Czech University of Life Sciences Prague

Faculty of Economic and Management

Department of Economic Theories

Diploma Thesis

Title: Financial Analysis of Chosen Company

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Diploma Thesis Assignment

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Thesis title

Financial Analysis of Chosen Company

Objectives of thesis

The goal of this diploma thesis is to employ some selected approaches of financial analysis to evaluate economic situation of a chosen company in order to have a better perception of the selected company's position and performance. Also, special atention will be paid to the assessment of financial stability and steadiness of that company in particular time period.

Methodology

The diploma thesis contains a theoretical and practical part. Literature review provides fundamental explanation of financial analysis according to the aim of this thesis. Practical part will be focused on evaluaϴon of financial statements using some key financial ratios. Time dimension will be introduced through horizontal analysis.

The proposed extend of the thesis

60 – 80 pages

Keywords

Financial analysis, financial statements, balance sheet, income statement, ratio analysis, comparative analysis

Recommended information sources

BELLI, Pedro. Economic analysis of investment operations: analytical tools and practical applications. Washington, D.C.: World Bank, c2001, xxviii, 264 p. ISBN 08-213-4850-7

BROIHAHN.International financial statement analysis. 3 ed. CFA Institute, N.J.: John Wiley, USA., c2015, xxix, 1009 p. ISBN 978-111-8999-479

KISLINGEROVÁ, Eva, a kol. Manažerské finance. 3. vydání. Praha : C.H.Beck, 2010. 827 p. ISBN 978-80-7400-194-9

PANDEY, I.M. Financial management [with CD copy]. 9th ed. New Delhi: Vikas Publishing House, 2009. 779 p. ISBN 978-812-5916-581

PETER LUSZTIG, Bernhard SCHWAB. Managerial finance in a Canadian seţng. 4th ed. Toronto: BuΣerworths, 1988, 1035 p. ISBN 04-098-0601-3

SPURGA, Ronald C. Balance sheet basics financial management for non-financial managers. New York: Porŋolio, 2004. ISBN 978-110-1484-029

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Financial Analysis of Chosen Company

Ekonomická analýza Vybrané Firmy

Declaration

I declare that I have worked on my diploma thesis titled "Financial Analysis of Chosen Company " by myself and I have used only the sources mentioned at the end of the thesis. As the author of the diploma thesis, I declare that the thesis does not break copyrights of any their person.

In Prague on 6th of April _____

Mahsa Tarameshloo

Acknowledgement

I would like to thank Ing. Pavel Srbek, Ph.D. for his advice and support during my work on this Thesis. I would also like to give my thanks and appreciation to my parents and lovely sister for their support during this time. Last, but not least, I would like to thank my boyfriend for his support.

Abstract

This thesis has tried to analyze the economic analysis of Isfahan's Mobarakeh Steel Company from 2013 to 2018.

This thesis consists of two theoretical and analytical sections. The theoretical section has addressed the methods, ratios, and formulas on which the steel company should be analyzed.

In the analytical section, a brief overview of the history and activities of Isfahan's Mobarakeh Steel Company is first discussed. Second, the financial statements of the company are addressed based on horizontal and vertical analysis of balance sheets and profit and loss. Third, profitability, leverage and financial ratios as well as Altman Z-score, economic value added are discussed to evaluate the economic performance of the company.

Fourth, in the discussion and recommendation section, rising and falling trends and the notable points, as well as recommendations for the performance of the company, are presented. Finally, the status of the company, suggestions and future forecasts of the company are summarized based on the current status of the company in the conclusion section.

Keywords: Financial Analysis, Horizantal Analaysis,Vertical Analaysis, Financial Statement, Financial Ratios, Isfahan's Mobarakeh Steel Campany.

Abstrakt

Tato diplomová práce se pokusila provést ekonomickou analýzu společnosti Isfahan's Mobarakeh Steel Company v letech 2013 až 2018.

Tato diplomová práce se skládá ze dvou částí - teoretické a analytické. Teoretická část pojednává o metodách, poměrech a vzorcích, na základě kterých by měla být ocelářská společnost analyzována.

V analytické části je nejdříve uveden krátký přehled o historii a činnostech společnosti Isfahan's Mobarakeh Steel Company. Za druhé je na základě horizontální a vertikální analýzy rozvahy a výsledovky zpracována účetní závěrka společnosti. Za třetí je za účelem vyhodnocení ekonomické výkonnosti společnosti diskutována ziskovost, koeficient zadlužení a finanční ukazatele a také Altmanova analýza Z-skóre a ekonomická přidaná hodnota.

Za čtvrté jsou v části diskuse a doporučení uvedeny rostoucí a klesající trendy a významné body, jakož i doporučení pro výkonnost společnosti. Nakonec je na základě současného stavu společnosti v závěrečné části stručně vyjádřen její stav, návrhy a budoucí prognózy.

Klíčová slova: Finanční analýza, horizontální analýza, vertikální analýza, účetní závěrka, finanční ukazatele, Isfahan's Mobarakeh Steel Company.

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1 Introduction

Financial analysis is one of the best-known financial management tools. The business unit managers and planners obtain a general profile of their performance by evaluating the information reflected in the financial statement and their analysis. In this regard, by evaluation of the current situation, the long-term and strategic plans of the business unit are prepared. Besides identification of the strong and weak points through the adoption of suitable strategies, it leads to optimization of the activities and ultimately, maximizing the shareholders' wealth.

Today, the analysis of the financial ratios is a good tool for evaluation of the management performance, analysis of the credit status, etc. These ratios are analyzed by different groups of users such as investors, creditors, managers, government brokers, analysts, and financial advisors.

The current thesis will deal with the evaluation of Isfahan Mobarakeh Steel company as a pioneer Iranian Company working in the field of steel sheets production. The data needed for analysis of the company's financial statements have been obtained from https://www.codal.ir/ and http://www.tsetmc.com/. This thesis would be divided into two main parts. The theoretical part including the elaboration of the financial analysis process, the methods, ratios, and each of the financial ratios aspects. In the practical part also, the financial statements of the Mobarakeh Steel Company during the 2013-2018 period would be analyzed, and the methods and ratios mentioned in the theoretical part would be evaluated. Finally, the company and its strong and weak points would be discussed and conclusions and suggestions for improvement of the company as well as the prediction of its future based on the past trend would be dealt with.

2 Objective and Methodology

In this chapter, the main objectives and methodology of the current thesis would be discussed.

2.1 Research Objectives

The main objective of the current thesis is to evaluate and analyze Isfahan's Mobarakeh Steel Company in a 5 year period which starts from 2013 and ends in 2018. The secondary objectives are also defined as follows:

- Evaluation and analysis of the company's financial statements (the balance sheet and profit and loss) by the use of vertical and horizontal analysis methods.
- The use of financial ratios to evaluate the profitability, liquidity, activities, financial leverage, and market ratios of the company.
- Calculation of the company's economic value-added and prediction of bankruptcy to predict and evaluate the company's future.
- Risk analysis of the company including the systematic, operational, and financial risks.
- Comparison and analysis of the company's ratios with its average ratios.

2.2 Methodology

The current study, due to address the analysis of the company's financial statements, is an applied thesis. As mentioned the main objective of this thesis is a close evaluation of Isfahan's Mobarake Steel Company in a 5 year period between 2013-2018, the minor objectives are analysing company's financial statement, which mainly is about the balance sheet and its profit and loss using vertical and horizontal method, evaluationg profitability liquidity activities financial leverage and market ratios of a company by using financial ratios, calculating the value-added of a company and fortell a company's future by predicting its bankruptcy, calculate and estimates a company's risk including systematic operational and financial risks, comparison and analysis of a company's financial ratios. At the beginning of the thesis, the main and secondary objectives are provided. Next, the theoretical frameworks needed for analysis of the company are addressed, and then, in the practical part, the use of these methods has been evaluated. The required information is gather from the Mobarakeh's Steel Company balance sheets. However, in Iran companies are only required to make their balance sheets publicly available when the company in question is accepted to be traded on one of Iran's stock exchanges. Taking this into account and considering that Mobarakeh Steel Company has been accepted to be traded on the Tehran Stock Exchange from 2012, only balance sheets from 2012 onward are made available to the public, whereas balance sheets prior to 2012 remain sealed and beyond public reach. The balance sheets are then used to calculate activity rations and profitability rations from 2013 to 2018. The calculated ratios are then compared to Iran's industry average, also referred to as industry for short, as a benchmark. It should be noted that the data concerning industry average were extracted from www.fipiran.com. In addition, and for rigor, using balance sheets from Amirkabir Steel Com-

pany, the most prominent competitor of Mobarakeh Steel Company, performance of Amir Kabir and Mobarakeh steel companies are compared using various metrics.

The Mobarekeh Steel Company assets are dealt with using the horizontal and vertical analysis techniques and the revealed trends are discussed. Then, we focus on debt and shareholder equity, where once more vertical and horizontal analysis methods are used to reveal and discuss important trends in the company's current debt, non-current debt, and shareholder equity. Next, we conduct vertical and horizontal analysis on the profit and loss balances, where performance of Mobarakeh Steel Company is compared to its rival, that is the Amir Kabir Steel Company. Furthermore, profitability ratios of Mobarakeh Steel Company are analyzed and compared to industry average. The next part in the analysis of Mobarakeh Steel Company deals with liquidity ratios and the ability of the company to repay its debts, especially current debts. In what follows, we analyze leverage rations and discuss how the company's asset structure has evolved. Next, we analyze the trends in the company's networking capital, which allows us to analyze the company's liquidity management strategy. We then turn our focus to analyzing personal expenses to value add and labor productivity from sales performance, which is followed and analyzing the trends in economic value added performance of Mobarakeh Steel Company. In the section that follows, we analyze Mobarakeh Steel Company's position in Iran's financial markets using market ratios. Then, we use the Altman Z-score to analyze Mobarakeh Steel Company in terms of bankruptcy metrics. In the risk analysis section, we analyze business risk and financial risk through CAPM and financial leverage ratio. Finally, for each year where financial data is available, spider graphs are used in order to compare Mobarakeh Steel Company to industry average in terms of profitability, liquidity, and leverage ratios.

3 Theoretical Framework

The analysis of the financial statements leads to the deepening of the users' approach. The financial statements users widely use the analysis of the financial statement to identify the relationship between the items in these statements and the evaluation of the business unit status. In this regard, the analysis of the financial statement can prepare the platform for identification of the problems the companies face and be a solution for decision-making.(Beaver,2010,p.10). In this chapter, the theoretical frameworks that are to be used in the analysis of our financial statements would be addressed.

3.1 The Concept of the Financial Statements Analysis

The financial management scholars have provided different definitions of the analysis of the financial statement. Some of these definitions are:

"the necessity of interpretation of the financial statements in a way that meet the needs of the users to the financial statements and lead to creation and development of methods and techniques that determine the relationship between the numbers in the statements enable comparison, interpretation, and explanation of them. The set of these methods and techniques which are created, developed, evolved during the accounting advancements to meet the increasing need for the financial information, is called 'financial statements analysis'. Its objective is to evaluate the business unit's background, especially its profitability, efficiency, liquidity, and debt clearance on the one hand, and provide the information needed for future planning operations (Raymond, 1985,p.24).

"financial analysis is a tool to identify and evaluate the past and current financial performance and prediction of the company's future, and usually includes the financial statements and cash flow analysis" (Groves, 2007,p.17).

"The financial analysis is the re-categorizing and re-purification of the information in the financial statements to identify the relationship between the main items of the bills and determine their trends during consecutive years" (Foulk, 1972,p.22).

The term 'analysis' has a close tie with the term 'interpretation', however, they are not synonyms. The interpretation is the process of access to the belief and results of the business unit's activities based on the done analysis. Thus, the interpretation depends on the analysis and its results. Based on what was mentioned, the analysis of the financial statement is the process of diagnosis and quantitative expression of the basic relationships between the different items of financial statements whose results are used as a basis for decision-making(Keshwara,2009,p.22). The main part of financial statements analysis and its most prevalent technique is financial statement analysis.

3.2 A Brief History of Financial Statements Analysis by the Use of Financial Ratios

The ratios are among those financial analysis tools used for revealing some of the important truths about the financial status and performance of the business units. There has

been much discussion in accounting literature about the different types of financial ratios and their usage, their analysis, and interpretation, as well as their calculations.

In 1912, Val introduced a new form of study on the different types of financial statements through the compilation and collection of a wide sample of business units' financial statements. He collected and categorized seven different ratios of 918 companies in nine groups, based on the industry and the geographical position. In practice, the ideas of the use of ratios and empirical use of the relative criteria were generalized. The era of advancement of the empirical studies and analysis of the financial ratios reached their peak by Merwin's studies.

He analyzed many ratios of the first six years of the active and inactive companies and concluded that the ratio of the working capital to the total assets and the net debt-to-equity ratio as well as the current ratio, are very important in prediction. Merwin's study was the first logical analysis of the ratios prediction capability" (Horrigan, 1968,p.29).

"during the '60s and '70s, the financial ratios were used as the variables to experiment and describe the economic activities, and in the same era, the empirical bases of financial ratios analysis were expanded. Beaver, in his empirical studies which were done by the use of statistical methods, found out that some ratios predict the bankruptcy of the business units" (Beaver, 1966,p.25).

Most of the users had to trust the writing of a writer. The content of these theories was not tested yet, and the competence of ratios prediction for solving the financial problems was under question. All these defects arose when desirable efforts for progress and expansion of the financial ratios were taken, and the financial communities praised such ratios and known them as simple tools that have prediction capabilities (Faccarello et al., 2016,p.3).

3.3 The Financial Statements and their Role in Reporting

The basis of the financial analysis is the financial statements. The financial statements are the final product of the accounting and financial reporting. The constituent components of a complete set of the financial statement include the balance sheet, the profit and loss statement, the comprehensive income statement, the cash flow statement, and the explanatory notes.(Stolowy et al,2017,p.48).

For the realization of the accounting and financial reporting objectives, the above financial statements are prepared and provided. From among the mentioned financial

statements in the financial analysis, three financial statements including the balance sheet, the income statement, and cash flow statement are usually taken into consideration:

3.3.1 The Balance Sheet

The balance sheet is a report of the assets, debts, and shareholders' equity of a company in a specified period and a basis for the calculation of the return rate and analysis of the company's capital structure. In fact, the balance sheet is a financial statement that presents an instant image of the company's debts and assets and the shareholders' investment rate(Penman,2013,p.32).

The fixed formula of the balance sheet is as follows, in which the assets are on one side of the equation and the sum of the liability and equity is on the other side.(Investopedia, 2020)

Assets= Liability + Equity

(1)

As is clear in the above formula, and also based on the axioms, a company, to pay for all things it seeks to own (assets), must either borrow money (liability) or take it from the investors (equity).

3.3.1.1 The Balance Sheet Items

3.3.1.1.1 The Assets in the Balance Sheet

In the assets sector, the accounts are indexed top-down based on the liquidity, i.e. the ease of changing the assets into cash. The assets are divided into the current assets, i.e. the assets that can be changed into cash in a year or less, and the non-current or long-term assets, i.e. these assets which can be changed into cash in more than a year.(Horngren et al,2004,p,31).

Current Assets

Cash or cash equivalent: the most liquid state of assets that can be in the form of The treasury bills, short-term deposit certificates, and precautionary currency (Horngren et al,2004,p.33).

Marketable securities: Stock and Debt Securities for which there is a liquid market.

Accounts Receivable: is the money that customers owe to the company, which may include a pension for suspicious accounts, as one would always expect some customers to not pay their debt.

Inventory of goods: the goods available for sale which have lower costs or lower market prices.

Pre-paid costs: Expenses previously paid, such as insurance, advertising contracts, or rentals.

The Non-Current Assets

The long-term investments: the securities that would not be changed into cash until the next year. (Horngren et al,2004,p.33).

Fixed assets: assets such as land, machinery, equipment, building, and other durable assets.

Intangible assets: the non-physical but valuable assets such as intellectual property and goodwill. Overall, the intangible assets are only noted in the balance sheet when they are obtained by the organization rather than being developed inside the organization. These assets value may be extremely underestimated.

3.3.1.1.2 The Liability in Balance Sheet

The liability are the debts that must be paid to the outside parties including the suppliers' debt, the interest of securities given to the creditors, the rentals, loans, and the salary and wage. The current liabilities are those debts whose date of maturity is in a year, indexed based on this data. The long-term debts have a date of maturity of over a year. (Horngren et al,2004,p,34).

Current Liabilities

- The current portion of long-term liabilities
- Bank debts
- Payable interest
- Rental, tax, loans
- Payable wages
- Prepayment to the customers
- Payable dividends

Non-Current Liabilities

Long-term liabilities: the interest and principal bonds issued. The suspended tax liabilities: the added taxes which won't be paid until next year.

3.3.1.1.3 The Shareholders Equity in the Balance Sheet:

The shareholders' equity is the money paid to the business holders or the shareholders. This money is also known as the 'net asset' since it is equal to the total assets of a company minus the liabilities to be paid to non-equity holders. The accumulated profits are the net profits of a company that is either re-invested on the company's business or used to pay the used debts, and the rest is distributed to the shareholders as dividends. The treasury stock is the stock that is either bought back by the issuing company or is not issued at all. This stock can be sold at a later date to raise liquidity or reserve and prevent a hostile takeover. Some companies issue premier stock which is indexed separately from the ordinary stock in the equity sector. Premiums are assigned an arbitrary relative value (in some cases the same for ordinary shares), but so small that they do not impose a load on the market value of the shares. The premium and ordinary stocks are calculated by multiplying the relative value with the number of issued stocks. (Horngren et al,2004,p.39).

3.3.1.2 Profit and Loss Statement

The profit and loss Statement are a financial statement which, besides determining the profitability power, describes the reasons behind the changes in the financial status of the business unit per the cash inflow and outflow in a specified period. (Horngren et al,2004,p.41).

In this financial statement, like other fundamental financial statements, a series of important truths relevant to the financial events and activities are provided in the form of notes, as one of the accepted accounting principles. These notes are a complementary and inseparable part of the financial statements.

The Components of the Profit and Loss statement:

Preparation of the performance report based can differ based on the type of a company's activities, however, this difference is in the partial components and all the statements follow a few policies. The most common items in the profit and loss statements are as follows (Horngren et al, 2004, p44-50):

The Income or Sales Rate

The sales income is the company's income from the sale of the products or services, which are written at the top of the statement. This value is gross, and the products and services costs are not considered. Meanwhile, some companies have multiple incomes sum of which is added to total income.

The Costs of Goods Sold

The costs of goods sold are indicative of the direct costs relevant to goods production and sale. Also, if the company provides services, this part is registered as the sales costs. This part of the profit and loss statement is the output of a company's industrial accounting. The costs mainly include human resource costs, materials, production overload, and other costs such as depreciation.

Gross Profit

The gross profit is calculated by deducting the costs of the sold goods (or sales costs) from the sales income.

General and Administrative Costs

General and administrative costs mainly include sales costs, public services, and administration costs. This part of costs includes all the other indirect costs relevant to business administration. Its main components include the salary and wages of the non-productive staff, the current costs such as the insurance and missions, etc. The depreciation costs are also sometimes included in this part; however, it depends on the company's decisions.

The Net Profit before Deduction of Interest and Tax

This item is among the differences between the different patterns of loss and profit statements. In some statements, this part is not among the constituent components of the performance report. Anyways, it is indicative of the profit before deduction of interest, tax, and depreciation. This row of the report is calculated by deduction of the administrative and general costs (except for taxes) from the gross income.

The Depreciation Costs

The depreciation is indicative of the non-cash expenses created by the accountants. The reason behind the use of this kind of expense, which is practically not paid in cash, is the tax. By deduction of this cost from the net income, the taxes of the company can be reduced.

These costs are calculated by the standard methods and based on the direct and indirect tax law. The long-term assets of a company such as the equipment, buildings, vehicles, etc. may undergo value reduction over time and depreciation costs apply to them.

Operating Profit

The operating profit is indicative of the profit earned from the common business operations. In other words, this income is deducted before any passive income, non-operating costs, interest, or taxes. The operating income is a term commonly used in finance and stands for pre-tax and interest income.

