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KARABUK UNIVERSITY
INSTITUTE OF SOCIAL SCIENCES
DEPARTMENT OF BUSINESS ADMINISTRATION

**A GLOBAL ANALYSIS ON FINANCIAL ANALYSING PRACTICES
APPLIED IN STEEL SECTOR.**

MASTER'S THESIS

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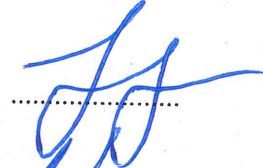

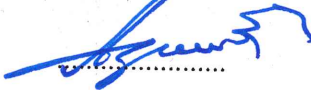
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THESIS APPROVAL PAGE

To Karabuk University Directorate of Institute of Social Sciences

This thesis entitled " A Global Analysis on Financial Analysing Practices Applied in Steel Sector" submitted by Ayşegül ŞEN YALÇIN was examined and accepted/rejected by the Thesis Board unanimously/by majority as a MA thesis.

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DECLARATION

I hereby declare that this thesis is the result of my own work and all information included has been obtained and expounded in accordance with the academic rules and ethical policy specified by the institute. Besides, I declare that all the statements, results, materials, not original to this thesis have been cited and referenced literally.

Without being bound by a particular time, I accept all moral and legal consequences of any detection contrary to the aforementioned statement.

Name Surname: Ayşegül ŞEN YALÇIN

Signature :



FOREWORD

I never would have managed to complete this thesis study without the overwhelming amount of help and support that I gained from my lecture Ass. Prof. Metin KILIÇ, my mother who has also been taking care of my lovely little daughter named Hira and all the rest of my family especially my beloved husband Fatih YALÇIN. I would like to thank all of them with all my heart.



ABSTRACT

Financial information of the companies that operates in any field is a vital to get a clear understanding about them. It is inevitable that the most common and the reliable way of providing information about a company's economic performance is the preparation of financial statements.

Analyzing the financials of companies, which operates in the same field, is such a complicated issue since their capacities, production and sales amounts and therefore the profit abilities are quite changeable factors that impact their financials. Financial analysis methods are coming into use at that point and they make the comparisons much easier and meaningful among the competitive companies.

The commonly applied financial analysis methods could be changeable from sector to sector but in general speaking, the financial ratio analysis is one of the most frequently used and reliable one in many fields.

The steel industry has been taken into consideration in this study and the financial ratios of the world's 10 leading steel companies' have been examined in detailed. While the condensed financial statements of these leading steel companies have being showed in this study, their key financial ratios (in percentages) are also commuted and listed as tables showing the figures for the last decade.

Keywords: Financial Statements; Analysis; Risk; Ratio; Steel Industry

ÖZ

Operasyon gösterdiği sektör farketmeksizin şirketler hakkında açık ve anlaşılır bilgiye ulaşmak için finansal bilgiler hayati öneme sahiptir. Yadsınamaz bir gerçek varsa o da şudur ki, bir şirketin ekonomik performansı hakkında bilgi vermenin en çok karşılaşılan ve en güvenilir yolu Mali tablo hazırlamaktır.

Aynı alanda operasyon gösteren şirketlerin kapasiteleri, üretim ve satış miktarları ve karlılık oranları oldukça değişkenlik gösterebildiği için, bu şirketlerin finansallarının analizi epeyi karışık bir konudur. Finansal analiz methodları ise işte tamda bu noktada analistlerin yardımına koşmaktadır ve bu analiz yöntemleri ile rekabetçi firmalar arasında kıyaslamalar çok daha basit ve anlamlı hale getirilebilmektedir.

En çok uygulanan finansal analiz yöntemi sektörden sektöre değişkenlik gösterebilir ancak genel olarak pek çok alanda, finansal rasyo analizi en sık kullanılan ve en güvenilir sayılan yöntemlerden biridir.

Bu çalışmada Çelik sektörü ele alınmış olup, dünyanın önde gelen 10 çelik şirketinin finansal rasyoları detaylı bir şekilde incelenmiştir. Bir yandan bu önde gelen çelik şirketlerinin son 10 yıla ait özet Mali tabloları gösterilirken öte yandan onların aynı yıllara ait ana finansal rasyoları (yüzdeler olarak) hesaplanarak tablolar halinde gösterilmiştir.

Anahtar Kelimeler: Mali Tablolar; Analiz; Risk; Rasyo; Çelik Endüstrisi

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ABBREVIATIONS

RoW : Rest of World

GDP : Gross Domestic Products

RoA : Return on Assets

CCC : Cash Conversion Cycle

EBIT: Earnings Before Interest and Taxes

EPS : Earnings Per Share

BOF : Basic Oxygen Furnace

EAF : Electric Arc Furnace

SUBJECT OF THE RESEARCH

The subject of this thesis study is to examine the financial ratio analysis applied in steel industry and computing the financial ratios of leading steel companies through the world in recent decade.

