tesla's EBIT has been constantly negative for the past 3 years and hence we can construe that the company has been at a constant risk of default as it was unable to cover its interest for the debts. Coupled with this Long term debt has been increased by USD 3.55 Billion or by 60% in December, 2017 as compared to December, 2016. Due to this

there is a considerable increase in interest expense by USD 272 Million or 137% as compared to December, 2016.

Current ratio

The current ratio has decreased by 0.2182 which indicates that there is reduction in current assets and the company's ability to pay short-term and long-term obligations. Whereas, the quick ratio is an indicator of a company's short-term liquidity, and measures a company's ability to meet its short-term obligations with its most liquid assets. This ratio in 2017 has declined by 0.158 against 2016 which indicates that the liquid assets available to cover each dollar of short-term debt has reduced, thus, the company liquidity position has deteriorated. On the hand, Debt Ratio of the company's long terms debt to total assets was in the same range for the past 3 years. Though long term debt has increased in 2017 by USD 3.55 Billion it was balanced through procurement of capital assets to derive long term benefits.

There is an increase in Total Debt to Equity ratio during 2017 due to the increase in long term debt of the company and a parallel reduction in equity due to the accumulated loss at USD 4.974 Billion. Gross Profit Margin Ratio for the company has reduced substantially in 2017 by 4% as compared to 2015 & 16. This indicates increase in operating costs/reduction in efficiency with a parallel reduction in selling price of the product. To discuss about Return on Asset Ratio, this ratio is negative for the company for the past 3 years due to the net loss made by the company. Similarly, Return on Equity ratio is also negative for the company for the past 3 years due to the net loss made by the company. In 2017 for every dollar invested in the company the return stands at negative -0.5286 dollar.

The Company's Net Profit Margin ratio has been making Net Loss for the past 3 years. The Net loss margin % has increased by 8 % or USD 1.467 Billion in 2017 as compared to 2016. When it comes to Cash return to Revenue, the company has been maintain huge closing cash and bank balances all along and this is the reason for this ratio to be positive. Finally, Cash return to Assets and Cash return to Equity. These both ratios are not showing satisfactory results as the company has been making losses all along and hence it did not make any cash from operating activities all through, however the position in 2017 has improved by USD 464 Million as compared to 2015.

CONCLUSION

One of the most prominent and well-engineered in cars manufacturing company in the world is Tesla Incorporation. This company continuously sufferings with losses and hot news in catching the attention of various stake holders in the market. The gradual shift of the consumers towards the importance of environment-friendly automobile options has helped to bring number of orders and also turned the attention of other car manufacturers to observe closely the happenings in this company. This study is attempted to find some possible reasons based on secondary data i.e. published Financial Statements by Tesla Inc. for the period of 2015 to 2017. Financial Statements has been downloaded from the official website of Tesla Inc. and prepared Comparative and Common-size statements along with 17 financial ratios. This study observed that the company has made good Gross profits in absolute figure but when compared as a percentage of sales it reveals that Gross Profit has been decreased from 23% in 2015 & 2016 to 19% 2017. Higher costs of Maintenance, Research and Development, Selling, General and Administrative expenses have triggered the net profit margin down.

Another reason could have been for the losses of this company can be high automotive cost of revenue about 67%. Tesla never made a full year profits. One should not neglect the one of the reasons for this is interest expenses. The interest expenses were also considerably higher than they could afford. High amount of long-term debt i.e. almost triple the value of $2070 million was recorded in 2015. This will definitely lead to the increase of interest expenses year by year. Most of the ratios under ratio analysis are also highlighting the facts and figures and alarming the potential threat of the company in future.

APPENDICES

Appendix 1
CONSOLIDATED STATEMENTS OF OPERATIONS IN THOUSANDS, EXCEPT PER SHARE DATA

Revenues	**2017**	**2016**	**2015**
Total revenues	**11,758,751**	**7,000,132**	**4,046,025**
Cost of revenues			
Total cost of revenues	**9,536,264**	**5,400,875**	**3,122,522**
Gross profit	**2,222,487**	**1,599,257**	**923,503**
Total operating expenses	3,854,573	2,266,597	1,640,132
Loss from operations	**-1,632,086**	**-667,340**	**-716,629**
Interest income	19,686	8,530	1,508
Interest expense	-471,259	-198,810	-118,851
Other (expense) income, net	-125,373	111,272	-41,652
Loss before income taxes	**-2,209,032**	**-746,348**	**-875,624**
Provision for income taxes	31,546	26,698	13,039
Net loss	-2,240,578	-773,046	-888,663

Appendix 2
CONSOLIDATED STATEMENTS OF CASH FLOWS

Year Ended December 31,	**2017**	**2016**	**2015**
Cash Flows from Operating Activities			
Net cash used in operating activities	-60,654	-123,829	-524,499
Cash Flows from Investing Activities			
Net cash used in investing activities	-4,418,967	-1,416,430	-1,673,551
Cash Flows from Financing Activities			
Net cash provided by financing activities	4,414,864	3,743,976	1,523,523
Effect of exchange rate changes on cash and cash equivalents	39,455	-7,409	-34,278
Net (decrease) increase in cash and cash equivalents	-25,302	2,196,308	-708,805
Cash and cash equivalents, beginning of period	3,393,216	1,196,908	1,905,713
Cash and cash equivalents, end of period	$ 3,367,914	$ 3,393,216	$ 1,196,908

Source: Annual Report (2016); [ebook] Tesla, Inc. Available at: http://www.annualreports.com/HostedData/AnnualReports/PDF/NASDAQ_TSLA_2017.pdf

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