Interest Expense

Usually, many of the business need loans to start or continue their activities. These loans have different interests based on the type of business and the paying source. The interest expense includes those loans which are not included in the principal money and are paid to the bank or lender.

Net Income

The net income is calculated by deducting income tax from pre-tax income. This amount is transferred to the balance sheet after the determination of the company's policies in terms of the accumulated profit or loss.

3.3.1.3 Cash Flows Statement

The cash flow statement, as one of the cash, flows financial statements, reports the cash receivables and payments during the financial period of the business unit, and in other words, this statement reports how the cash is supplied and consumed. On the other hand, the balance sheet only reports the cash residuals at the end of the financial period, and by investigating and comparing the two sheets, the increase or decrease in the cash can be identified without having the reasons behind the changes.(Beaver et al,2010,p.2).

Also, the income profit and loss Statement report the expenses, and the net profit and loss relevant to the cash resources and consumptions without the reasons for changes. Therefore, the cash flow is not considered as a replacement for any other financial statements such as the balance sheet and profit and loss statement, but itself is one of the financial statements providing information any other financial statements either cannot provide or only indirectly note them. Any of the financial statements, as well as their summation, can be

effective in meeting the financial reporting objectives. However, one cannot expect that each of them alone will provide all the information needed to decide for the users. (Horngren et al,2004,p.52).

3.4 The Financial Analysis Methods

3.4.1 Vertical Analysis Method

It is called the vertical analysis method since, in this method, the financial Graphs are listed vertically in the financial statements. The analysis includes the calculation of the percentages of a financial statement. The statistics and Graphs existing in these financial statements are obtained from the company's income and the balance sheet. The vertical financial statement analysis is also known as 'partial percentages. (Halpin & Senior, 2009,p.58). The vertical analysis shows the balance sheet composition and helps to answer questions such as the following: which composition of assets does your company use? How does it finance itself and how its balance sheet is compared to that of other companies? And what are the reasons behind the differences?

In the vertical analysis of the financial statements, they are evaluated regardless of the period. It means that the statements are evaluated without being compared to other months or years. The objective of the vertical financial statement analysis is to find the relationship between the different items in the statement. The business leaders seek to investigate the overall productivity of the income and expenses flows. All the information is investigated in the form of ratios. (Warren et al. 2011,p.44).

3.4.2 Horizontal Analysis

In the horizontal analysis of the financial statements, the financial information of the two or more years of the company is compared to each other. The analyst may find similar information while reading the financial statement pages. In this method, by comparison of the Graphs and percentages, finding the differences in the financial year with another year would be easier. The horizontal analysis of the financial statements covers that information that changes from one period to another. The compassion of the items in the financial statements such as the costs of the sold goods or the quarterly net income helps the business manager to observe the business progress trend (Pinson, 2013, p.67).

3.4.3 The Financial Ratios and their Categorization

The financial ratios show the mathematical relationship between two quantities. The ratio calculation of a simple mathematical operation however its interpretation is a very complicated task. The ratio would be significant if it expresses an important relationship between the constituent Graphs (MITTA, 2010, p.45).

A kind of ratio can be used for almost each of the functional aspects of the business units. The analysts, for recognition of the strengths and weaknesses of the business unit, use these ratios as a common tool. However, they cannot show the original problem and only provide existing complications and symptoms.

3.4.3.1 Liquidity Ratios

The liquidity ratios show the unit's ability to extinguishing short-term liabilities. The analysis of these ratios is especially important for the creditors. The foundation of the liquidity ratio is the assumption that the current assets are the main liquidity resources of the company for extinguishing the current liabilities. (KELLER, 2001, p.76).

Current Ratio

This ratio shows that to what extent current assets cover the current liabilities. The greater the current ratio, the greater the finance by the creditors will be (Booker, 2006, p.3).

Current ratio= current asset/current liability (2)

Quick Ratio

This ratio indicates the extent to which the asset that is more stable in value can hold short-term creditors (Marek, 2006, p.283).

Cash ratio= Cash & equivalents / current liability (3)

3.4.3.2 Activity Ratios (Efficiency)

The efficiency of the economic unit managers in terms of the management of the current and long-term assets management is measured by the use of activity ratios. In the calculation of this type of ratio, any accounts of assets that have a significant role in income are investigated. The activity ratios show the accounts participation rate in the realization of the incomes. These ratios, besides showing the account's performance, show the liquidity power of the economic unit. (Sarngadharan & Rajitha Kumar, 2011,p.115).

Asset Turnover Ratio

This ratio shows the rate and effects of the asset turnover in generating the revenue, and compared to the past, indicate whether the asset rise is compatible with the sales rise or not? (Stickney et al, 2013.p.228).

Asset turnover ratio=Total Sale/total assets (4)

Fixed-asset Turnover Ratio

This ratio shows the rate and effect of fixed asset in generating the revenue (Stickney et al, 2013, p.230).

Fixed-asset ratio= Total Sale /fixed-asset (5)

The Inventory Turnover Ratio

The best solution for identification of the goods status is the determination of this ratio. The inventory turnover ratio shows the period in which the goods turnovers have occurred. For calculation of this ratio, first, we deal with the explanation of the inventory turnover concept or the number of goods turnovers. Stickney et al, 2013, p.232).

Inventory turnover ratio= Total Sale /average stock held (6)

3.4.3.3 Leverage Ratios

The capability of the economic unit for fulfilling the short and long-term liabilities is reflected by the use of the leverage ratios. These ratios show the rate of the use of the liabilities in the capital and finance structure as well as the capability to extinguishing the liabilities in the dates of maturity. (Robinson et al., 2015,p.547)

Liability Ratio

The liability or Debt ratio is indicative of the importance and role of the current and long-term debts in total assets of the company, and express that how much of the company's total assets are provided by the debts (Investopedia, 01.03.2020).

Debt ratio= total debt/total asset (7)

The Shareholder Equity Ratio

The ownership ratio indicates how much of the company's assets belong to the shareholders. It is expressed in percentage and shows the importance of the shareholders in the provision of the company's assets (Investopedia, 01.03.2020).

Shareholder Equity ratio=shareholders equity/total asset (8)

Interest Coverage Ratio

It is the ratio of business unit interest costs ratio in the provision of the interest expenses by the operating income (Investopedia, 01.03.2020).

Interest Cost Coverage Ratio=Earnings before interest and tax/interest expense (9)

Profitability Ratios

By the use of profitability ratios, efficiency and management are evaluated. Generating revenue is the ultimate goal of an economic unit. These ratios show the profitability ratio over a period. The weak performance in such cases is indicative of a failure which, if not revised, can lead to the stoppage, bankruptcy, and collapse of the economic unit. (Hatten, 2011,p.199).

Return on Sales

This ratio shows that per each of sales, how much net profit is generated. This ratio is the company's profitability scale and expenses such as the financing expenses of the company which are not related to the sales, are effective in this ratio. (Gitman & McDaniel, 2008, p.493)

Return on Sales= EBIT/ sales (10)

The Return on Assets Ratio

It shows how the company has used its resources and assets to earn a profit and generate efficiency for its investors and creditors. The return on assets ratio can be the ultimate index for evaluation of the competency and efficiency of the company's management. (Vasigh et al,2010, p.171)

For the calculation of this ratio, the net profit must be divided by the average assets.

Return on assets= EBIT/total assets (11)

Return on Equity ratio

The return on equity ratio shows that per each Rial of shareholders' equity, how much net profit is generated for the company. This ratio shows the efficiency of the shareholders' equity. For calculation of the return on equity, first, in case of the presence of the premiums in the company, its profit must be deducted from the net profit and then, divide the obtained number by the shareholder's equity .(Gitman & McDaniel, 2008,p.493) For expression of this ratio in percentage, the obtained number is multiplied by 100.

Return on equity= EBIT/shareholders' equity (12)

DuPont Analysis

The DuPont analysis breaks down the ROE into the Profit Margin (PM), Asset Turnover (ATO), and the ownership ratio. It is useful because the ROE's components each measure different aspects of the company's operations. The advocates of this analysis claim that the ROE's components create a greater vision of the company and its operations and help with prediction (Investopedia, 01.03.2020).

ROA=PM*ATO (13)

3.4.3.4 Market Ratios

3.4.3.5 Price-Earnings Ratio (P/E)

One of the main methods of evaluation that are commonly used by analysts is the price-earnings ratio (P/E). In fact, although today the dividend discount models are more focused by the investors and the investment journals, the stocks analysts use this model more than the dividend discount model. Although the P/E seems to be easier, this facility should not lead the investors to ignore the future uncertainty. It should be noted that any evaluation method, as accurate as it is, requires the estimation of the uncertainties (Kurach et al, 2015, pp128-130).

Price-Earnings Ratio= Price per share/ Earning per share (14)

Earnings per Share (EPS)

The earnings per share are the company's earnings ratio to the number of published stocks, which is indicative of return on investment based on the number of published stocks, i.e. how much earnings the company has made by the asset provided by the shareholders.(Kurach et al,2015, pp128-130).

EPS = net income / average outstanding common share (15)

Dividend per Share (DPS)

The companies do not necessarily divide all the profit they earn at the end of the financial year and save a portion of the company's development plans. The profit distributed to the shareholders per each share is called dividend per share (Investopedia.2020).

DPS = Sum of dividends over a period/ average outstanding common share (16)

3.5 Risk Analysis

3.5.1 Systematic Risk

The systematic risk is the result of the general upheavals of the market and economy and it not exclusive to a specific company. In other words, the systematic risk is created by the overall motions of the market. Based on the portfolio theories, by variation in the portfolio, the non-systematic risk (specific) can be eliminated, but the systematic risk would remain (Houmes et al, 2012, pp.1186-1187).

The beta coefficient is a criterion for measurement of the systematic risk which measures the sensitivity of return of share to the whole market.

$$\beta_x = \frac{\mathrm{Cov}\,(x,m)}{\sigma^2 m} \quad (17)$$

The beta index described in equation 17 for all stock exchange companies that calculated annually by the Securities Exchange Organization of Iran and published in the data base software of Rah Avard Novin. (available at :https://mabnadp.com/rahavardnovin3.accesed on 5.4.2020)

The method of calculation is as follows:

First, daily market returns (m) are calculated and covariance of market returns and stock returns per year is calculated and divided by the standard deviation of market returns (m$\boldsymbol{\sigma}$).

The numerator in this equation shows the covariance of the share return with the market return. The denominator is also indicative of the market return variance. This formula clearly shows the sensitivity of a stock's return to the market's return. Since the covariance variable shows the correlation between two variables, and the variance variable is a criterion for the indication of the total risk, these two variables in the form of a ratio for determination of the

beta coefficient, are indicative of the ratio of sensitivity of a stock to the whole market(Houmes et al,2012, pp.1186-1187).

3.5.2 Operational Risk

The operational leverage of the company is used for the measurement of its operational risk. The sensitivity of profit before tax interest and tax to the change in its sales is called the 'operational leverage'. In this measurement, the percentage of change in profit before the interest and tax and the sales percentage are more used. The following equation is indicative of this measurement (Houmes et al,2012,p.1188).

$$The\ operational\ leverage\ degree\ for\ Q\ units\ of\ production\ (sale) = \frac{\%\Delta EBIT}{\%\Delta SALLES} \quad (18)$$

$$DOL = \frac{Q(P-V)}{Q(P-V)-FC} = \frac{EBIT+FC}{EBIT} = \frac{\%\Delta EBIT}{\%\Delta SALLES} \quad (19)$$

In which,

EBIT is the earnings before interest and tax

FC is fixed costs

$\%\Delta EBIT$ is the percentage of changes in earnings before interest and tax

$\%\Delta SALLES$ is the percentage of changes in production (sales)

3.5.3 The Financial Risk

For measurement of the financial risk, the companies use financial leverage. It is the sensitivity of the earnings change for each stock to the earnings before interest and tax. Or in other words, it is the percentage of change in each stock's earnings to a 1% change in the earnings before interest and tax (Houmes et al,2012,p.1194).

$$degree\ of\ financial\ leverage = \frac{Net\ profit\ changes\ percentage}{EBIT\ \ change\ percentage} \quad (20)$$

$$DFL = \frac{EBIT}{EBIT - FFC} \quad (21)$$

In which:

DFL is the degree of financial leverage

EBIT is the earnings before interest and tax

FC is the fixed costs

3.6 The Working Capital

The working capital is a criterion used to show both the efficiency of a company and its financial health. It is calculated as follows:

Net working capital=the current assets-current debts (22)

The NWC ratio (the current assets divided by the current debts) indicates whether a company has enough current and liquidate assets to cover its short-term liabilities or not. The NWC lower than 1 is indicative of a negative NWC and that the current debts of the company are more than its assets, and investing in this company might be risky (Investopedia,2020).

3.7 Economic Value Added

Generally, it can be said that the objective of earnings measurement is the determination of the amount of the change in the status of a business unit as the result of the operation it has done in a specified period. However, it should be noted that in addition to the amount of earnings, its quality is also important. The earnings have been generated by which extent of investment and how much has the cost of capital been. This concept of profitability lies within the EVA criterion. This criterion measures the effectiveness of the company's operations. If the results of this measurement are positive, it can be concluded that the management has increased the company's value during the current period operation, and if it is positive, the management's performance has led to a decrease in the business unit value(Shimin Chen and James,1997,p.324).

The value-added equation is different between the ROE and the cost of capital (K). It is shown as follows:

Value added=input-output=(ROA-K) *capital (23)

It is used to calculate ROE by dividing the net profit by the total asset distribution. To calculate K, which is the average weighted company capital balance (Weighted Average Capital Costs), it will be fully defined in Section 3.7.1. Equity will be used to calculate the capital through Equity.

Ri=Rf+ Beta*(Rm-Rf)

3.7.1 Calculation of the Cost of capital (K)

The total cost of capital of the company is equal to the Weighted Average Capital Costs (WACC) of the different sources used by the company and the coefficient (weight) of each resource to the company's capital structure. The WACC is calculated by the following formula(Shimin Chen and James,1997,p.326):

An important point in calculating the average balance of company capital costs in Iran is that premium stocks are prohibited in Iran and no company publishes premium stocks, and in general, the cost of capital in Iran is divided into two parts: the cost of debt and the cost of equity.

$$K=WACC=R_i\frac{S_i}{S_i+D_i}+R_d\frac{D_i}{S_i+D_i} \quad (24)$$

In which:

WACC is the weighted average costs of capital

R_d is the effective rate of a company's debts during the investigation period

R_i is the company's ordinary costs of share during the investigation period

D^2 is the average total debts (book value) during the investigation period

S^3 is the average ordinary shareholders' equity (book value) during the investigation period.

$R_d=K_d*(1- T_c)$

The amount of debt (K_d) spent by the company is disclosed annually by the company in the financial statements and is equal to the cost of interest on the company's loans. Since the cost of debt does not include taxes, the cost of tax (T_c) is deducted from the cost of debt. It is used to calculate tax costs by dividing tax costs by pre-interest and tax profits.

The CAPM (Capital Asset Pricing Model) equation will be used to calculate the cost of equity (R_i):

$R_i = R_f + Beta*(R_m - R_f)$

R_f is the risk-free interest rate that is equal to the bank interest rate of the Central Bank of Iran. In Iran, bond rates are prohibited under Islamic law and interest-free interest rates are equal to the central bank's bank interest rates.

R_m equals market returns over the course of a year through changes in the total capital market index. The description of the beta calculation is described in detail in Section 3.5.1,

and it is emphasized that the company's Beta calculations are calculated and published annually by the Securities Exchange Organization of Iran for all companies

3.8 Bankruptcy Prediction

The bankruptcy or inactivity of a trader or company is the state in which the person or company cannot pay his/its debts and extinguish its liabilities. The Altman Z-Model is one of the oldest models of bankruptcy, dating back to the 1960s. The general equation of Altmann Z, which has been used in many studies, is as follows (Havlíčková, 2016, p.42).

$$Z'=6.56+3.26x_2+6.72x_3+1.05x_4 \quad (25)$$

In which:
X_1 Working Capital/Assets
X_2 Retaied Earning/Assets
X_3 EBIT /Assets
X_4 Equity/Liability
2.6 Prosperous company
1.12 =< Z < 2.59 "Grey zone" of unclear results
Z < 1.1 Bankrupt companies

In the current study, the Altman Z-score has been used to diagnose the companies' bankruptcy. This formula is as follows (Esmaeilzadeh et al,2015,p.3)

$$Z'=0.717x_1+0.847x_2+3.107x_3+0.42x_4+0.998x_5 \quad (26)$$

In which:
Z' is the total index
X_1 is the ratio of working asset to total assets
X_2 is the ratio of accumulated profit to the total assets
X_3 is the ratio of EBIT to total assets
X_4 is the ratio of the book value of the company's shares to the book value of total debts
X_5 is the ratio of sales to total assets

In this model, the lower the Z', the higher the company's financial problems, as the companies with Z' score above 2.9 are included as healthy companies and the companies with

Z' lower than 1.23 would be included as bankrupt companies. the Z' score between 1.23 and 2.9 is considered as the doubt area and this area must be interpreted with caution (Altman, 1983). The model is executed by the use of statistical data of the mentioned sample. First, we choose the bankrupt companies and take them as the financially incapable companies one year, two years, and three years before the bankruptcy, and proportionate to each of these incapable companies, we choose a healthy company with almost similar structure from the same industry, to do the comparisons.

3.8.1 Labor Productivity Indicators

One of the ways to daily improve and advance the economy of an industrial production unit is the measurement of its productivity. the improvement opportunities are defined based on the measurement and analysis of the productivity indicators and the improvement cycle can be completed based on this indicator (Datta,2005,p.140).

3.8.1.1 Personal Expenses to Value Added

This indicator is used for measurement of the personnel expenses productivity. It means that per one unit of personnel expenses, how many units are added to the organization's value-added. (Havlíčková,2016,p.70).

Personal Expenses to Value Added = Personal Expenses / Value Added (27)

3.8.1.2 Labor Productivity from Sales

The labor productivity per sales indicator is actually the use of per capita sales for investigation of this indicator, i.e. hum much sale is created per one employee the labor productivity from the sale can be calculated by the following formula (Havlíčková,2016,p.71).

Labor Productivity from Sales = Sales / Number of Employees (28)

3.9 Spider Graph

The spider chart in the practical part of this dissertation will be used to compare profitability, debt-to-liquidity ratios with the Sectoral Average each year. The important point in the spider chart is that the average section is completely different from the industry average. The

average share per year is equal to the average of the three groups of these indicators: profitability, liquidity, and debt ratio. The table below shows the indicators used in the practical part of this dissertation (Havlíčková,2016,p.43).

Table 3-1. Indicators Used for the Spider Graph

Profitability Ratios	**Formula**
ROA	Return on Sales= EBIT/sales
ROS	Return on Sales= EBIT/ sales
ROE	Return on equity= EBIT/shareholders' equity
Leverage Ratios	**Formula**
Debt Ratios	Debt ratio= total debt/total asset
Equity Ratio	Shareholder Equity ratio=shareholders equity/total asset
Liquidity Ratios	**Formula**
Current Ratio	Current ratio= current asset/current liability
Quick Ratio	Quick ratio= Cash & equivalents / current liability
Cash Ratio	Quick ratio= Cash / current liability

4 Practical Part

4.1 Introduction of the Chosen Company

Hosting one of the world's oldest civilization, Iran, officially the Islamic Republic of Iran, is the second largest country in the middle east. The currency of Iran is the Iranian Rial, referred to as IRR in international transaction according to ISO 4217 standard. Iran has an abundance of energy resources in the form of the world's second largest proven gas reserves and fourth largest oil reserves. Capitalizing on the readily available energy resources and iron ore from mines located in Golgohar and Chadermaloo, steel production has attracted a great deal of investment in Iran. This is specially the case in Isfahan province, the industrial heart land of Iran, where two of the largest players in Iran's steel production, that is Mobarakeh Steel Company and AmirKabir Steel company, are located.