PURPOSE AND IMPORTANCE OF THE RESEARCH

It is difficult to give a definition to finance - the premises' have many faces, which make it difficult to provide a clear explanation.

The term of finance as it is known today, grows out because of economics and accounting systems. The asset's value of the notions have been growing up by the economists, which usually based on the future cash flows that will be provided via assets.

Accounting plays the key role for the business. Companies' activities are translated into numbers that provide a brief information about its economic situation and the performance including the problems faced. Finance is a kind of art that interpreting the accounting numbers for performance valuation, showing the actual status and planning the future actions.

In an enterprise system, the initial aim of financial management is to help financial managers to upper the companies' values. Financial markets also include the determining of stock and bond values, for this reason, a clear understanding of those issues is a must for anyone who is interested in finance.

Corporate finance is the synonym for the term of financial management. Financial management or the corporate finance in other words, focuses on the financial decisions regarding to types of the assets to procure, raising the needed capital and how to run the company to maximize its fair market value.

Financial management is also called corporate finance, focuses on decisions relating to what types of assets to acquire, how to raise the capital needed to purchase assets, and how to run the firm to maximize its value.

Although corporate financing decisions are usually the responsibility of top executives and their finance staffs, there are several reasons managers at all levels need to understand the logic on which these decisions rest. First, we all make similar financing decisions in our personal lives whenever we borrow money to buy a home, a car, or return to school. Second, as investors, we are often consumers of the financial securities that companies issue, and it is always wise to be an informed consumer. Third, and most important for present purposes, sound financing decisions are central to effective financial management. This is witnessed by the fact that financial leverage is one of the levers of performance. Therefore, failure to appreciate the logic driving an enterprise's financing decisions robs managers of a complete understanding of their company and its challenges.

The development of steel industry is critically linked with the overall growth of the economy. As a metal, steel has had a long journey from the early days when it enjoyed only limited usage avenues. It has a splendid versatility, which has enabled it to transgress all barriers. It has great advantages like long life, minimum maintenance cost, forward/backward linkage and resale value.

In a study at European University Institute of Florence in 1980, the steel industry looked the apparent arena in which is in a mutual interaction in the Community. No one could have foreseen at that stage that this industry, which had already paid heavy prices in the crises, would founder even more deeply into the quagmire and be exposed to further exceptional pressures. (Meny and Wright, 1987:12)

The purpose of this study is to determine the most commonly applied financial management and analysing systems through the iron and steel companies and having some tables showing the specific financial ratios of leading steel companies in the world. After having all these ratios on hand, it could allow us to get a result on the issue of financial ratio analyses from the investor's point of view.

METHOD OF THE RESEARCH

In order to reach the goal of this thesis study the literature search / document analysing methodologies were applied.

HYPOTHESIS OF THE RESEARCH / RESEARCH PROBLEM

The below listed hypothesis are accepted as true without any doubt and no need investigate:

1. Publicly available financial information of the inspected steel companies are accepted as correct.
2. The sources used in this study are accepted as providing updated, valid, true and enough information.

SCOPE AND LIMITATIONS

There is a company limitation on this study as it could not be possible to examine all the companies' financial ratios that operate in steel sector, for this reason I have limited them as the leading ten over the world. The financial figures that are used in this study are also limited to publicly available financial statements.

1. CHAPTER ONE: Financial Management

The meanings of key words regarding to finance and financial management process are explained under this title.

1.1. Meaning of Finance

When tracing the origin of the term of finance, many evidences could be provided that it is showing that the finance issue is as old as human life on earth. The Finance as word originally comes from French. The meaning of “the management of money” is given to it by the English-speaking people in the 18th century. Additionally the word “EXCHANGE” could be easily used instead of finance. The meaning of finance is simply exchanging the available resources like money, securities or assets and it includes the managing the resources and therefore the barter systems are some important parts of finance (Akrani, 2011: 1).

Oxford dictionary, determines the word ‘finance’ as the ‘management of money’. Another definition by Webster's Ninth New Collegiate Dictionary is like “the Science on study of the management of funds”. Funds management includes the money circulation, credit granting or making some investments as well as the banking facilities (Subramanian and Paramasivan, 2009: 2).

According to the Guthumann and Dougall, “Business finance can broadly be defined as the activity concerned with planning, raising, controlling, administering of the funds used in the business”. In the words of Parhter and Wert, “Business finance deals primarily with raising, administering and disbursing funds by privately owned business units operating in non- financial fields of industry” (Subramanian and Paramasivan, 2009: 3).