The Mobarakeh Steel Company, mainly located in a 35 square kilometer industrial complex in the city of Mobarakeh, is one of the largest companies within Iran. Registered in 1990, Mobarakeh Steel Company has also been listed on the Tehran Stock Exchange Market since 2006. Not only a pioneer of steel sheet production and promoter of steel industry, Mobarakeh Steel Company also plays an important part in the industrial, economical, and social development of Iran. The company produces over 50% of the steel consumed in the automotive, light metal, heavy metal, packaging, electrical equipment, household appliances, and fluid transmission pipeline industries in Iran. In addition to its main plant in Mobarakeh, the company has six other industrial complexes in various locations within Iran and employs in excess of 20,000 people in different sectors.

Amir Kabir steel company, also referred to as Amir Kabir Company, was established in February 1996 in order to produce steel sheets and commenced operation three year after establishment. The company is located in the city of Kashan and is considered to become one of the most important competitors for Mobarakeh Steel Company within the near future.

4.2 Absolute Indicators

In this chapter of the thesis, Mobarakeh Steel Company's data is utilized in order to analyze the balance sheet and profit and loss statement.

4.2.1 Vertical Analysis of Assets

Table 4-1: Vertical Analysis of the Balance Sheet - Assets

		2013	2014	2015	2016	2017	2018
TA	Total assets	100%	100%	100%	100%	100%	100%
CA	Current assets	50%	53%	50%	48%	43%	49%
CA1	Short-term financial assets	5%	6%	3%	3%	3%	3%
CA11	Cash	3%	5%	2%	2%	2%	2%
CA12	Short term investments	2%	1%	1%	1%	1%	1%
CA2	receivables & prepayment	27%	25%	22%	20%	21%	28%
CA21	Accounts and business receivables	11%	11%	16%	18%	15%	16%
CA22	Long-term receivables	0%	0%	1%	0%	5%	3%
CA23	other receivables	8%	6%	0%	0%	0%	7%
CA24	prepayment	7%	7%	4%	2%	1%	2%
CA3	Inventory	18%	23%	26%	25%	19%	19%
CA31	Goods	12%	11%	16%	13%	12%	13%
CA32	Other inventory	7%	11%	9%	12%	7%	6%
FA	Fixed assets	50%	47%	50%	52%	57%	51%
FA1	long term investments	17%	18%	19%	19%	19%	26%

FA2	Intangible fixed assets	2%	1%	2%	2%	2%	1%
FA21	Intangible fixed assets under construction	0%	0%	0%	0%	1%	1%
FA22	Software	1%	1%	2%	2%	2%	0%
FA3	Tangible fixed assets	30%	27%	28%	30%	36%	24%
FA31	Property of machinery and equipment	30%	27%	27%	30%	31%	21%
FA32	Tangible fixed assets under construction	0%	0%	1%	0%	5%	3%

Source: Own calculation

The vertical analysis includes calculation of the percentages of a financial statement to a base such as the assets. It shows the balance sheet composition and helps answer questions such as the followings: what composition of assets does your company use? How does it finance itself? And how is the company's balance sheet composition compared to similar companies or the industries average? And what are the reasons behind the differences?

From Table 4-1, notice that as the vertical analysis of a company's assets shows that during the 2013-2014 period, current assets and fixed assets constitute approximately equal portions of the total assets. Furthermore, this situation has not been changed tangibly. The only slight divergence from the mentioned balance between current and fixed assets occurred in 2017, where fixed assets had made up about 57% of the total assets of the company. The change occurring in 2017, is largely attributable to the investment made by Mobarakeh Steel Company in accruing new equipment and modernizing its machinery,which has resulted in significant growth in fixed assets this year. The company's accounts receivable and prepaid expenses have had a falling trend during 2013-2017 period. However, in the 2017-2018 period, the mentioned accounts receivable and prepaid expenses have been raised again, which has been due to the long-term accounts receivables as well as the significant rise in other accounts receivables of the company

The company's inventory trend has been also rising during 2013-2016 period, while in the years following 2016 the inventory trend has been falling .One of the company's assets accounts which has had a significant increasing trend to the total assets, has been the long-term investment that was increased from 17% of the total assets to 26%. During this period, long-term investment account has had steady growth, due to the investment of the company in other similar active steel Companies.

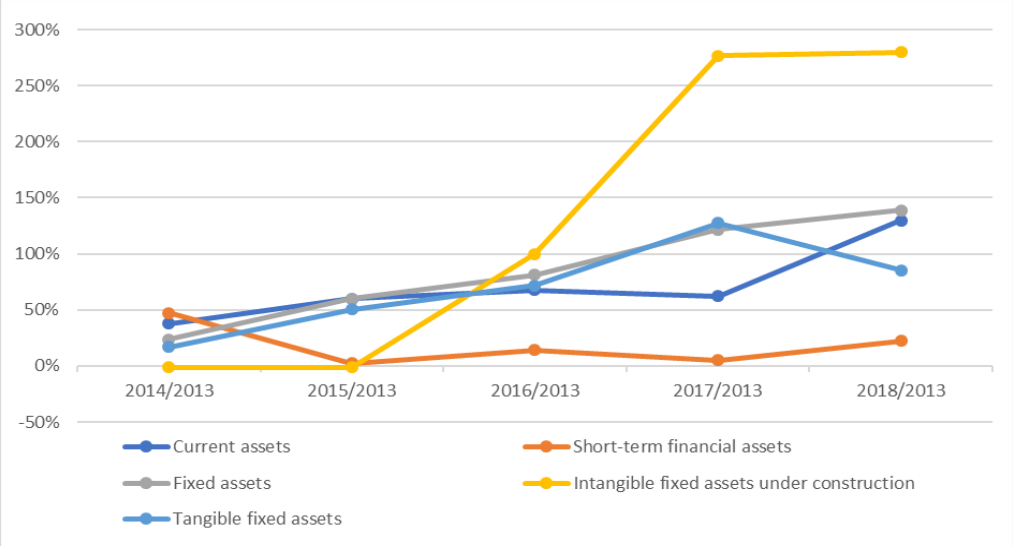
Moreover, inventory Account of the company has significantly decreased in the last years and in comparison, with other years, its decline is due to the decline of other inventory accounts including intermediate goods.

4.2.2 Horizontal Analysis of Assets

Table 4-2: Horizontal Analysis of the Balance Sheet - Assets

		2014/2013	2015/2013	2016/2013	2017/2013	2018/2013
TA	Total assets	31%	60%	74%	92%	134%
CA	Current assets	38%	60%	68%	62%	130%
CA1	Short-term financial assets	47%	3%	14%	5%	22%
CA11	Cash	89%	1%	23%	11%	36%
CA12	Short term investments	-20%	5%	0%	-5%	0%
CA2	receivables& prepayment	20%	28%	29%	48%	141%
CA21	Accounts &business receivables	30%	133%	186%	151%	233%
CA23	other receivables	0%	-100%	-100%	-100%	105%
CA24	prepayment	29%	-8%	-62%	-67%	-39%
CA3	Inventory	61%	123%	139%	99%	142%
CA31	Goods	28%	121%	101%	95%	161%
CA32	Other inventory	117%	126%	205%	105%	110%
FA	Fixed assets	24%	60%	81%	121%	139%
FA1	long term investments	37%	76%	92%	108%	247%
FA2	Intangible fixed assets	5%	64%	137%	156%	-13%
FA21	Intangible fixed assets under construction	-1%	-1%	100%	277%	280%
FA22	Software	7%	83%	148%	120%	-100%
FA3	Tangible fixed assets	17%	50%	72%	127%	85%
FA31	Property of machinery and equipment	17%	45%	72%	97%	65%

Graph 4-1: Horizontal Analysis of the Balance-Sheet – Assets



In the horizontal analysis, the ration of the structural changes in a company over time to the created base year, that is 2013, is investigated. A summary of the Horizontal analysis of Mobarakeh Steel Company Assets is given in Table 4-2, while Graph 4-1 helps to visualize this information.

The results of the horizontal analysis indicate that the general trend of the company's assets to the base year has been rising and compared to the previous years, the slope of this rising trend has been higher in the last year. Also, investigation of the company's current assets in the horizontal analysis is indicative of the increase in this ratio. Although this ratio has been falling in 2017, it has returned to its rising trend in 2018. One of the notable points in this analysis is the steep rising trend in the company's intangible assets, which except 2014, has experienced significant growth in other years and this issue is because of the new franchise provided for the company to start the investment.

The horizontal analysis of the fixed assets is indicative of an almost uniform rising trend to the base year 2013, which has only experienced little modified in 2018.

4.2.3 Vertical Analysis of Liabilities and Equity

Table 4-3: Vertical Analysis of the Balance Sheet - Liabilities & Equity

		2013	2014	2015	2016	2017	2018
TL	Total liabilities & Equity	100%	100%	100%	100%	100%	100%
CL	Current liabilities	49%	48%	49%	51%	42%	35%
CL1	Short-term payables	26%	23%	24%	22%	15%	12%
CL11	Business and documents payable	4%	5%	10%	11%	9%	4%
CL12	other payable	6%	4%	0%	0%	0%	3%
CL13	Deferred payables	4%	2%	3%	3%	1%	1%
CL14	Due from state - tax liabilities and subsidies	4%	3%	2%	2%	1%	2%
CL15	Payables to social securities and health insurance	9%	9%	8%	7%	3%	3%
CL2	Bank loans and financial accommodations	23%	25%	25%	29%	27%	22%
CL21	Short-term bank loans	23%	25%	25%	29%	27%	22%
LA	Long-term liabilities	4%	4%	5%	4%	9%	5%
LA1	Long-term accounts and payables	0%	1%	0%	0%	0%	0%
LA2	Other payables	3%	4%	5%	4%	9%	5%
E	Equity	47%	48%	46%	45%	49%	60%
E1	Registered capital	23%	24%	27%	25%	34%	28%
E2	Retained earnings from previous years	22%	21%	16%	5%	12%	29%
E3	Reserve funds	3%	3%	3%	15%	3%	3%
E31	Legal reserve fund	2%	2%	3%	3%	3%	3%
E32	Reserve design and development	0%	0%	0%	0%	0%	0%
E33	other Reserve	0%	0%	0%	13%	0%	0%

Source: Own calculation

The vertical analysis of the debt structure and equity deals with investigation of the debt and equity composition. Furthermore, it determines the ratio of the current and long-term debt as well as the ratio during the period.

Table 4-3 indicates that: the highest share of the company's debt belongs to the current debt, and that the trend of the debts during 2013 to 2018 has been falling. The main reason for this trend has been the significant decrease in short-term accounts payable, which has been reduced from 26% of the total debts to 12%. The equity ratio increased from 47% to 60% during the review period, due to the increase in the company's registered capital, which has been viable by the capital increase in this period.

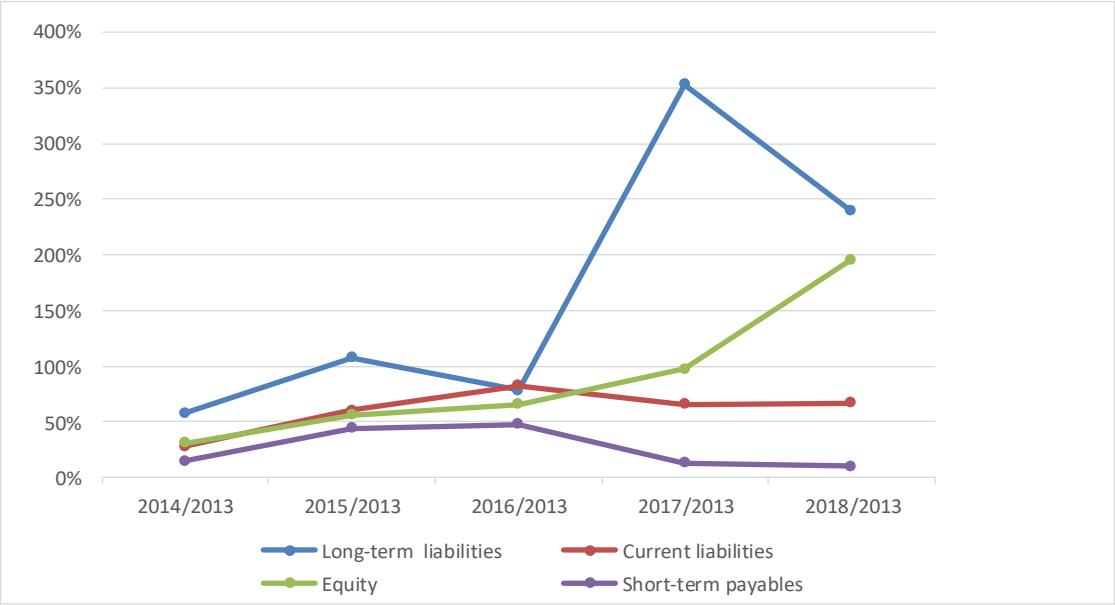
4.2.4 Horizontal Analysis of Liabilities and Equity

Table 4-4: Horizontal Analysis of the Balance Sheet - Liabilities & Equity

		2014/2013	2015/2013	2016/2013	2017/2013	2018/2013
TL	Total liabilities & Equity	31%	60%	74%	92%	134%
CL	Current liabilities	28%	60%	82%	66%	67%
CL1	Short-term payables	15%	44%	48%	13%	10%
CL11	Business and documents payable	72%	323%	407%	391%	154%
CL12	other payable	-14%	-100%	-100%	-100%	17%
CL13	Deferred payables	-38%	21%	31%	-34%	-58%
CL14	Due from state - tax liabilities and subsidies	6%	-12%	-27%	-31%	26%
CL15	Payables to social securities and health insurance	40%	60%	36%	-28%	-29%
CL2	Bank loans and financial accommodations	43%	79%	122%	126%	132%
CL21	Short-term bank loans	43%	79%	122%	126%	132%
LA	Long-term liabilities	58%	108%	78%	353%	239%
LA1	Long-term accounts and payables	94%	-100%	-100%	-100%	-100%
LA2	Other payables	52%	140%	106%	424%	292%
E	Equity	31%	56%	66%	98%	196%
E1	Registered capital	40%	94%	94%	191%	191%
E2	Retained earnings from previous years	23%	15%	-64%	0%	204%
E3	Reserve funds	34%	73%	906%	114%	163%
E31	Legal reserve fund	40%	86%	94%	134%	191%
E32	Reserve design and development	0%	0%	0%	0%	-100%

Source: Own calculation

Graph 4-2: Horizontal Analysis of the Balance Sheet - Liabilities & Equity



Source: Own calculation

In this analysis, the horizontal investigation of the liabilities and equities of the stocks balance sheet based on the base year 2013, as well as its trend during the review period, will be evaluated. A summary of the Horizontal analysis of liabilities and Equity of Mobarakeh Steel Company is given in Table 4-3, while Graph 4-2 helps to visualize this information.

From Table 4-3 and Graph 4-2, notice that current liabilities have been increasing until 2016, while they have been decreasing after that year. Overall, the current liabilities trend has been falling as compared to the base year. The long-term liabilities of the company have had a rising trend based on the trend analysis and compared to the base year and in 2017 it has gone through a 350% increase compared to the base year's values. Therefore, the long-term prepayment of the company, which has significantly increased, is the main reason for this rising trend.

The equity trend in the review period has been also rising. In addition, the composition of the equities shows that in the review period, have been changed from retained earnings to the capital, which indicates that the company has had a capital increase from the retained earnings. Finally, other components of the equities such as the reserves, capital, and retained earnings have had a rising trend compared to the base year, which have consequently led to a rising trend in the equities.

4.2.5 Vertical Analysis of the Profit/Loss Statement

Table 4-5: Vertical Analysis of the Profit/Loss Statement

	2013	2014	2015	2016	2017	2018
Total Revenue	100%	100%	100%	100%	100%	100%
Expenses on sold goods	61%	58%	68%	72%	65%	54%
Gross profit	39%	42%	32%	28%	35%	46%
Sales, General and administrative	5%	5%	6%	8%	7%	4%
Other operating expenses	1%	4%	1%	0%	1%	1%
Operating profit	35%	41%	27%	20%	28%	43%
Depreciation expense	2%	2%	2%	3%	3%	0%
Interest Expense	6%	6%	8%	11%	9%	7%
Other income (expense)	4%	2%	7%	3%	3%	7%
Earning before tax	33%	36%	26%	11%	23%	43%
Tax	4%	4%	3%	1%	2%	5%
Net income	28%	32%	23%	10%	21%	38%

Source: Own calculation

Investigation and analysis of the profit and loss sheet in the vertical analysis method deals with the analysis of the profitability components and the costs based on the total revenues. A summary of the vertical analysis of profit/loss statement of Mobarakeh Steel Company is given in Table 4-5.As the vertical analysis Investigation and analysis of the profit and loss sheet in the vertical analysis method deals with the analysis of the profitability components and the costs based on the total revenues. A summary of the vertical analysis of profit/loss statement of Mobarakeh Steel Company is given in Table 4-5, the cost to sale ratio has had a rising trend from 2013 to 2016, and it has gone through a significant decrease in 2017-2018, followed by falling trend with the decrease in the cost of sales. Therefore, gross profit margin had the opposite trend of total revenue. First, it had significantly decreased till 2016 and then it had falling trend by reducing the total costs

The costs could increase due to the ratio of overhead expenses to the total costs; the company could decrease the overhead costs in 2017 and 2018.

Investigation of the vertical analysis of the administrative, general, sales costs is indicative of a rising trend from 2013 to 2016, and after 2016, this trend has been falling. The investigation of the operating profit/loss also shows that similar to the gross profit margin, it has had a falling trend until 2016 and after that year, it has gone through a significant rise.

The administrative, general and sales costs had decreased due to the reduction of the personnel costs in this company.

The company's financing costs, as an important non-operating expense, has had a fluctuating trend during the 2013-2018 period and has made up an average 8% of the company's total sales. Other non-operating costs of the company have also had a fluctuating trend during the review period and have made up an average of 4% of the company's revenues.

Investigation of the vertical analysis of the net profit is indicative of a downward trend during the 2013-2016 period, although it has been upward after 2016. The vertical analysis clearly shows that the main reason behind this trend is the decrease in the costs to the revenue during 2017 and 2018. On the other hand, the decrease in the administrative, general, and costs sales in 2017 and 2018 has been among the reasons behind the increase in the net profit in these two years.

The company's financing costs as an important non-operating cost has had a fluctuating trend during 2013-2018 period and has made up an average 4% of the total sales of the company.

4.2.6 Horizontal Analysis of the Profit/Loss Statement

Table 4-6: Horizontal Analysis of the Profit/Loss Statement

	2014/2013	2015/2013	2016/2013	2017/2013	2018/2013
Total Revenue	38%	44%	11%	43%	124%
Expenses on sold goods	30%	61%	30%	53%	97%
Gross profit	50%	18%	-21%	28%	166%
Sales, General and administrative	54%	79%	92%	105%	110%
Other operating expenses	546%	31%	-81%	-6%	151%
Operating profit	61%	10%	-37%	17%	173%
Depreciation expense	56%	76%	79%	124%	-100%
Interest Expense	54%	93%	118%	118%	170%
Other income (expense)	-27%	187%	-19%	17%	336%
Earning before tax	52%	16%	-62%	-1%	192%
Tax	38%	-3%	-74%	-32%	134%
Net income	54%	18%	-60%	4%	201%
Earnings per share	10%	-39%	-86%	-64%	3%

Source: Own calculation

In this chapter, we would deal with the analysis of the profit/loss sheet components by the horizontal method, comparing it to the base year 2013. The first component of the

profit/loss sheet is the revenue. As the results show, the company has faced a revenue decrease until 2016, however, in 2017 and 2018, the trend has become upward, and the company revenues have gone through a great increase, specifically in 2018. Also, the cost trend has been generally rising, however, compared to the rate of the revenue increase in 2017 and 2018, the increase has been lower, which was also noted in the vertical analysis. It has ultimately led to creation of a good gross profit margin in 2017, and especially in 2018, the operating profit also, following the revenue trend until 2016, has had a falling trend. But in 2017 and 2018, the trend has become rising which is due to the revenue increase as well as the decrease in cost to revenue ratio, which was investigated by the vertical analysis. Investigation of the company's net profit also, like the operating profit, has been falling at the beginning, and it has continued until 2016. After 2016, we can see the increase in the net profit.

Graph 4-3: Horizontal Analysis of the Profit/Loss Statement

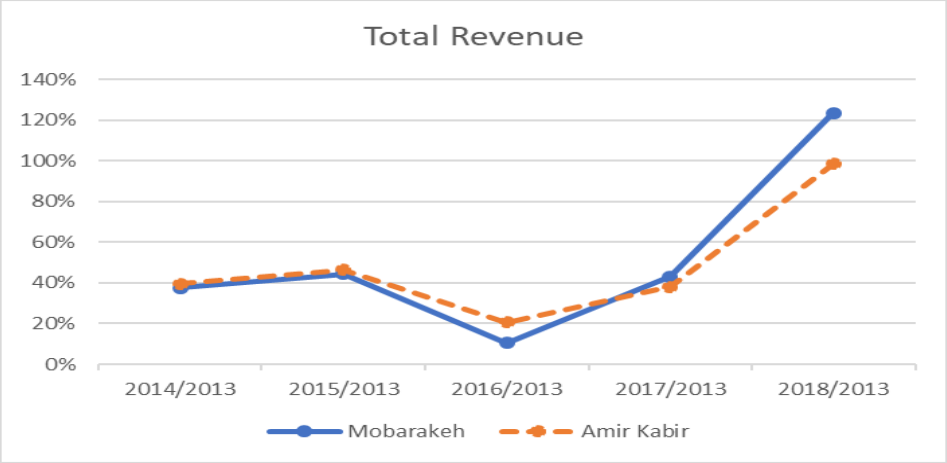
Source: Own calculation

Graph 4-3 shows an overview of the horizontal analysis of the important accounts in the profit/loss sheet, and from this Graph, a good conclusion of the profitability including the gross profit margin, operating profit, and net profit can be made. As the results show, the increasing trend of the costs has been higher than the revenues and as a result, it has led to creation of a falling trend in the net and operating profit until 2016. On the other hand, the rising trend of revenues in 2017 and 2018 has become steeper compared to the costs trend, which is quite clear in 2018. And as a result, it has led to creation of a rising trend in operating profit and net profit.

4.2.7 Comparison Horizontal Analysis of the Profit/Loss Statement

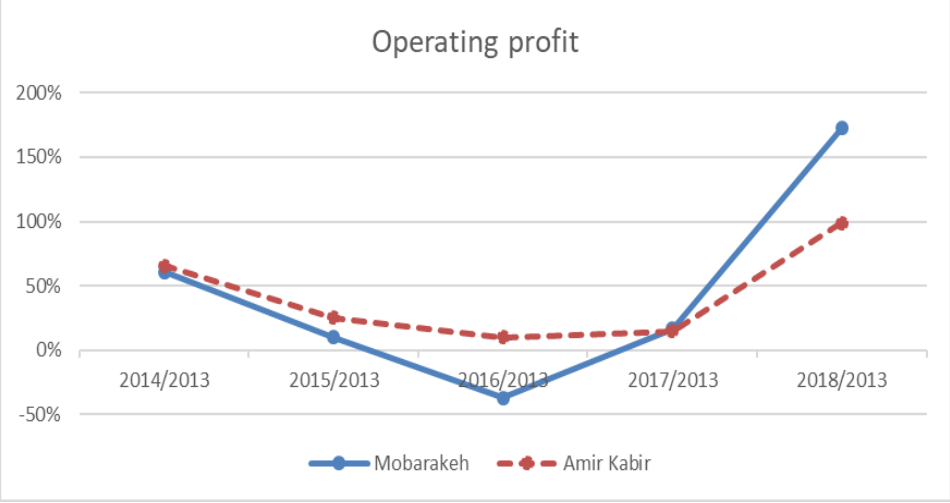
In this section, the horizontal analysis of profit and loss statement of Steel Company is compared to that of its competitor, Amir Kabir Steel Company. This comparison is performed in order to examine the precise trend of development in addition to establishing strength and weakness of Isfahan's Mobarakeh Steel Company.

Graph 4-4: A comparison between Mobarakeh and Amir Kabir –Total Revenue



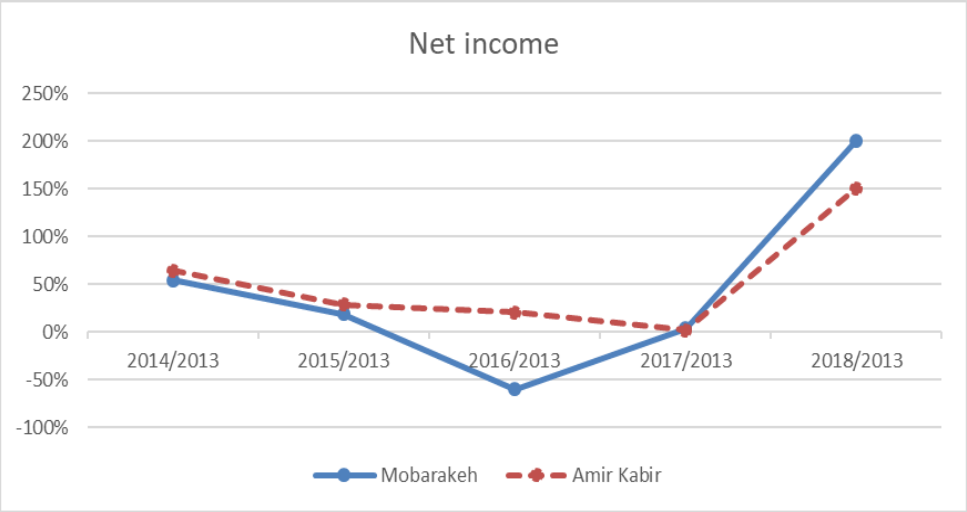
Source: Own calculation

Graph 4-5: A comparison between Mobarakeh and Amir Kabir - Operating profit



Source: Own calculation

Graph 4-6: A comparison between Mobarakeh and Amir Kabir – Net income



Source: Own calculation

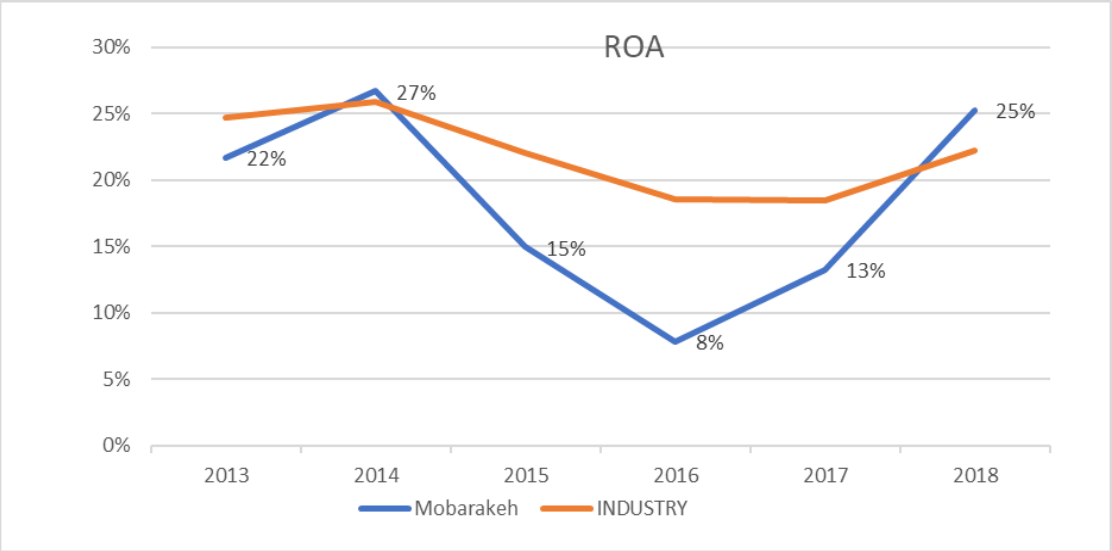
In order to put the horizontal Analysis of Isfahan's Mobarakeh Steel Company into perspective, its main competitor in the field of steel sheet production, Amir Kabir Company, was also examined and then their performances were compared with each other. The results are displayed in Figure 4-4 through Figure 4-6. The results indicate that Isfahan's Mobarakeh Steel Company had a higher significant falling trend in sales than its competitor from 2013 to 2016. However, in the latter years, the rising trend in sales was higher and the growth in sales was more profound. There are the same trends for operating profit and net profit, in other words, compared to its competitor, the Mobarakeh Steel Company had a higher declining trend in operating and net profits from 2013 to 2016; however, in the two years, the steel company had a rising trend in comparison to Amir Kabir Steel Company.

4.3 Profitability Ratios

The profitability and adequate return on investment are among the important criteria for effective management of the company in the field of profitability. Profitability ratios are metrics that indicate the ability of a given company to generate profit in proportion to its investments during a certain period. In this section, the profitability ratios were compared to the steel industry average as a base line in order to better understand the growth and trends of the company.

4.3.1 Return on Assets

Graph 4-7: ROA

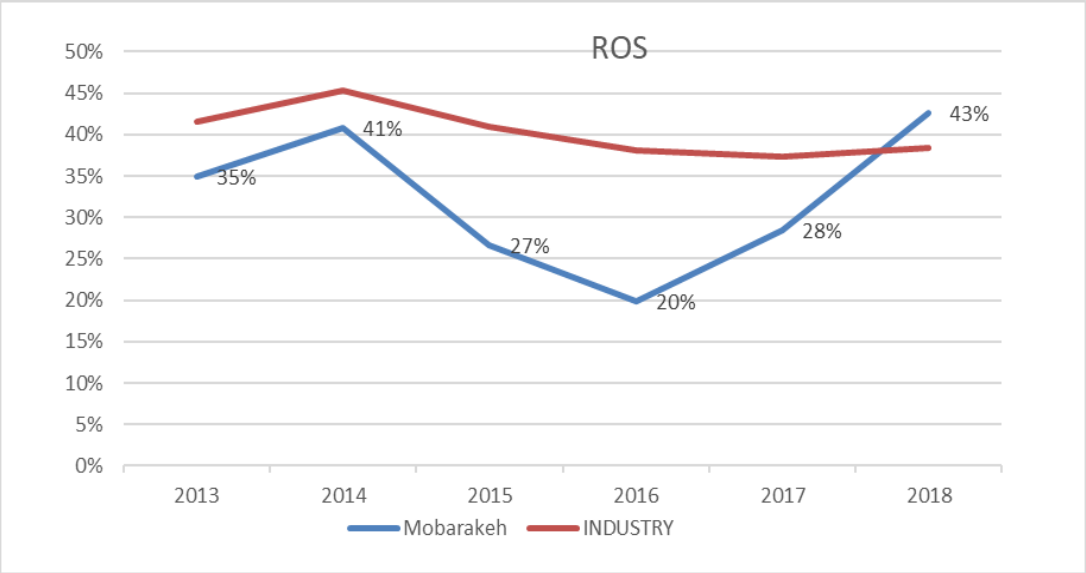


Source: Own calculation

One of the important criteria of profitability is the company's Return on Assets (ROA). This indicator seeks to compare the ratio of the company's profitability to assets. The ROA of Mobarakeh Steel Company is compared to the industry average in Figure 4-7. From Figure 4-7 observe that the ROA as a falling trend from 2014 to 2016, while from 2016 to 2018, we have faced an upward trend. Once again, from Figure4-7, comparing the company's Return on Assets with the average of the industry also showed that the company exceeded the average of the industry in 2018. One of the reasons behind this rising trend is the increase in the gross profit, which is due to the significant decrease in the cost to sales ratio. The mean value of this indicator is 18% during the review period, which indicates that per each unit of the assets, the company has managed to make 0.18 unit of net profit.

4.3.2 Return on Sale

Graph 4-8: ROS

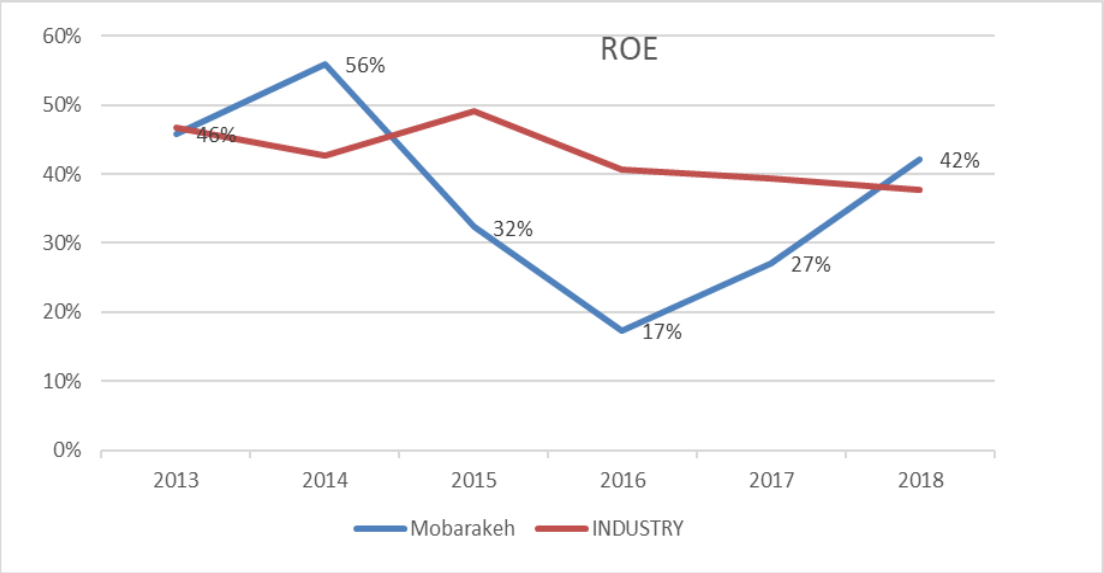


Source: Own calculation

Another important indicator for investigation of the profitability is the profit margin ratio of the return on sale (ROS). This indicator also, like the ROA, has a similar trend. This indicator has had a falling trend at the beginning, and then it has gone through a rise. From 2013 to 2016, the company has gone through a significant decrease in profitability, and from 2016 to 2018, we can see an outstanding rising trend in profitability and sales. The rate of profitability has been higher, and it has had steeper than the sales trend. One of the reasons behind the rising trend in the recent years is the increase in the gross profit, which is due to the significant decrease in cost to sales ratio. The mean value of this indicator is 25% during the review period, which indicates that the company has managed to make 0.25 unit of net profit per each unit of sales. Comparing the company's Return on Sales with the average of this ratio in the steel industry in Iran also showed that the company exceeded the company's Return on Sales in 2018.

4.3.3 Return on Equity

Graph 4-9 ROE



Source: Own calculation

One of the important indicators for investigation of the company's equities is the return on equity. The analysis of the ROE also has been like other profitability indicators and exactly, it has had a falling trend until 2016 and a rising trend after that. The reason behind that is the increase in the net profit due to the decrease in cost of goods sold and the declining trend of this ratio is resulted from the reduction of net profit which is due to an increase in the ratio of the total cost to sales.

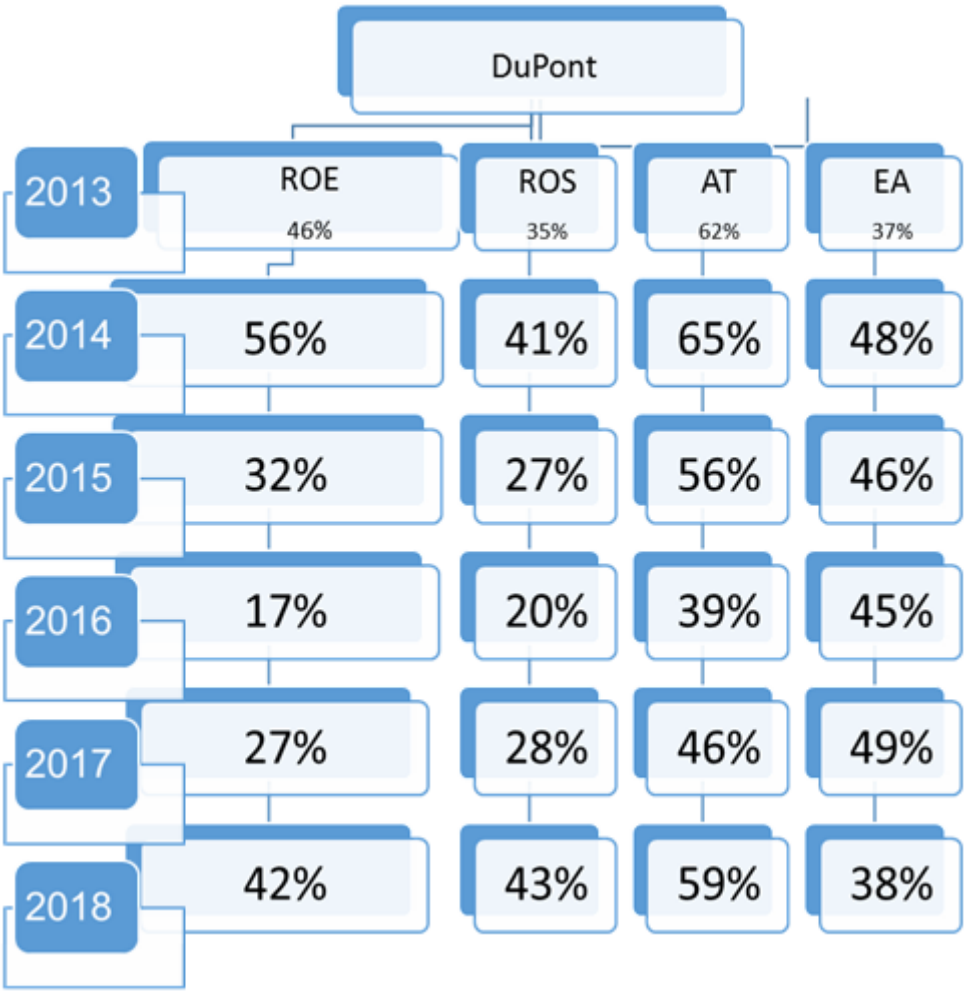
The mean value of this indicator during the review was 29% which is indicative of 0.29 unit of net profit per each unit of equity.

Comparing the company's Return on equity with the average of this ratio in the steel industry also showed that the ratio exceeded the average of the industry in 2017 and 2018.

4.3.4 DuPont Model

In equation 14, EA is equal to the property ratio and is calculated from the division of equity rights into total assets. Graph 4-10 shows how to analyze DuPont .As Graph 4-10 shows, increasing the profit margins of the company's sales and its turnover, causes an increasing the return on equity returns, and increasing the equity ratio, causes an decreasing the return on equity. Conversely, decreasing in the property ratio, causes an increasing in the return on equity

Graph 4-10: DuPont Model Analysis



Source: Own calculation

The analysis based on the DuPont model is used to investigate the return on equity. The higher the net profit margin and the asset turnover, the higher the return on equity will be. On the other hand, the rise in the equity to asset ratio also leads to the increase in return on assets. As DuPont analysis in the graphs 4-10 shows the return on equity has increased in 2014 compared to 2013, which is quite clear in the DuPont analysis. The reason behind that is the increase in net profit margin and asset turnover.