Finance, in other words, is an easy way of providing the needed funds like money or assets required by the companies or even individuals to achieve their economic goals.

Any business has the needs of finance to meet their goals and to survive in the economic environment. All kind of business activities depend on the finance. Some experts define finance as the art of managing money.

1.2. Meaning of Financial Management

Financial management allows anybody or any business to make the best planning to ensure a positive cash flow. Administration is also included in Financial Management as well as the prolongation of financial assets. Assessment is the primary concern of financial management, which is coming before the techniques of financial quantification.

Financial Management is a key part of the either economic or non-economic activities. These could lead the managers to decide the both most effective procurance and utilization of finance in a most profitable way. Within the scope of the traditional approaches, the financial management was a part of accountancy whereas it has expanded to the various business areas with the universal functions and innovations in today's industrial world. Nowadays financial management has become a vital part of business concern (Subramanian and Paramasivan, 2009: 2).

Financial management is related to earning, funding and managing the assets through the goal in mind. For this reason, the financial management functions could be divided into three areas, which the first one is the investment, second is the financing and finally yet importantly is asset management (Horne and Machowicz, 2009: 21).

Importance of financial management is to meet each requirements of the business Environment. Any company should keep up adequate financial management regarding to fulfilling their smooth functioning business activities. In addition, one of the key importance of financial management is sustainable growth to achieve the companies planned goals. The importance of financial management cannot be denied in any case of business planning a controlling systems as well as the financial stability and to keep the companies away from bankruptcy.

Financial Management is strongly about the most efficient way of funds management in various business fields. To describe the business finance with simple words, it can be said that the financial management as practiced by company.

The most important financial management points could be listed as follow:

- a) **Investment Decision:** The Investment Decision related to the decision to be taken by the investors or the finance managers regarding to the funds amount and the occasions to invest in. on other words, it is about selecting the areas and the types of the assets to be invested in.
- b) **Financial Planning;** As a result of Financial planning it, each financial necessity of the organizations could be decided. Financial planning is also aim to take prompt and correct measurements in time instead of worries and difficulties to be faced in later stage of financial management life cycle of a company. Financial planning is such a crucial area, which linked to business concern. Typically, the most important key for business success is mostly depends on the financial planning of a company.
- c) **Protecting / Allocating Funds;** Importance of financial management also includes protecting finance in hand towards achieving business goals. One has to determine the areas where the funds are required and allocated; it is the same in all kind of fields for smooth functioning of business. Overspending on one project may lack the finance in many cases. Proper utilization of the funds to assets enhance is important for the operational success of the company. When the funds are used appropriately and allocated wisely, it can help reducing expenses and increasing capital for the company.
- d) **Financial Decision;** Financial decision is also one of the most important keys of financial management. Once the financial choice has made by a company it cannot be rewind. Once the money spent on a financial choice, it will not be repaid again for any wrong decision made. It is not unignorably that a financial selection could affect the all business operation. As the finance department has a clear relationship with all the other departments of a company.

- e) **Assets Management;** “Once assets have been obtained and the proper funds are provided, these assets still needed to be managed successfully. The financial managers are responsible with operations over existing assets.” (Horne and Machowicz, 2009: 21)
- f) **Economic Growth and Stability;** Proper financial management helps companies to ensure their economic growth. They can expand their wealth gradually. Which will help them to grow financially. It is the only way to ensure any company’s financial stability is through economic growth and only option to ensure the same aim is through financial management.

An effective financial management is supposed to have some objectives or goals, because judgment as to either or not a financial decision is efficient should be made in light of some standards. Various purposes could be likely in this case; however, the main objective of the company is to increase the wealth as much as possible.

Common stock shares give us an evidence about ownership. The market price per share of the company represents the shareholders wealth, which could be define as the reflection of companies’ financial management decisions on the important issues such as investments, financing, and asset management. One of the idea in order to measure the achievement of a business decision is to looking its effects on the companies share prices (Horne and Machowicz, 2009: 22-30).

1.2.1. Corporate Finance

Corporate finance decision is any decision that a company makes and which has financial implications, and any decision, which affects the financials of a company.

Corporate finance is the mixture of finance, which includes the financing, capital structuring and investment decisions at the same time. Corporate finance is initially about the maximizing of shareholder value through both long and short-term financial plans and strategies (Kenton, Date Accessed: 09.05.2019).