As is seen in Graphs 4-10, the ROE has decreased from32% in 2015 to 17% in 2016, and based on the DuPont analysis, the ROS has also decreased from 27% to 20%. Also, the

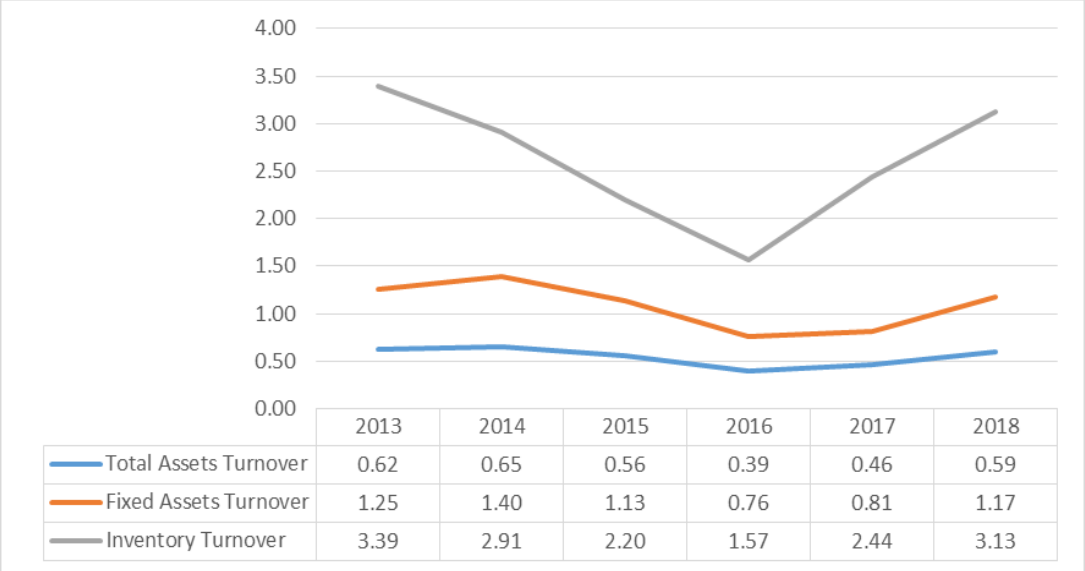
asset turnover is decreased from 56% to 39%. The main reason behind the decrease in ROE is the drastic reduction in asset turnover which has led to the significant decrease in this ratio.

The comparison of the ROE in 2017 and 2018 indicates that it has increased from 27% in 2017 to 42% in 2018. The DuPont analysis shows that ROS has also increased from 28% to 43%, which is the most important reason behind the increase in ROE.

4.4 Activity Ratios

These ratios determine the effective use of the current resources. In the following, the analysis of the activity ratios would be dealt with.

Graph 4-11: Activity Ratios



	2013	2014	2015	2016	2017	2018
Total Assets Turnover	0.62	0.65	0.56	0.39	0.46	0.59
Fixed Assets Turnover	1.25	1.40	1.13	0.76	0.81	1.17
Inventory Turnover	3.39	2.91	2.20	1.57	2.44	3.13

Source: Own calculation

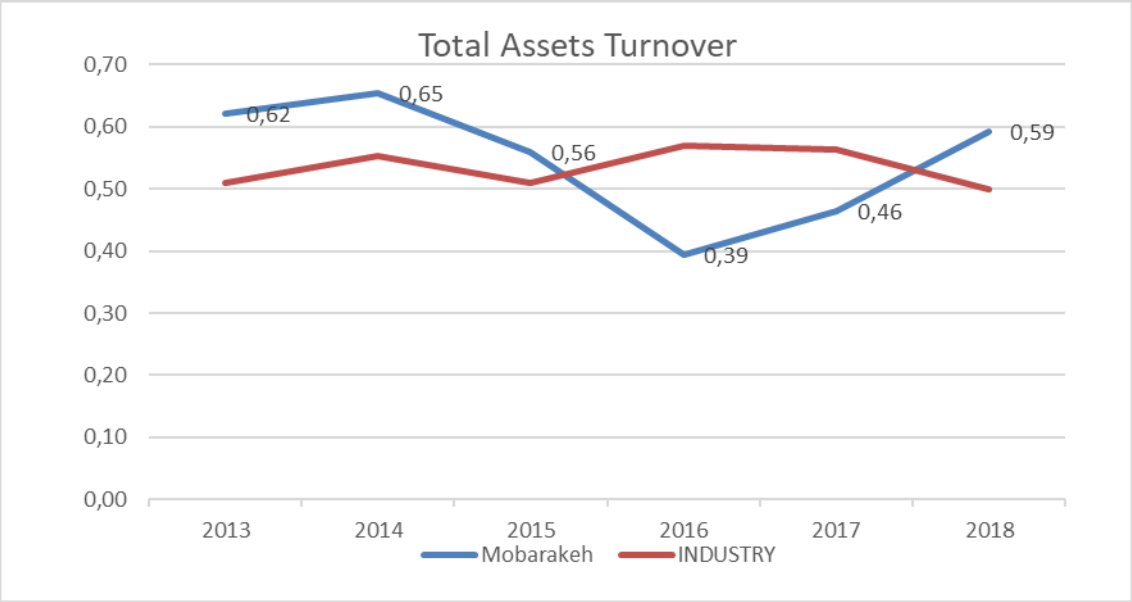
Graph 4-11 shows an overview of the activity ratios and their trends. As the activity ratios analysis shows, the asset turnover has had a downward trend until 2016, however it has been upward during the last two years. The asset turnover ratio is 0.55 on average, which indicates that per one unit of assets, 0.55 of sale has been made. The fixed-asset turnover has been increasing in 2014, and after that, it has had a falling trend until 2016. During the last two years, it has become increasing again. The fixed-asset turnover ratio has been 1.09 on average which indicates that per one unit of fixed assets, 1.09 of sale has been made. On the other hand, the asset turnover has had a falling trend until 2016 which is due to the decrease in sales process and increase in inventory. In the last two years, this trend has become rising which is due to the increase in sales and the decrease in inventory. The ratio of asset turnover

is 2.60 on average. It shows that the higher this ratio, the higher inventory turnover and higher sales.

Regarding the similar trend of these three ratios, the fluctuations of these ratios are mainly caused because of the reduction in the sale in the early years and the increase in the sales of the company in the last two years. The higher rising trend in the ratio of inventory turnover is due to the increase in sales and the decrease in the ratio of goods inventory.

4.4.1 Comparison Activity Ratio

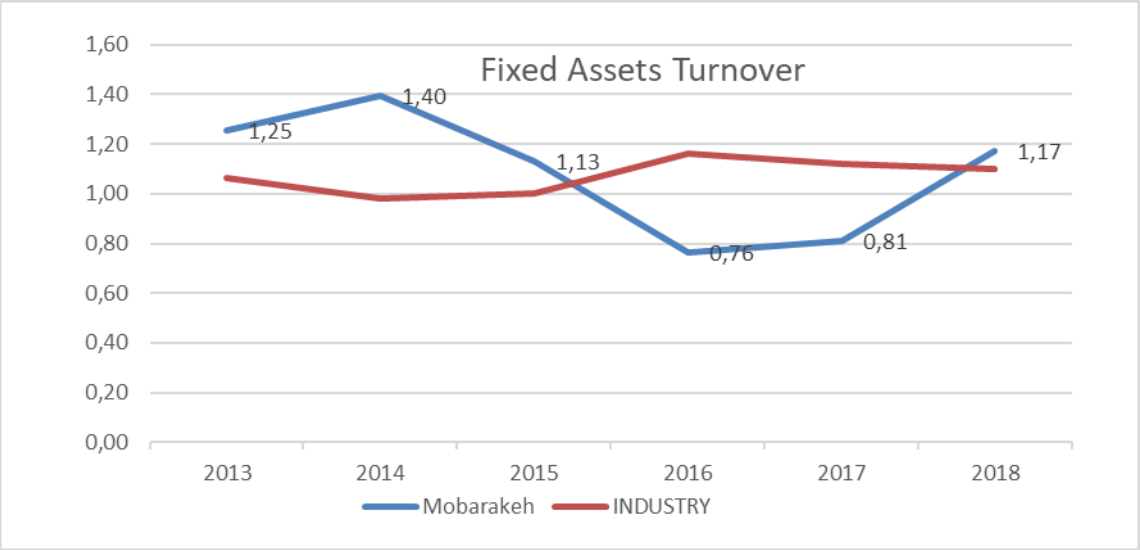
Graph 4-12: Comparison Total Assets Turnover



Source: Own calculation

As Graph 4-12 shows, the total asset turnover ratio has been better than the industry average over the rest of the year, compared to the industry average of 2016 and 2017, and sales changes have been the main reason. In 2017 and 2018, this ratio has grown significantly and was able to rise again in 2018 above the industry average. The reason for the increasimg in sales is due to the increasing in dollar rate, and given that the industry exports a significant portion of its products, it has been able to benefit from the increase in sales rates due to currency exchange, especially in 2018.

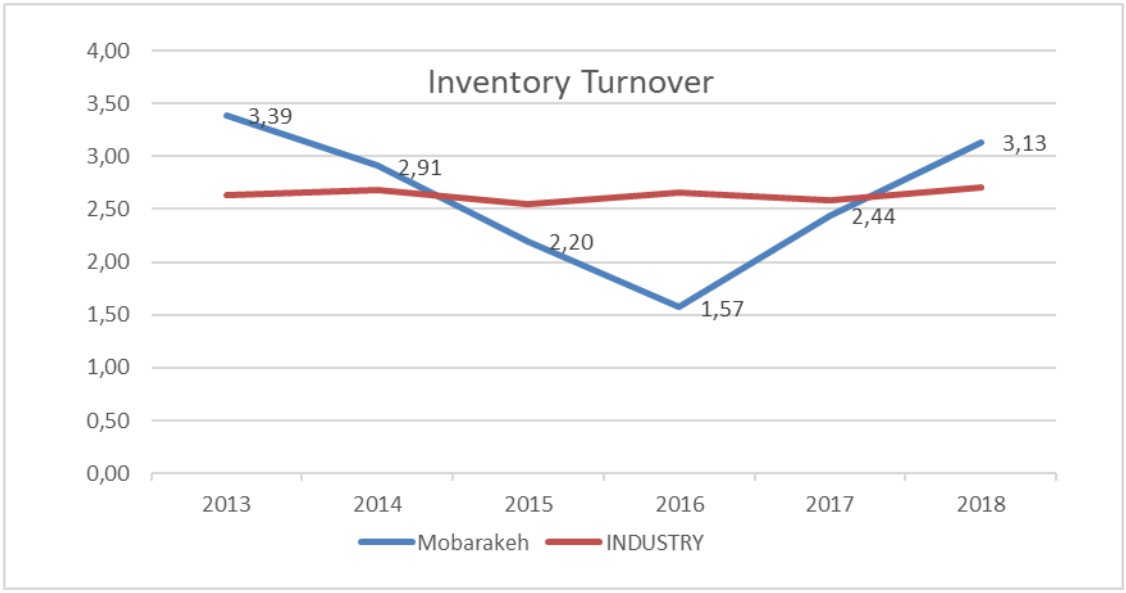
Graph 4-13: Comparison Fixed Assets Turnover



Source: Own calculation

As Graph 4-13 shows, the ratio of fixed asset turnover compared to the industry average, except for 2016 and 2017, has been better than the industry average performance in other years. The reason for these changes and fluctuations is the company's sales fluctuations. As mentioned in the previous graph, one of reasons for increasing in the company's sales in the last years, especially in 2018, was the increasing in the exchange rate, and the same reasons that were expressed in Graph 4-12 are also true for this ratio.

Graph 4-14: Comparison Inventory Turnover

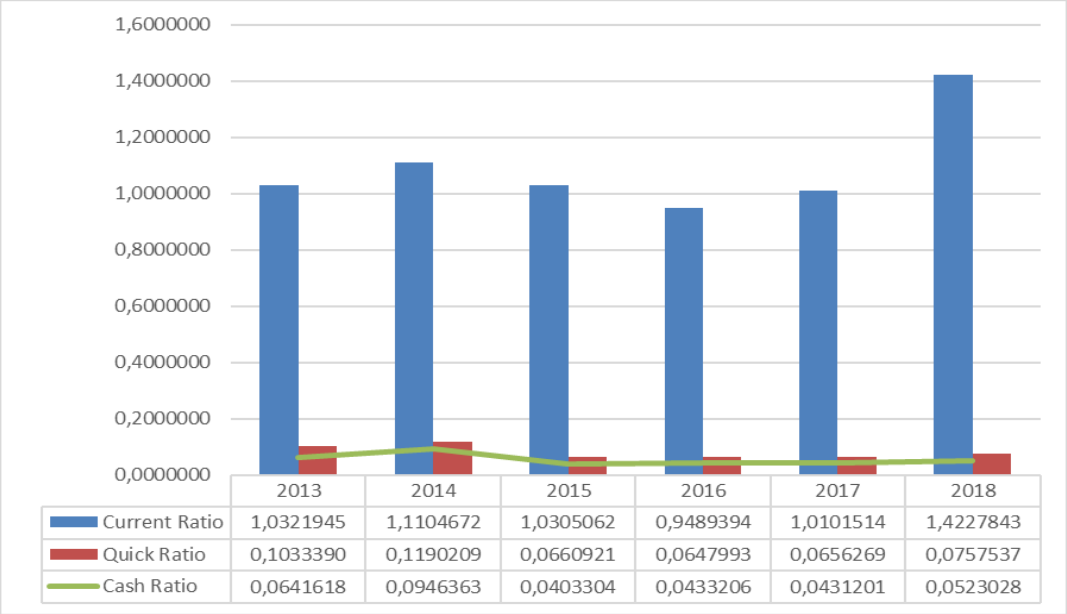


Source: Own calculation

In a similar manner as stated before, the variations in Graph 4-14 are due to variations in sales. The main reason for seeing increased sales in the latter years is the fall of the Iranian currency with respect to the US dollar. Another important point that can be seen from Graph 4-14 is the rapid changes in latter years, which is mainly due to a combination of increased sales and reduced inventory.

4.5 Liquidity Ratios

Graph 4-15: Liquidity Ratios



	2013	2014	2015	2016	2017	2018
Current Ratio	1,0321945	1,1104672	1,0305062	0,9489394	1,0101514	1,4227843
Quick Ratio	0,1033390	0,1190209	0,0660921	0,0647993	0,0656269	0,0757537
Cash Ratio	0,0641618	0,0946363	0,0403304	0,0433206	0,0431201	0,0523028

Source: Own calculation

Graph 4-15 shows an overview of the liquidity ratios and their trends. As the analysis of the liquidity ratios shows, the current asset ratio has increased from 1.03 to 1.4, which is indicative of a rising trend. Based on the vertical analysis, the increase in current asset is higher than current liability which is indicative of the company's ability in paying the current liabilities. On the other hand, the quick and moment ratios generally show a mild falling trend. The average quick and liquidity ratios are 8 and 5%, which is indicative of the company's ability in paying the liabilities. The higher this ratio, the better the company's liquidity will be.

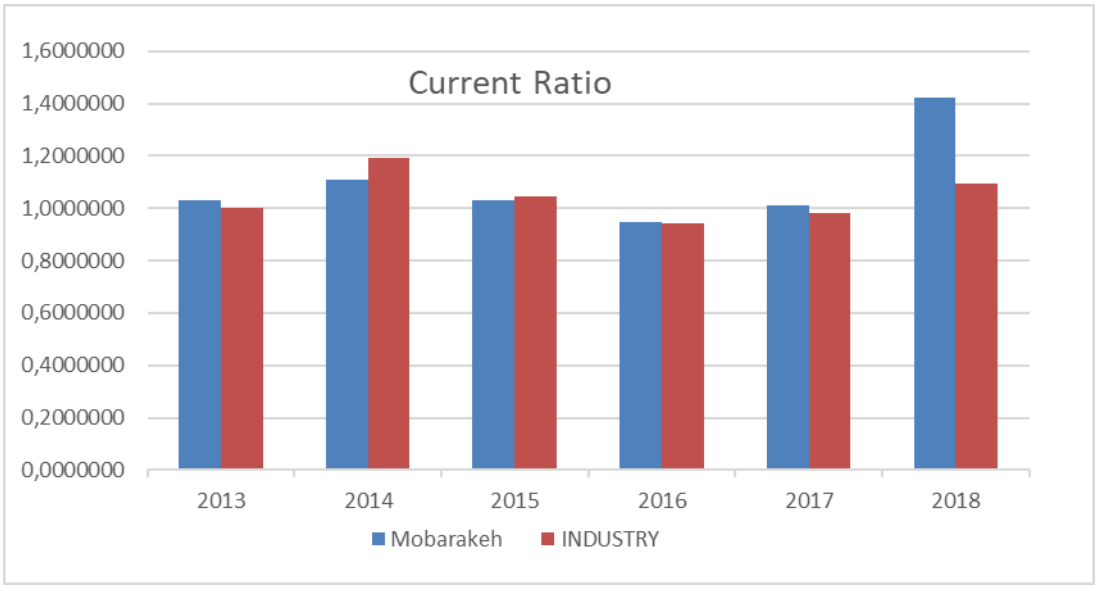
4.5.1 Comparison Liquidity Ratios

Graph 4-16: Comparison Current Ratio

As Graph 4-16 shows, during the 2017 period, and especially in 2018, this index was much higher and higher than the industry average performance. In the liquidity ratios section, what

is very clear and very important is that the company's current ratio has increased from 1.03 to 1.4, indicating that the company's working capital is net positive, and the main reason for this is the reduction in current debt. With the necessary measures, the company has been able to make a significant reduction in its accounts and payables.

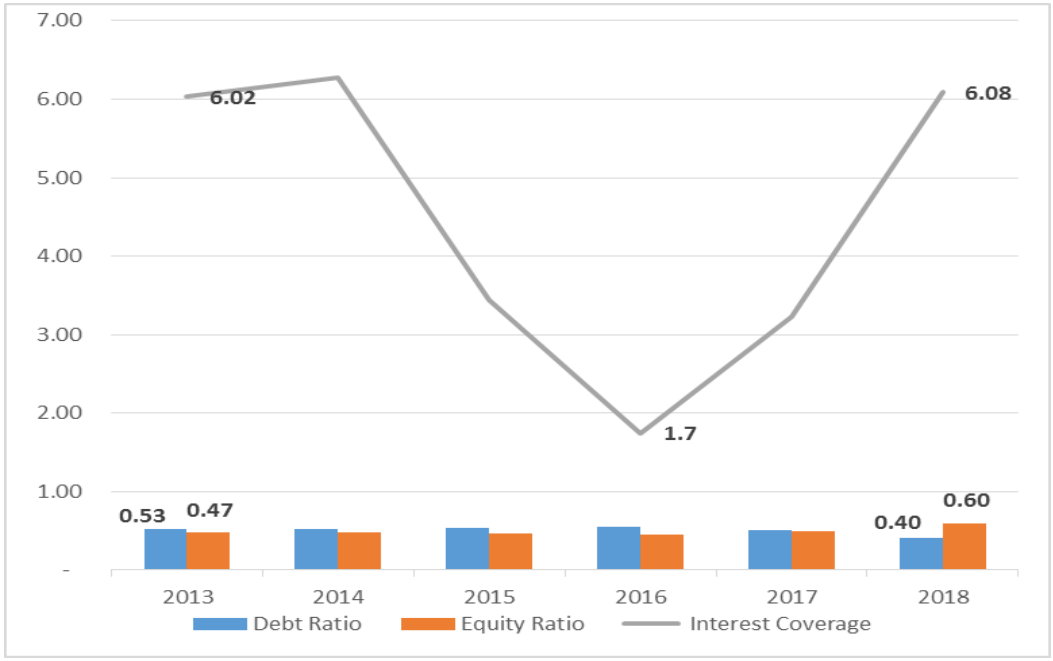
Graph 4-16: Comparison Current Ratio



Source: Own calculation

4.6 Leverage Ratios

Graph 4-17: Leverage Ratios



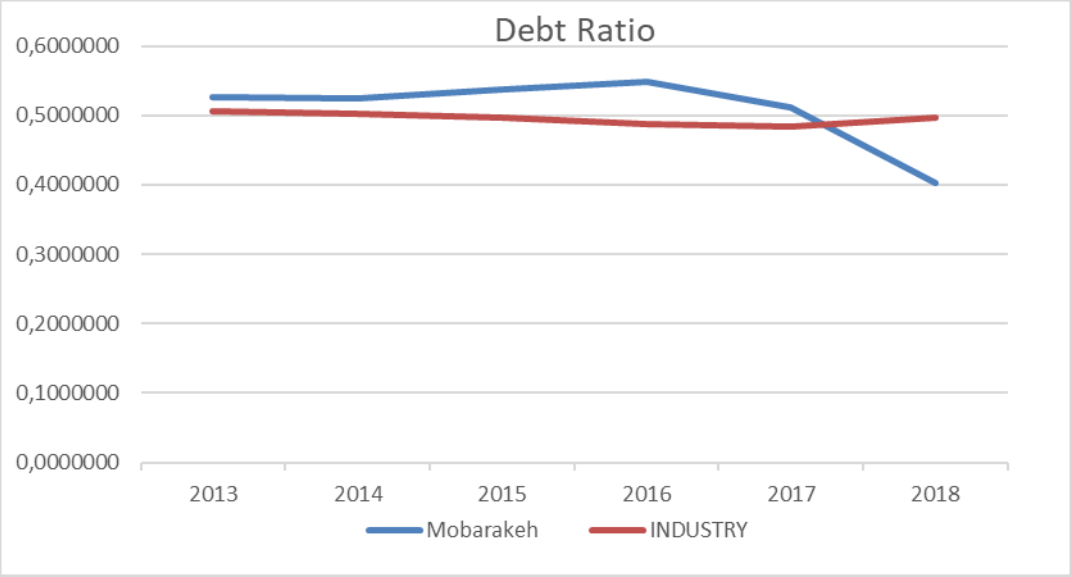
Source: Own calculation

The leverage ratios, also referred to as the investment ratio, reflective of the company's ability in fulfilling its mid and long-term obligations, and it investigates the company's funds for debt settlement and equity. Graph 4-17 shows an overview of the leverage ratios and their trends. As the analysis of the leverage ratios shows, the debt ratio is decreased from 0.53 to 0.4, which is indicative of a falling trend. The average debt ratio during the review has been 0.51, which indicates that 50% of the company's assets is debts. On the other hand, the ratio of equity to total assets which is indicative of the equity, has increased from 0.47 to 0.6, which show the change in the assets structure from debts to the equity, during the review period. On the other hand, another indicator for investigation of the debts ratio is the interest coverage ratio which is calculated by division of the profit before interest and the tax to financing costs. It shows that the company's profit covers several times the financing costs. This indicator has decreased from a 6 times coverage ratio in 2013 to 1.7 times in 2016 and after that, we can see an increase in this indicator.