Assuming that anyone was about to start his own business. The type of job, that he is starting, is not important; he would have to answer the following questions in any case:

1. How long-term investments should he takes on? In other words, what sorts of equipment's, buildings or machinery will he need?
2. Where will he get the long-term financing to pay his new investments? Will he borrow money via a bank?
3. How will he manage his daily financial activities such as paying suppliers as well as collecting from customers?

These are May not the only inquiries to be occur, but they are among the key ones. Corporate finance, in general, is the study of ways to answering these kind of inquiries (Ross, Westerfield and Jordan, 2002).

Capital structure of the company, including its funding and management's actions in line with the increasing the firm value, is corporate finance. It also includes the tools and the analysis used in order to prioritize and distribute financial resources. The rules of Investment decisions are generally refers to capital budgeting techniques. The best technique is the will maximizing shareholders' wealth as well as the owners of the company. This essentials property could be divided into several criterias as follows:

- Considering the cash flows carefully.
- Discounting the cash flows at the alternative cost of funds.
- Selecting the best technique to maximize the shareholders' wealth.
- Seperating the projects and considering each one independently (this is known as the value-additivity principle) (Copeland and Weston, 1988).

The basic aim of corporate finance is maximizing the firm's value with a right way of planning and implementing management resources while balancing the risk and profitability of the firm. It can apply to any firm in any sector from production to services and the other business fields (CFI, Date Accessed 01.03.2019).

Corporate finance teams are responsible with directing and foreseeing their copanies' financial activities and the decisions about capital investments. Such decisions can be whether a compulsory or a proposed investments and Corporate finance should

also be charged of deciding whether to pay for these investment with equity, debt, or both as well as the dividend issue that shareholders would like to receive.

Corporate managers are the delegates between the shareholders and the owners of the firm in the case of any conflict. Agency theory is to analysis of such conflicts, which is now a day's one of the major part of the economic literature. Whether to give a dividend to shareholders can create major conflicts. The dividend payouts to shareholders means the reducing the resources under managers' control, which also means that reducing their power too (Jensen, 1986: 323-329).

Managers have encouragements to grow their companies up further to the optimal size. The company grows the managers' power increases by increasing the resources under their control (Murphy, 1985: 11-42).

The financial management functions are generally correlated with a top officer of the company, such as a vice president of finance or like chief financial officer (CFO). The responsibility of the vice president of finance is to coordinating the activities of the treasury department as well as the managers. While the controlling office handling various costs, payments and financial accounting, taxes, and management information systems etc. The responsibility of the treasurer's office is being in charge of managing the companies' cash and loans, its financial planning as well as its capital expenditures (Ross, Westerfiels and Jordan, 2002).

The financial manager's responsibility is to make decisions concerning the acquisition and usage of funds in order to get the biggest benefit of the firm. Some specific activities that are involved in the financial managers' working fields are like;

- **Forecasting and planning;** managers should interact with other executives and making the plans, which can help shaping the company's future.
- **Major investment and financing decisions;** managers should help determining the optimal sales amount and expected growth rate; they also should help deciding on which assets to invest and best way to find these investments funds.

- **Coordination a Control;** managers should be interacted with other executives to be sure that the company is operating efficiently. Any business decision has some financial implications (Weston, Besley and Brigham, 1996).

The first issue that occurs in minds regarding to the companies' long-term investments is Capital Budgeting. The meaning of capital budgeting is the process of planning and managing the company's long-term investments. Within the scope of capital budgeting, the financial manager should try to identifying the investment opportunities that are worth more for company to invest than they cost.

Capital Structure is the following question arising in the financial managers minds is to obtaining and managing long term financing which required in order supporting its long-term investments. A company's capital structure (or financial structure) is the specific mixture of long-term debt and equity the company uses to finance its activities. The financial manager should have two concerns in this field that the first one is how much should the firm borrow? Is the mixture of debt and equity is best? The mixture chosen will affect either the risk or the value of the firm. Second, what are the cheapest sources of funds for their firm?"

There are three major problems faced by managers when making investment decisions. First, they always have to seek for new opportunities in the market or new technologies. Growth is based on this. Second, the estimated cash flows from the projects should be ready on hand, and finally, the projects should be evaluated before getting to final decision (Copeland and Weston, 1988).

Ideally financing the capital investments through the company's resources, debt or mixture of both are the issues of capital structuring. It also includes the long term borrowings for the main capital expenditures. The equity and the debt, which are the main sources of a company, should be managed nested since having too much debt may increase the risk of default in repayment, which can lead the firm to bankruptcy (CFI, Date Accessed: 02.02.2019).

A company's capital structure is vital to maximize the business value. Its structure should be a nice combination of both long-term and short-term liabilities as

well as its equity. In order to determine how well balanced or risky is the company's capital structure, the ratios between the firm's liabilities and its equity is used.