This means that the operating profit of the company has sharply decreased in comparison to its financing costs and the financing costs coverage of the operating profit is extremely risky in 2016.

4.6.1 Comparison Leverage Ratios

Graph 4-18: Comparison Debt Ratio



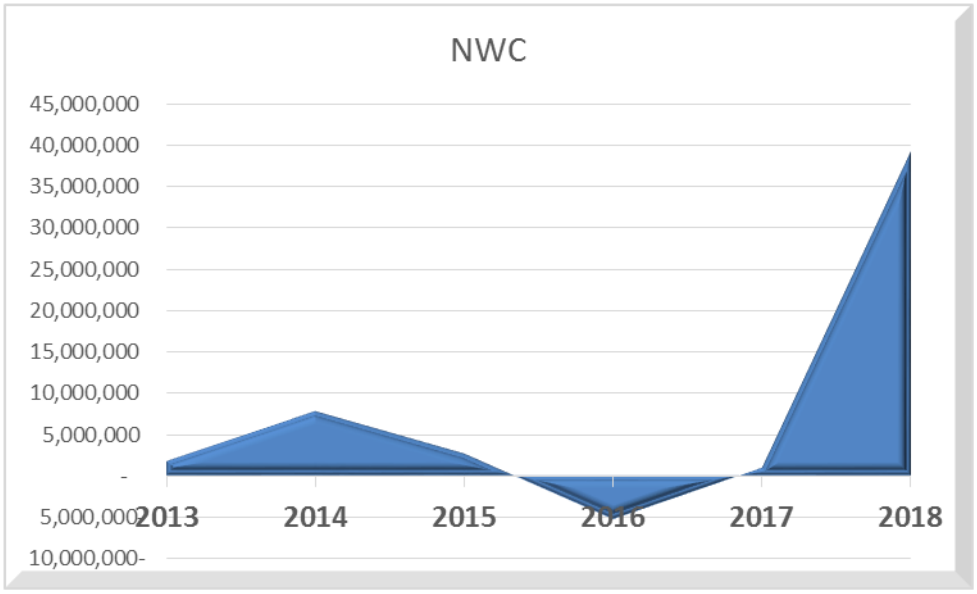
As Graph 4-18 shows, the ratio of debt to total assets compared to industry at the beginning of the study period was higher than the industry average, but in recent years this

ratio has decreased compared to industry. The obvious and very important point of this section is to change the structure of the company's capital, and it is quite clear that the company has come to the conclusion that the company's capital composition shifts from debt to equity. The reason is that the company has reached this conclusion. That the cost of financing through stocks has decreased compared to the cost of debt.

4.7 Net Working Capital

The net working capital is the real amount of the current assets or semi-current assets of a company. What supplies the company’s current costs and obligations?

Graph 4-19: Net Working Capital



Source: Own calculation

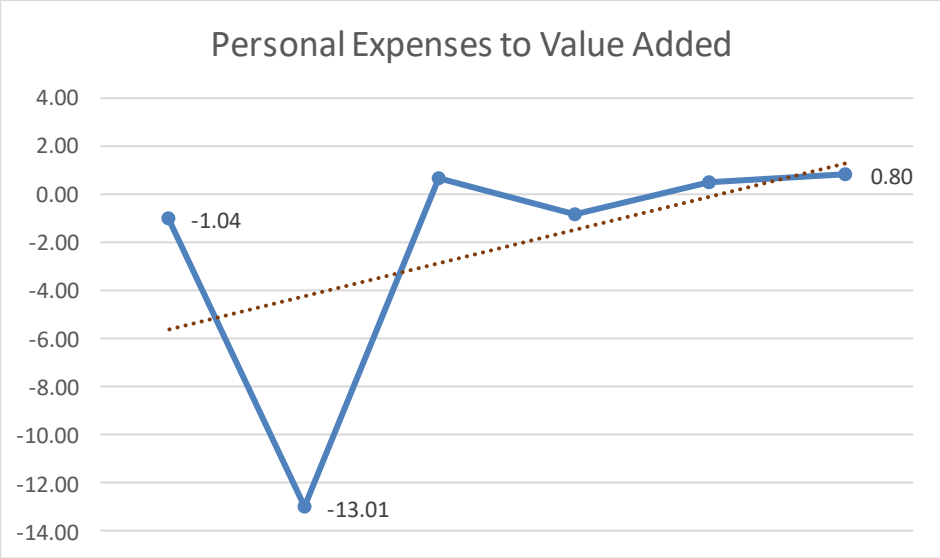
As seen in Graph 4-19, net working capital of the company has been analyzed. The NWC is like blood in the veins of the organization, and a key indicator for analysis of the companies and organizations. It has gone through an increase in 2013 and 2014, and after that period, it has been downward in the company. From 2016 onward, this ratio has gone through a drastic rise and as is seen in the vertical analysis of the balance sheet, the NWC has made up 50% of the total assets, and this trend has been constant during the review period. However, the current debt ratio has gone through a significant decrease which has ultimately led to the change from a negative NWC to a positive state.

4.8 Labor Productivity Indicators

One of the key subjects. Especially in the manufacturing companies, is the investigation of the labor productivity which is analyzed both in terms of costs and income.

4.8.1 Personal Expenses to Value Added

Graph 4-20: Personal Expenses to Value Added



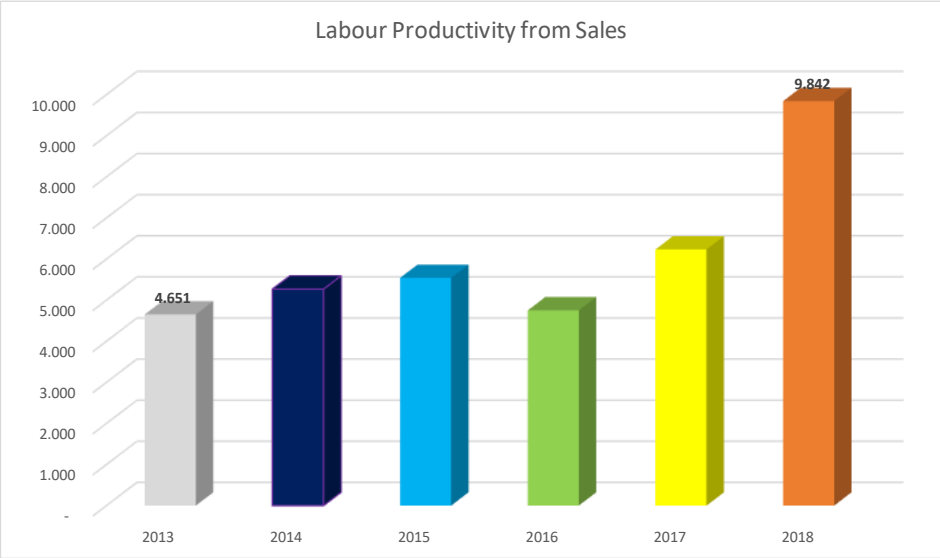
Source: Own calculation

One of the productivity indicators in human resources is the use of economic value added and it is calculated through the created economic value added divided to personal expenses. As seen in Graph 4-20, this indicator has been downward in 2013 and 2014, but has gone through a drastic increase in 2015, reaching 0.68, to finally reach 0.8, i.e. per each unit of expenses for the human resources, the economic value added has been increased by 0.8 unit.

Positive value-added was the most singnificant reason for the increase of this index in 2017 and 2018 in comparison to the previous year, and this value-added is resulted from the increase in returns on capital and the reduction of the reduction of the cost of capital in these two years.

4.8.2 Labor Productivity from Sales

Graph 4-21: Personal Expenses to Value Added



Source: Own calculation

The labor productivity from sales is actually the use of per capita sales to evaluate this indicator, i.e. how much sales are fulfilled per each employee. As seen in Graph 4-21, the per capita sales for Mobarakeh steel Company has increased from 4600 million Rial in 2013 to 9800 million Rial. However, this increase in per capita sales has happened due to the decrease in the number of employees and the rising trend of the company's income during the last years. The more than 3500 million Rial increase in the company's per capita income in 2018, compared to 2017, is one of the important points indicated in this graph. Compared to previous year, a 56% increase in 2018 sales and a decrease of about 163 employees are the main reasons for this dramatic increase in this year.

4.9 Economic Value Added

Table 4-7: Analysis of Economic Value Added

Year	2013	2014	2015	2016	2017	2018
Rd	0.20	0.18	0.18	0.18	0.12	0.12
Rf	0.22	0.22	0.20	0.18	0.15	0.15
Rm	0.47	1.08	-0.21	0.28	-0.04	0.25
Beta	2.69	0.61	0.79	1.31	1.88	1.85
Ri	0.89	0.74	-0.12	0.31	-0.20	0.33
WACC	0.53	0.45	0.04	0.24	0.04	0.25
R	0.37	0.44	0.28	0.09	0.19	0.38
VA	-8342268	-864079	20437518	-13640343	24823725	21247034

Source: Own calculation

The economic value added in the accounting is a criterion for measurement of the company's financial performance based on the wealth added, which is calculated by deducting the cost of capital from operating profit (after tax deduction). The economic value added is also known as the "economic profit". As the table 4-6 shows, in 2013 and 2014, the economic value added has been decreasing and in 2015 it has been increasing. It has become decreasing again in 2016, and finally, it has been rising again in 2017 and 2018. As is shown in above Graph, the debt cost is shown by variable Rd and the financing cost by stocks is shown by variable Ri, for calculation of which CAPM is used. The weighted average cost of equity capital has been lowest in 2015 and 2017 and the most important reason behind that is the negative stock market index and the consequent decrease in the cost of equity capital.

4.10 Market Ratio

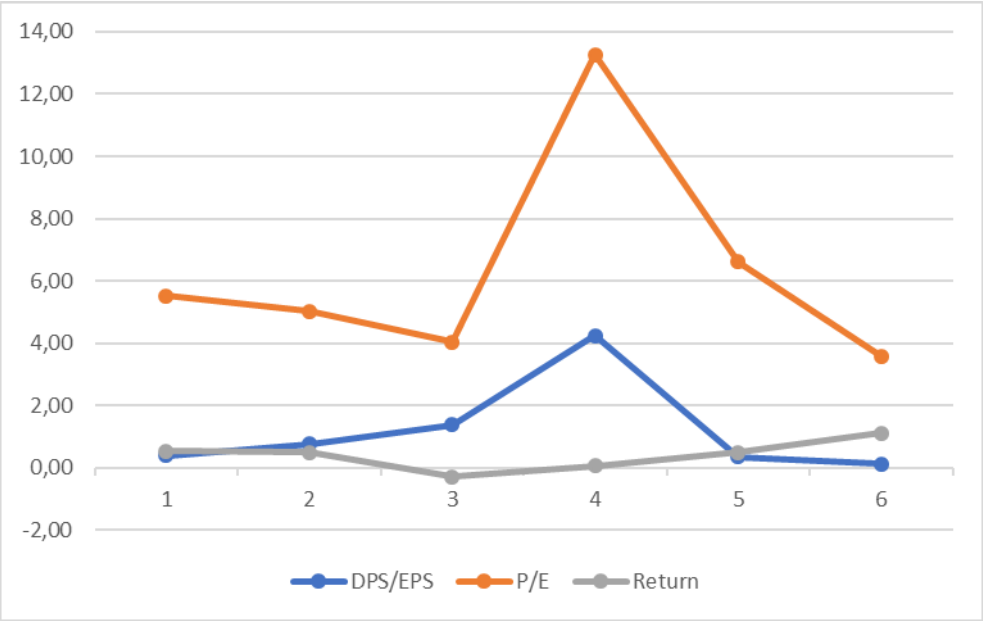
Table 4-8: Analysis of Market Ratio

Year	2013	2014	2015	2016	2017	2018
DPS	300	650	660	450	100	100
EPS	777	858	475	106	277	804
DPS/EPS	0.39	0.76	1.39	4.26	0.36	0.12
P/E	5.53	5.04	4.04	13.28	6.62	3.58
Return	0.55	0.50	0.29-	0.06	0.49	1.11

Source: Own calculation

The market ratios are used to investigate the indicators of the stock market as well as the stock return in the review period. As the results of the table 4-7 shows, the stock return has been upward in 2013 and 2014, but it has been downward in 2015. In 2016, it has been partially positive, ad in 2017 and 2018, 49% and 1.11% returns have been realized for the stocks. The profitability of each stock has been halved in 2015 compared to 2014, and as a result, the stock return was decreased from 50% to 29%. What is important of note is that the company's profitability per stock in 2018 is 2.9 times higher than in 2017 and the stock return has increased 2.26 times.

Graph 4-22: Market Ratio



Source: Own calculation

As seen in Graph 4-22, an overview of the indicator's ratios and other important ratios in the market are shown. In this Graph, the P/E and DPS/EPS trends follow a similar pattern. From evaluation of the P/E, the management policy for sharing the profit can be understood. When the index is high, the ratio of dividend to the profitability per share is expected to be increased. The relationship between the return and P/E ratio is not a fixed one. For example, it has been in the lowest level in 2015 and 2018, however in 2015, the company has experienced a -29% return while it has reached a 111% return in 2018.

4.11 Bankruptcy Models:

Bankruptcy is an insolvency condition in which the corporation or the individual can not repay the balance of the debt to the creditors. Predicting bankruptcy is of concern to the company's different stakeholders as well as to society as a whole.

The companies' bankruptcy leads to huge loss for the investors, creditors, managers, workers, suppliers, and customers. If one understands the reason behind the collapse of the companies, he/she would save it from inevitable death. Therefore, prediction of the companies' bankruptcy is the prerequisite to prevent it. In the present thesis, the Altman Z-score, which locally used for the manufacturing companies in Iran, has been used.

$Z'=0.717x_1+0.847x_2+3.107x_3+0.42x_4+0.998x_5$

In which:

Z': is the overall index

X_1: is the ratio of asset turnover to total assets

X_2: is the ratio of retained earnings to total assets

X_3: is the ratio of operating profit to total assets

X_4: The ratio of the book value of the company's shares to the total book value of the debt

X_5: is the ratio of sales to total assets

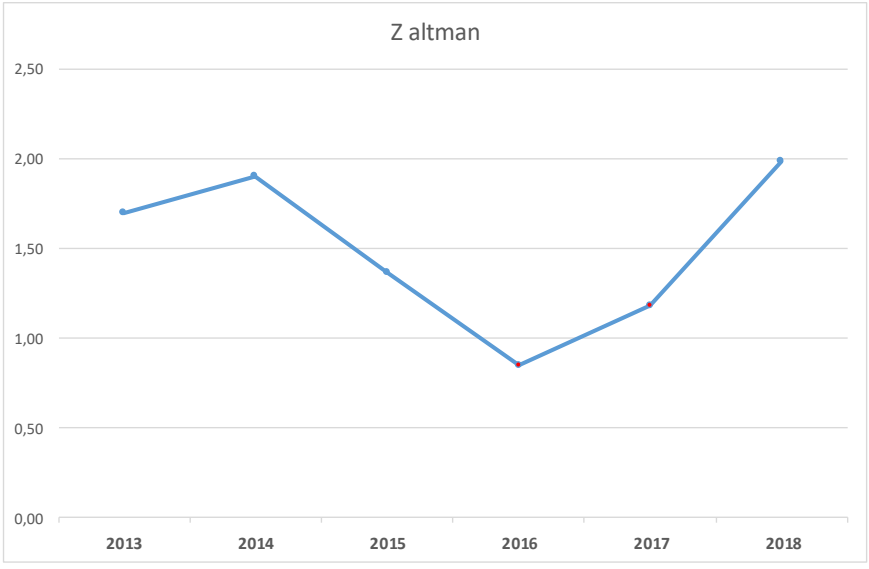
In this model, the lower the Z', the higher the company's financial problems, as companies with Z' score higher than 2.9 are categorized as healthy companies and those with Z' score lower than 1.23 are categorized as bankrupt companies. The Z' range between 1.23 and 2.9 is considered as the doubt area and must be interpreted with caution.

Table 4-9: Analysis of Z Altman

Year	2013	2014	2015	2016	2017	2018
X1	0.02	0.05	0.01	-0.03	0.00	0.15
X2	0.22	0.21	0.16	0.05	0.12	0.29
X3	0.22	0.27	0.15	0.08	0.13	0.25
X4	0.47	0.48	0.46	0.45	0.49	0.60
X5	0.62	0.65	0.56	0.39	0.46	0.59
Z Altman	1.70	1.90	1.37	0.85	1.18	1.98

Source: Own calculation

Graph 4-23: Z Altman



Source: Own calculation

As the results show, the Altman Z-score has been in the bankruptcy range in 2016 and 2017, and it has been in the gray or doubt range in other years. It has increased from 2013 to 2014 and has been falling from 2014 to 2016. In 2017, it has been rising again, to reach its highest in 2018, during the review period. What should be noted about the bankruptcy index in 2018 is that all the components of the bankruptcy indicator have been maximized in this year.

4.12 Firm Risk Analysis:

The risk analysis is the study of the fundamental risk in a given cycle of operation, which denotes the volatility of the forecasts of asset flows, the variance in stock return, the probability of project success or failure, which potential future economic states. The risk analyzers typically collaborate with the experts on prediction to mitigate the unpredicted negative future results.

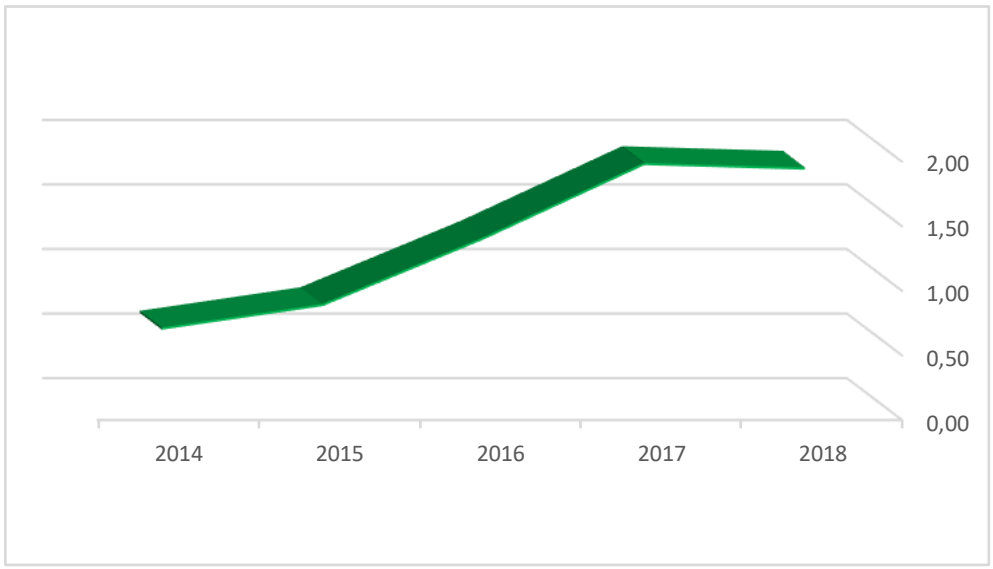
4.12.1 Systematic Risk

Table 4-10: Systematic Risk

Year	2014	2015	2016	2017	2018
Systematic Risk	0.61	0.79	1.31	1.88	1.85

Source: Own calculation

Graph 4-24: Systematic Risk



Source: Own calculation

A criterion which measures the ratio of the sensitivity of a stock return to the whole market, is used to measure the systematic risk and it is called Capital Asset Pricing Model Beta (CAPM Beta). As shown in Graph 4-24, the trend of the systematic risk, which is also called the market risk, is rising and in the last years of the study, this trend has been constant. The diffusion coefficient in the last two years has been almost 1.9, which indicates that any market changes have been applied on the Mobarakeh Steel Company's stocks with a 1.9 times coefficient.

The main reason for the increaseing in the company's systematic risk is the company's strong dependence on exports, as well as exchange rate changes, and increasing the US sanctions against Iran, as well as the increase in currency fluctuations, has increased this risk in the company.

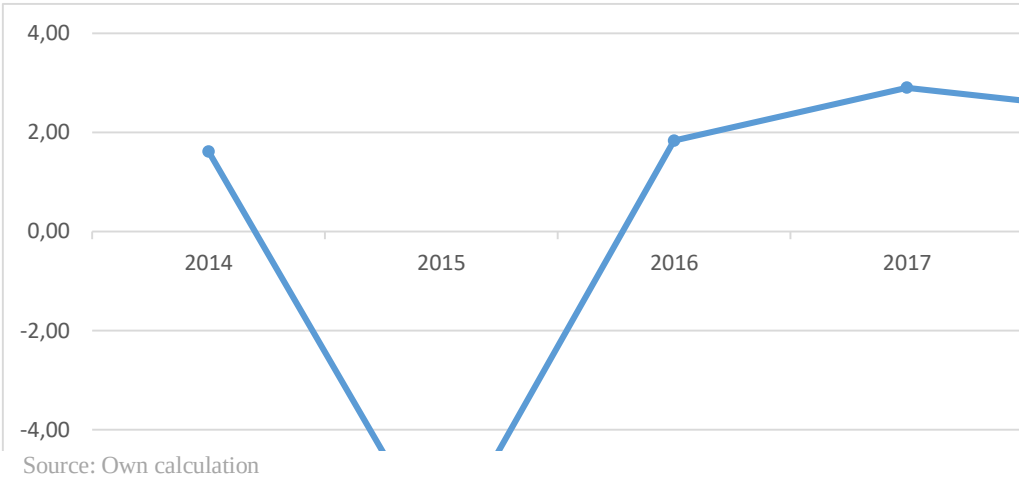
4.12.2 Business Risk

Table 4-11: Business Risk

	2014	2015	2016	2017	2018
Business Risk	1.61	-6.48	1.83	2.90	2.38
Financial risk	5.86	0.71	0.55	0.53	0.70

Source: Own calculation

Graph 4-25: Business Risk



Source: Own calculation

The operating leverage has been used to measure the business risk. The operating leverage shows the relationship between the sales and earnings before tax and interest deduction, as to evaluate the change in sales create how much changes in earnings before tax

and interest deduction. As the changes in the operating leverage results show, the operating risk of the company during the review has had a rising trend and in 2017, it has reached its highest, i.e. 1% of change in the company's sales has led to 2.9% of change in the operating profit. In 2015, the operating risk of the company has been negative because the point of sale of the company has been lower than the operating point-to-point sale number.

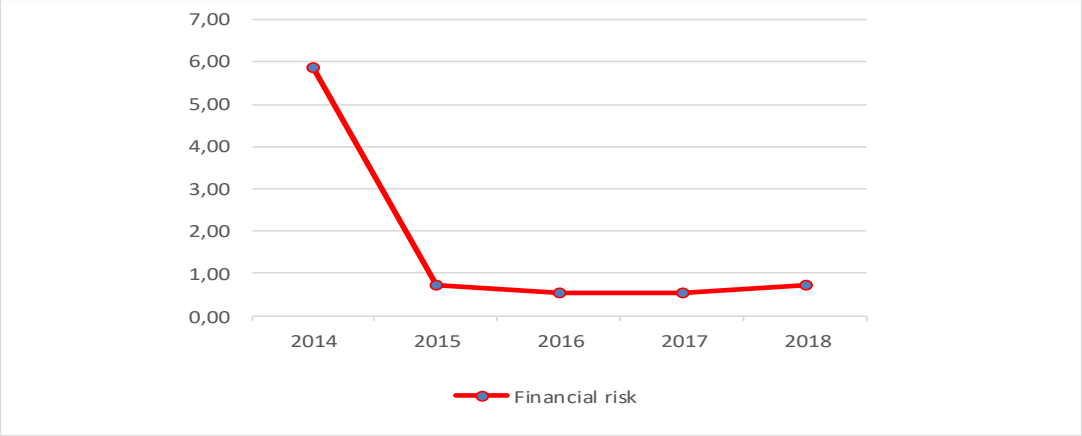
4.12.3 Financial risk

Table 4-12: Financial Risk

	2014	2015	2016	2017	2018
Financial risk	5.86	0.71	0.55	0.53	0.70

Source: Own calculation

Graph 4-26: Financial Risk



Source: Own calculation

For measurement of the financial risk, the financial leverage is used. The capital structure is indicative of each of them in the company's financial resources. The higher the debts in the company's capital structure, the more leveraged the company's structure will be, i.e. the financial leverage is high. As a result, the company's risk is also increased. The financial leverage is sensitivity of each stock's profit change to the earnings before tax and interest deduction. Or in other words, it is the percentage of each stock's profit to one percent of change in earnings before tax and interest deduction. As the results indicate, the company's financial risk has been falling and except 2014, in which the financial risk has been high, it has had a downward trend in the next years, ranging from 0.53 to 0.71. Reduction in the company's financial risk is also quite obvious, and this risk is highly dependent on the amount

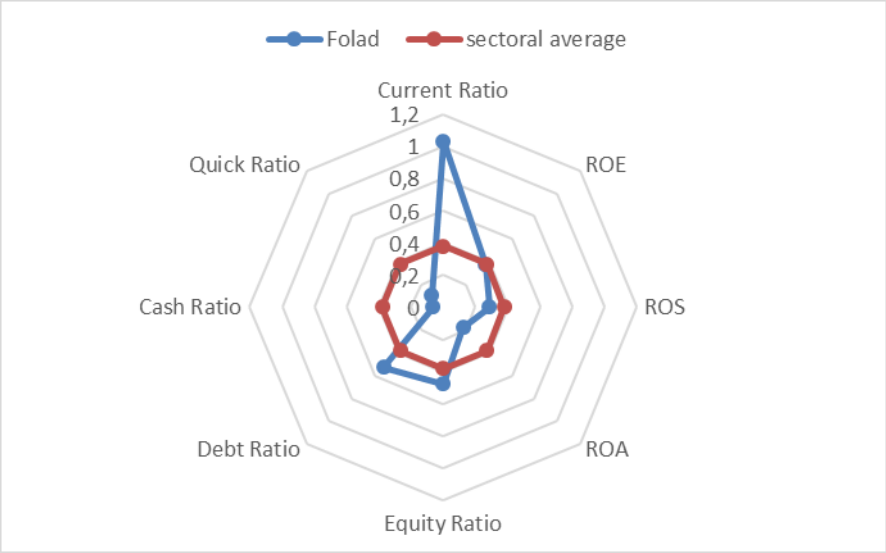
of debt in the company's capital structure. As mentioned, the debt in the capital structure of the company has decreased significantly during the research period.

4.13 Spider Graph

In This sector financial situation of Mobarakeh company are compared with Sectoral average between 2013 till 2018.

4.13.1 Year 2013

Graph 4-27: Spider Graph - Year 2013

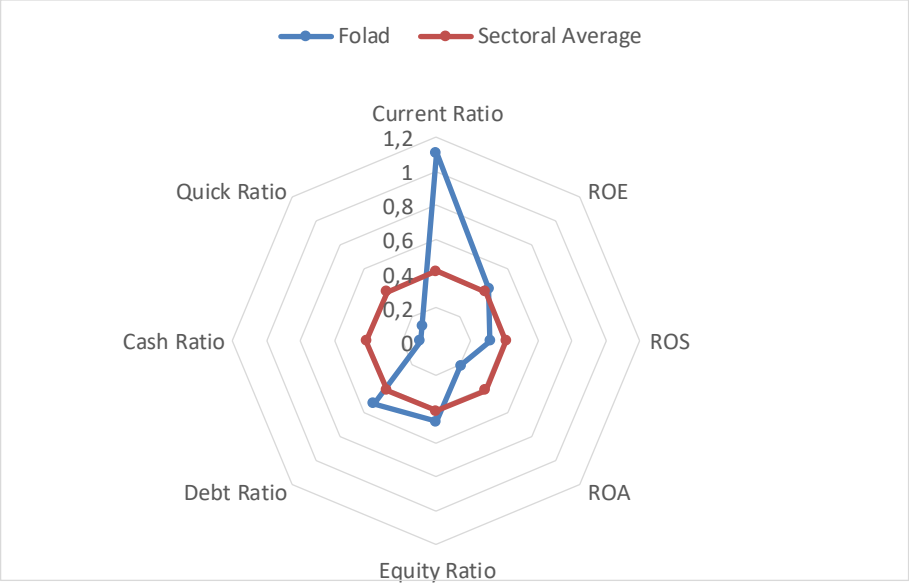


Source: Own calculation

As the results indicate, the debt ratios, equity ratios, and current ratios are above the average value of these ratios, and the liquidity ratio is on the edge of average zone. The quick, cash, ROA, and ROS are also lower average in 2013.

4.13.2 Year 2014

Graph 4-28: Spider Graph - Year 2014

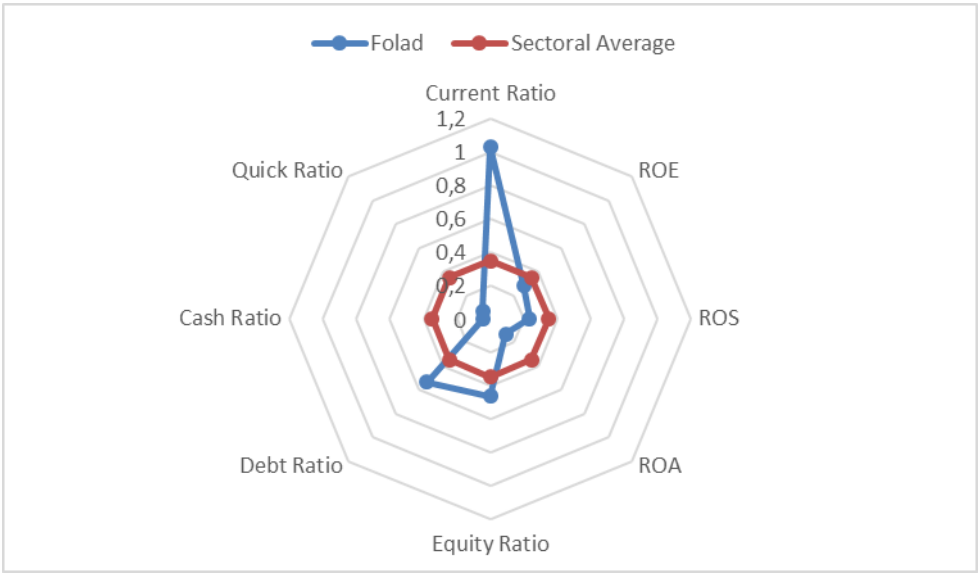


Source: Own calculation

Investigation of this graph and comparing it with the previous year and the average values indicate that changes in activity, debt, and profitability ratios have not been significant compared to previous years, and there is a relative match between 2013 and 2014's graphs. The only tangible change is the change in ROE.

4.13.3 Year 2015

Graph 4-29: Spider Graph - Year 2015

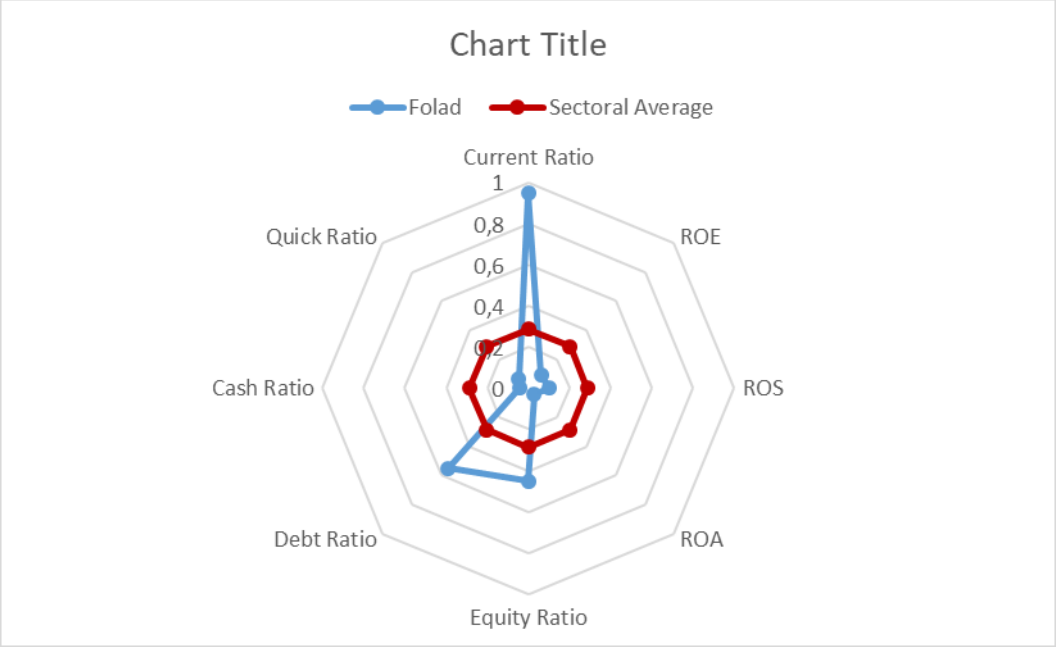


Source: Own calculation

What we search for in the spider graph of 2016 is comparing it with the sectoral average and the previous year's graph. What is clear is that the decrease in profitability ratios has occurred for all three items as the ROS, ROA, and ROE.

4.13.4 Year 2016

Graph 4-30: Spider Graph - Year 2016

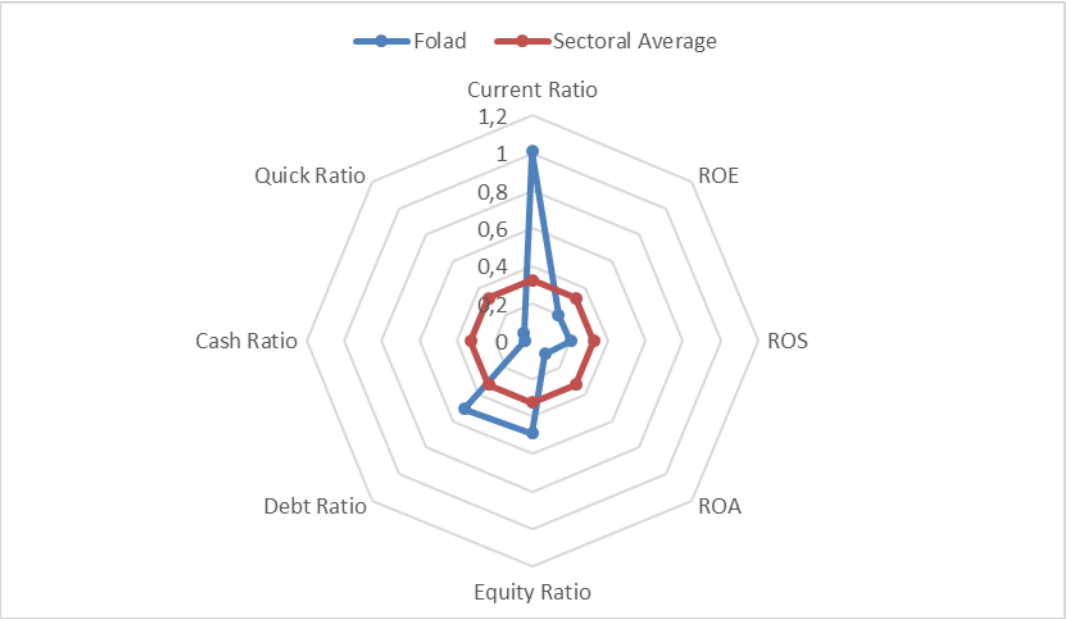


Source: Own calculation

As is seen, in 2016, the profitability ratios have been clearly decreased for ROS, ROA, and ROE, compared to the previous year. It indicates that the company has had problem in profitability, and it must think about a remedy to strengthen this section.

4.13.5 Year 2017

Graph 4-31: Spider Graph - Year 2017

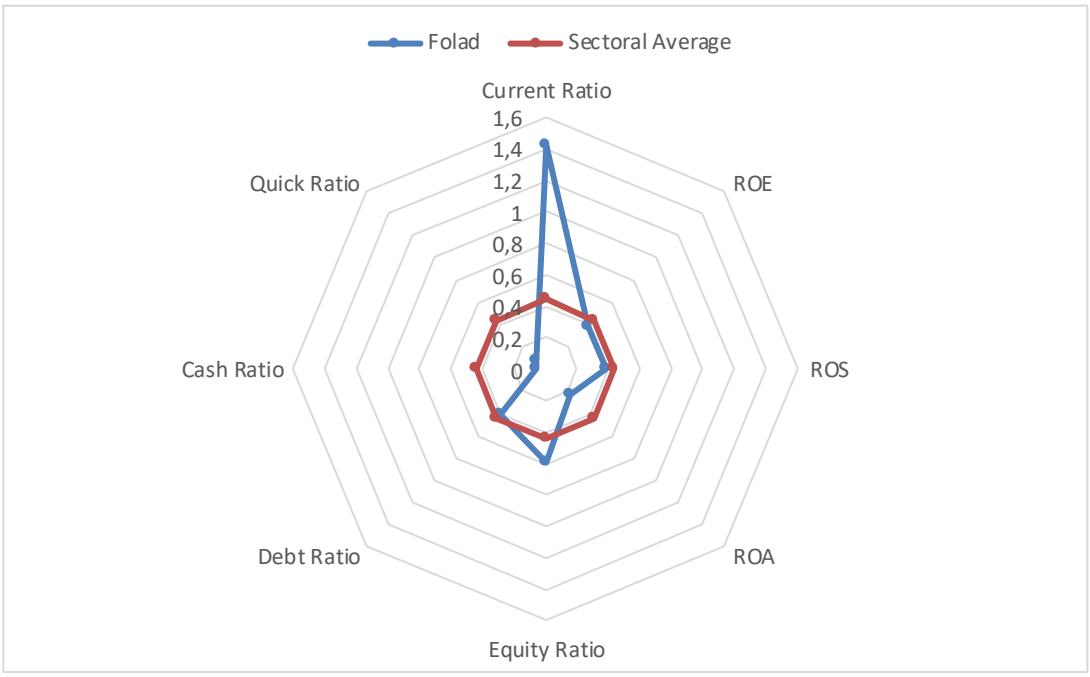


Source: Own calculation

What is clear in 2017, compared to the sectoral average and the previous year, is the rising movement of the profitability indicators as well as the changes in capital structure. The company's capital has also moved from debts to the equity, which is notable.

4.13.6 Year 2018

Graph 4-32: Spider Graph - Year 2018



Source: Own calculation

5 Discussion and Recommendation

In this chapter, we would deal with the important points mentioned in chapter 4, and some suggestions would be provided in some sections.

As seen in chapter 4, first, we dealt with the vertical and horizontal analysis of the balance sheet. One of the obvious and very important points in this section was the change in the company's assets structure and quite clearly, the company has concluded to direct the assets from the debts to the stockholders' equity. This point is also clear in the leverage ratio analysis, and graph 4-13 shows this change completely. Our computations in Table 4-6 indicate that the cost of equity financing has been significantly decreased compared to the debts, and this strategy has been adopted by the company quite timely and precisely. The company must try to choose the best assets structure by precisely monitoring the debts and equity financing costs, which finally leads to an increase in the company's value in the long term.

Next, we dealt with the vertical and horizontal analysis of the profit and loss statement. As the sale and profitability trend shows, the company's activities can be divided into two periods: 2013 to 2016, and 2017 to 2018. From 2013 to 2016, the sale's trend has been falling and on the other hand, we observed the increase in the price-to-sales ratio, while in the 2017-2018 period, the trend has been quite opposite and we have seen the increase in the sales and a decrease in the price-to-sales ratio. The analysis of the profitability ratios in chapter 4-5 is also indicative of this fact, and regarding the fact that a great portion of this company's production has been the export sales and the increase in the currency rates has been beneficial for these industries. A great portion of the company's sales values has been due to the increase in currency rates and a small portion has been due to the low volume of sales. On the other hand, with the decrease in the overhead expenses, the company has managed to significantly decrease the prime costs and for the company to succeed, it must maintain this trend for years to come.

In chapter 4.3.4, the DuPont analysis indicated that for increasing the return on assets, the company must both create a suitable profit margin for its sales and increase its asset turnover ratio. The very important points for all the businesses are the same two points and the company, for surviving in the competition, must pay attention to both its sales profit margin and the assets turnover ratio.

The company's activity ratios can be also divided into two periods just like the periods used for profitability. Until 2016, the trends are indicative of the decrease in the efficiency and activity ratios of the company, while after that, these two indicators have been rising which is mainly due to the sales volatility. The reason behind the increase in sales has been also the rise in the currency rates in the country. The companies experience high sales jumps due to the change in the currency rates. The Dollar's price has increased from about 40000 Rial to an average of 140000 Rial in just one year. Such incidence may be strange for developed, or even developing countries, but it has happened in Iran and the country has experienced a 250% depreciation of the currency.

In terms of liquidity ratios, what is so clear and important is that the company has experienced a rise from 1.03 to 1.4 in the current ratio after a falling period, and as a result, it is indicative of a positive net working capital of the company which is mainly due to the decrease in the current liabilities. The company has managed to significantly decrease its liabilities by adopting necessary measures.

One of the most important computations done in chapter 4 was economic value-added and as indicated in 4-6, the company has had a stable positive trend of economic value added during 2017 and 2018, which is one of the important points for the company. It can be due to the increase in return on assets and the decrease in financing costs. The two key points in the administration of any company are the same two points mentioned, i.e. the company's assets structure must be chosen in a way that the financing expenses are decreased. However, in decreasing the financing expenses, the risk of bankruptcy must be also considered. Besides, the company must invest in the

projects with the highest return, which is quite clear in the last two years' activities of the company.

Another subject addressed for this company was the analysis of the company's risks, and what was so important here was the significant increase in the systematic risks of the company. The systematic risk will be always associated with the stock market, since it is the risk dominating the major economy of the market, such as the war, the political-economic sanctions, the interest rate, inflation, etc. The main reason behind the increase in the systematic risk is the high dependence on the exports as well as the changes in currency rates. The intensification of the United States' sanctions against Iran and the increase in the currency fluctuations have increased this risk. On the other hand, the decrease in the company's economic risk was quite obvious and it highly depends on the assets structure. As was mentioned, the liabilities have been significantly decreased in the company's assets structure during the research period.

Another point assessed in the current study was the bankruptcy risk which was investigated by the use of Altman Z-Score modified based on the Iranian economic structure. What is obvious is that the company has moved from the companies close to bankruptcy to the gray zone companies, and the reason behind that is the improvement in the financial status of the company during 2017 and 2018.

6 Conclusion

One of the most important methods for assessment of a company's status is the analysis of its financial statements to investigate the company's weak and strong points. Obviously, these assessments would lead to some suggestions for the revision of the company's financial trends.

As a general conclusion of the company's status, the Steel Company's financial management subject is divided into three categories: 1) the proper strategy for the assets structure, 2) the working capital strategy, and 3) proper return on investment.

As for the first strategy, the company has managed to successfully direct the structure of its assets to the decrease in liabilities and increase in the stockholders' equity, based on the expenses of financing through the stock and liabilities in Iran. In terms of the working capital, our evaluation shows that the company has had two completely different periods; one from 2013 to 2016 and the other from 2017 to 2018. In the first period, the company had done poorly in this regard and most of these years, the net working capital has been negative, however in 2017, and especially in 2018, this trend has been quite optimal and it is obvious that the company, by decreasing the current liabilities, has obtained the highest net working capital during these years. As for the third strategy, which is the return on investment, similar to the working capital, the company has done poorly until 2016 in terms of the efficiency and productivity, based on the profitability ratios, however, in 2017 and 2018, the trend has been completely changed and the company has registered a rising trend in many of the profitability ratios, activities, and the productivity ratios.

Two very important points in the improvement of the company's status during the last years are the increase in sales in the last two years which is more due to the increase in currency rate, and since the company exports most of its productions, the sales value has been increased, and this rise has nothing to do with the management strategy in marketing, but it is due to the major economic structure of the country. The second reason behind the improvement in financial performance is the decrease in the ratio of prime cost to the price, which is due to the decrease in the overhead expenses. This area is completely related to the desired performance of the management and the decreasing and controlling expenses.

Regarding the investigation of the financial statements and analysis of the financial ratios trend as well as other calculations of the company, one cannot speak for sure about the stability of the positive trend of company's financial ratios in the future, because one of the reasons behind the increase in the company's sales during the recent years, which has definitely influenced other financial ratios, is the sales increase and this rise has been more due to the change in currency rates and not the sales

volume. The stability of the company's trend can be realized if the global prices of steel are rising and the country again faces an enormous increase in currency rates.

As a conclusion, it is suggested to the Steel Company to more focus on the improvement of the assets structure, decrease and manage the expenses, especially the overhead expenses and financial costs, and adopt appropriate strategies for the working capital, especially at the times that currency rates and global prices are stable and falling.

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8 Appendices

Annex 1: Balance Sheet – Assets

		2013	2014	2015	2016	2017	2018
TA	Total assets	113,768,199	148,673,339	182,051,184	198,479,349	217,913,409	266,463,247
CA	Current assets	57,371,673	79,023,570	91,812,137	96,164,157	93,040,497	131,837,504
CA1	Short-term financial assets	5,743,811	8,469,818	5,888,421	6,566,670	6,044,595	7,019,458
CA11	Cash	3,566,255	6,734,553	3,593,201	4,390,050	3,971,595	4,846,458
CA12	Short-term investments	2,177,556	1,735,265	2,295,220	2,176,620	2,073,000	2,173,000
CA2	receivables & prepayment	30,778,870	37,086,813	39,493,705	39,790,127	45,515,986	74,273,224
CA21	Accounts and business receivables	12,815,813	16,647,411	29,836,851	36,591,957	32,188,972	42,656,601
CA22	Long-term receivables	-	-	1,886,987	-	10,554,290	6,952,133
CA23	other receivables	9,554,297	9,572,356	-	-	-	19,563,924
CA24	prepayment	8,408,760	10,867,046	7,769,867	3,198,170	2,772,724	5,100,566
CA3	Inventory	20,848,992	33,466,939	46,430,011	49,807,360	41,479,916	50,544,822
CA31	Goods	13,242,880	16,951,741	29,217,562	26,645,910	25,851,819	34,592,434
CA32	other inventory	7,606,112	16,515,198	17,212,449	23,161,450	15,628,097	15,952,388
FA	Fixed assets	56,396,526	69,649,769	90,239,047	102,315,192	124,872,912	134,625,743
FA1	long term investments	19,886,940	27,231,176	35,075,184	38,202,847	41,293,271	68,999,592
FA2	Intangible fixed assets	2,061,887	2,162,228	3,373,209	4,890,202	5,272,181	1,799,432
FA21	Intangible fixed assets under construction	473,565	467,653	468,209	945,920	1,784,180	1,799,432
FA22	Software	1,588,322	1,694,575	2,905,000	3,944,282	3,488,001	-
FA3	Tangible fixed assets	34,447,699	40,256,365	51,790,654	59,222,143	78,307,460	63,826,719
FA31	Property of machinery and equipment	34,447,699	40,256,365	49,903,667	59,222,143	67,753,170	56,874,586
FA32	Tangible fixed assets under construction	-	-	1,886,987	-	10,554,290	6,952,133

Annex 2: Balance Sheet – Liabilities

		2013	2014	2015	2016	2017	2018
TL	Total liabilities & Equity	113,768,199	148,673,339	182,051,184	198,479,349	217,913,409	266,463,247
CL	Current liabilities	55,582,229	71,162,450	89,094,208	101,338,561	92,105,495	92,661,627
CL1	Short-term payables	29,732,816	34,141,318	42,837,088	43,880,424	33,640,598	32,793,282
CL11	Business and documents payable	4,141,310	7,122,384	17,519,106	21,001,132	20,321,118	10,506,604
CL12	other payable	6,485,920	5,608,469	-	-	-	7,579,148
CL13	Deferred payables	4,856,088	3,012,340	5,859,689	6,360,930	3,227,983	2,041,378
CL14	Due from state - tax liabilities and subsidies	4,559,846	4,812,533	3,991,074	3,347,306	3,158,218	5,745,619
CL15	Payables to social securities and health insurance	9,689,652	13,585,592	15,467,219	13,171,056	6,933,279	6,920,533
CL2	Bank loans and financial accommodations	25,849,413	37,021,132	46,257,120	57,458,137	58,464,897	59,868,345
CL21	Short-term bank loans	25,849,413	37,021,132	46,257,120	57,458,137	58,464,897	59,868,345
LA	Long-term liabilities	4,231,916	6,674,128	8,791,416	7,543,512	19,190,298	14,367,222
LA1	Long-term accounts and payables	568,132	1,100,788	-	-	-	-
LA2	Other payables	3,663,784	5,573,340	8,791,416	7,543,512	19,190,298	14,367,222
E	Equity	53,954,054	70,836,761	84,165,560	89,597,276	106,617,616	159,434,398
E1	Registered capital	25,800,000	36,000,000	50,000,000	50,000,000	75,000,000	75,000,000
E2	Retained earnings from previous years	25,127,792	30,790,498	28,931,261	9,151,014	25,132,837	76,488,136
E3	Reserve funds	3,026,262	4,046,263	5,234,299	30,446,262	6,484,779	7,946,262
E31	Legal reserve fund	2,580,000	3,600,000	4,788,037	5,000,000	6,038,517	7,500,000
E32	Reserve design and development	446,262	446,263	446,262	446,262	446,262	-
E33	other Reserve	-	-	-	25,000,000	-	446,262

Annex 3: Profit and Loss Statement

	2013	2014	2015	2016	2017	2018
Total Revenue	70,683,483	97,278,523	101,999,244	78,166,967	101,083,653	158,021,839
Expenses on sold goods	43,298,699	56,201,638	69,696,950	56,476,516	66,160,253	85,261,468
Gross profit	27,384,784	41,076,885	32,302,294	21,690,451	34,923,400	72,760,371
Sales, General and administrative	3,263,853	5,021,132	5,849,147	6,255,342	6,693,722	6,870,013
Other operating expenses	558,640	3,609,598	732,135	106,199	525,201	1,403,184
Operating profit	24,679,571	39,665,351	27,185,282	15,541,308	28,754,879	67,293,542
Depreciation expense	1,399,677	2,178,494	2,456,478	2,499,975	3,133,343	
Interest Expense	4,093,695	6,319,767	7,910,993	8,921,334	8,923,398	11,052,537
Other income (expense)	2,635,496	1,918,659	7,562,256	2,141,446	3,085,080	11,481,484
Earning before tax	23,221,372	35,264,243	26,836,545	8,761,420	22,916,561	67,722,489
Tax	3,164,581	4,376,767	3,075,814	829,704	2,146,221	7,405,707
Net income	20,056,791	30,887,476	23,760,731	7,931,716	20,770,340	60,316,782
Earnings per share	777	858	475	106	277	804

Annex 4: Vertical Analysis of Assets

		2013	2014	2015	2016	2017	2018
TA	Total assets	100%	100%	100%	100%	100%	100%
CA	Current assets	50%	53%	50%	48%	43%	49%
CA1	Short-term financial assets	5%	6%	3%	3%	3%	3%
CA11	Cash	3%	5%	2%	2%	2%	2%
CA12	Short term investments	2%	1%	1%	1%	1%	1%
CA2	receivables & prepayment	27%	25%	22%	20%	21%	28%
CA21	Accounts and business receivables	11%	11%	16%	18%	15%	16%
CA22	Long-term receivables	0%	0%	1%	0%	5%	3%
CA23	other receivables	8%	6%	0%	0%	0%	7%
CA24	prepayment	7%	7%	4%	2%	1%	2%
CA3	Inventory	18%	23%	26%	25%	19%	19%
CA31	Goods	12%	11%	16%	13%	12%	13%
CA32	other inventory	7%	11%	9%	12%	7%	6%
FA	Fixed assets	50%	47%	50%	52%	57%	51%
FA1	long term investments	17%	18%	19%	19%	19%	26%
FA2	Intangible fixed assets	2%	1%	2%	2%	2%	1%
FA21	Intangible fixed assets under construction	0%	0%	0%	0%	1%	1%
FA22	Software	1%	1%	2%	2%	2%	0%
FA3	Tangible fixed assets	30%	27%	28%	30%	36%	24%
FA31	Property of machinery and equipment	30%	27%	27%	30%	31%	21%
FA32	Tangible fixed assets under construction	0%	0%	1%	0%	5%	3%

Annex 5: Vertical Analysis of Liabilities

		2013	2014	2015	2016	2017	2018
TL	Total liabilities & Equity	100%	100%	100%	100%	100%	100%
CL	Current liabilities	49%	48%	49%	51%	42%	35%
CL1	Short-term payables	26%	23%	24%	22%	15%	12%
CL11	Business and documents payable	4%	5%	10%	11%	9%	4%
CL12	other payable	6%	4%	0%	0%	0%	3%
CL13	Deferred payables	4%	2%	3%	3%	1%	1%
CL14	Due from state - tax liabilities and subsidies	4%	3%	2%	2%	1%	2%
CL15	Payables to social securities and health insurance	9%	9%	8%	7%	3%	3%
CL2	Bank loans and financial accommodations	23%	25%	25%	29%	27%	22%
CL21	Short-term bank loans	23%	25%	25%	29%	27%	22%
LA	Long-term liabilities	4%	4%	5%	4%	9%	5%
LA1	Long-term accounts and payables	0%	1%	0%	0%	0%	0%
LA2	Other payables	3%	4%	5%	4%	9%	5%
E	Equity	47%	48%	46%	45%	49%	60%
E1	Registered capital	23%	24%	27%	25%	34%	28%
E2	Retained earnings from previous years	22%	21%	16%	5%	12%	29%
E3	Reserve funds	3%	3%	3%	15%	3%	3%
E31	Legal reserve fund	2%	2%	3%	3%	3%	3%
E32	Reserve design and development	0%	0%	0%	0%	0%	0%
E33	other Reserve	0%	0%	0%	13%	0%	0%

Annex 6: Vertical Analysis of the Profit and Loss Statement

	2013	2014	2015	2016	2017	2018
Total Revenue	100%	100%	100%	100%	100%	100%
Expenses on sold goods	61%	58%	68%	72%	65%	54%
Gross profit	39%	42%	32%	28%	35%	46%
Sales, General and administrative	5%	5%	6%	8%	7%	4%
Other operating expenses	1%	4%	1%	0%	1%	1%
Operating profit	35%	41%	27%	20%	28%	43%
Depreciation expense	2%	2%	2%	3%	3%	0%
Interest Expense	6%	6%	8%	11%	9%	7%
Other income (expense)	4%	2%	7%	3%	3%	7%
Earning before tax	33%	36%	26%	11%	23%	43%
Tax	4%	4%	3%	1%	2%	5%
Net income	28%	32%	23%	10%	21%	38%

Annex 7: Horizontal Analysis of Assets

		2014/2013	2015/2013	2016/2013	2017/2013	2018/2013
TA	Total assets	31%	60%	74%	92%	134%
CA	Current assets	38%	60%	68%	62%	130%
CA1	Short-term financial assets	47%	3%	14%	5%	22%
CA11	Cash	89%	1%	23%	11%	36%
CA12	Short term investments	-20%	5%	0%	-5%	0%
CA2	receivables & prepayment	20%	28%	29%	48%	141%
CA21	Accounts and business receivables	30%	133%	186%	151%	233%
CA23	other receivables	0%	-100%	-100%	-100%	105%
CA24	prepayment	29%	-8%	-62%	-67%	-39%
CA3	Inventory	61%	123%	139%	99%	142%
CA31	Goods	28%	121%	101%	95%	161%
CA32	other inventory	117%	126%	205%	105%	110%
FA	Fixed assets	24%	60%	81%	121%	139%
FA1	long term investments	37%	76%	92%	108%	247%
FA2	Intangible fixed assets	5%	64%	137%	156%	-13%
FA21	Intangible fixed assets under construction	-1%	-1%	100%	277%	280%
FA22	Software	7%	83%	148%	120%	-100%
FA3	Tangible fixed assets	17%	50%	72%	127%	85%
FA31	Property of machinery and equipment	17%	45%	72%	97%	65%

Annex 8: Horizontal Analysis of Liabilities

		2014/2013	2015/2013	2016/2013	2017/2013	2018/2013
TL	Total liabilities & Equity	31%	60%	74%	92%	134%
CL	Current liabilities	28%	60%	82%	66%	67%
CL1	Short-term payables	15%	44%	48%	13%	10%
CL11	Business and documents payable	72%	323%	407%	391%	154%
CL12	other payable	-14%	-100%	-100%	-100%	17%
CL13	Deferred payables	-38%	21%	31%	-34%	-58%
CL14	Due from state - tax liabilities and subsidies	6%	-12%	-27%	-31%	26%
CL15	Payables to social securities and health insurance	40%	60%	36%	-28%	-29%
CL2	Bank loans and financial accommodations	43%	79%	122%	126%	132%
CL21	Short-term bank loans	43%	79%	122%	126%	132%
LA	Long-term liabilities	58%	108%	78%	353%	239%
LA1	Long-term accounts and payables	94%	-100%	-100%	-100%	-100%
LA2	Other payables	52%	140%	106%	424%	292%
E	Equity	31%	56%	66%	98%	196%

E1	Registered capital	40%	94%	94%	191%	191%
E2	Retained earnings from previous years	23%	15%	-64%	0%	204%
E3	Reserve funds	34%	73%	906%	114%	163%
E31	Legal reserve fund	40%	86%	94%	134%	191%
E32	Reserve design and development	0%	0%	0%	0%	-100%

Annex 9: Horizontal Analysis of the Profit and Loss Statement

	2014/2013	2015/2013	2016/2013	2017/2013	2018/2013
Total Revenue	38%	44%	11%	43%	124%
Expenses on sold goods	30%	61%	30%	53%	97%
Gross profit	50%	18%	-21%	28%	166%
Sales, General and administrative	54%	79%	92%	105%	110%
Other operating expenses	546%	31%	-81%	-6%	151%
Operating profit	61%	10%	-37%	17%	173%
Depreciation expense	56%	76%	79%	124%	-100%
Interest Expense	54%	93%	118%	118%	170%
Other income (expense)	-27%	187%	-19%	17%	336%
Earning before tax	52%	16%	-62%	-1%	192%
Tax	38%	-3%	-74%	-32%	134%
Net income	54%	18%	-60%	4%	201%
Earnings per share	10%	-39%	-86%	-64%	3%