Development is a must for the company's capital structure, with taking the risk into consideration since it has linked the value strongly. Risk may be included for two considerations; first the business risk and the second is the financial risk (Phuntsho, 2013: 23).

1.2.2. Financial Risk Management

Financial risk may be defined in several ways. The nature of cash flow and transactional exposures should be well understood in order to have a better understanding of the impact of financial risk in any company. The risk could be either the amount involved or the timing. Understanding the companies' risk factors in their financials is the most apparent way to understand such kind of risks. The impact of the changes in the reported earnings, for example, will be indicative of the situation that the company experienced. However, financial risk will extend to expected future transactions. Moreover, there is a term of economic exposure, which is well known as the financial risk, which comes from the macroeconomic variables and the competitive position that the company involves (Moles, 2016: 11).

Risk management issue is one of the biggest parts of corporate treasury. It depends on the business field and the structure of the company, the types of risk of a company may vary.

There could be plenty of different types of expected or unexpected risks of a company could be faced, but the most commonly faced risks through the treasury professionals are the financial risks such as FX, interest rate, liquidity, credit, etc. The management of financial risk could be separated into two parts: one is risk measurement and the second is risk control. Generally, it is agreed on how to measure the risk than on how it should be controlled (Financial Risk Management: *A Practitioner's Guide to Managing Market and Credit Risk Second Edition*, Date Accessed 02.03.2012).

While the financial risks have been increasing dramatically in recent decades, risk and risk management are not modern times issues. Globalization shows us that any risk

could be caused by an event that is thousands of miles away and nothing to do in domestic markets. Information is available

The result of increasingly global markets is that risk may originate with events thousands of miles away that have nothing to do with the domestic market. Information is available instantly at anywhere, which means the change (Horcher, 2005: 1).

- Well run firms' operations plans are generally based on a set of forecasted financial statements. The process of financial planning starts with forecasting the sales amounts for the upcoming years. In order to achieve the targeted sales amounts, the assets will be required and the decision is needed to be made on how to finance these required assets. In this case, the balance sheet as well as the income statements should be projected. After determining the base case of forecasted financial statements and the key ratios, top managers will have to know (1) if the results are realistic to be reached, (2) how to reach the planned results (Weston, Besley and Brigham, 1996).

The risk profile of a company is determining via scope of its annual statements. The greater the risks, the more requirements of audit testing. The independent auditors are seeking for such kind of risk factors which may cause the financial statements to be misstated. However, the auditors are worried of all kinds of risks that could impact the company because the financial statements reports could not be kept away from company's operations. The assessments methods applied by the auditors could also be use by the management as a risk management developing system (Paul, 2012: 4).

The investment value of a company depends on the cash flow timing. One of the key principles of finance is that anybody prefers to receive cash flows as earlier as possible rather than later. Ten Liras, for example, received today is worth more than ten liras received next year because today's liras can be invested to gain some interest. Therefore, the timing plays a big role in stock and bond prices.

The companies' must consider the risks at any time. The amount and timing of cash flows are not usually known as certain. Most investor's do not willing to have many risks (Ross, Westerfield and Jordan, 2002).

In order to have a good understanding of the types of the risks that the company may face and categorized them based on the probability as well as the severity, the risk managers should normally coordinate the various business units. Some of the risks that large companies may face are not limited to:

- Fraud risks
- Tax compliance risks
- FX risks
- Pricing risks

Risk managers need to manage a wide range of risk types and nowadays more companies are focusing on early risk detection capabilities. There is a growing trend of being holistic for the managers to have a better understanding of their company's business and being more involved in the strategic planning (Lee, 2017).

1.2.2.1. Fraud Risks

Fraud means an act that is giving misinformation or black out to mislead another party. Some analytical procedures are applied by the independent auditors in order to avoid fraudulent statements (C. Knapp, 2001: 25-27), (M. Knapp 2001: 25-27).

1.2.2.2. Tax Compliance Risks

Financial intermediaries such as banks, are nowadays becoming the delegate between the responsible and the tax authorities. These kinds of institutions deliver the information they receive to the taxing authorities through the World such as earnings, withholdings etc (Marian, 2013:3).

1.2.2.3. FX Risks

Since the buying and selling of different currencies are inevitable for the cosmopolitan companies over the world, FX (Foreign Exchange) risk is one of the most prevalent problems that they frequently face with. These risks could arise due to the

activities like sales and purchasing as well as the debt gained on a foreign currency, dividend payments etc.

Exchange controls, limitation on foreign currencies by the government are could be the another types of FX risks which are also likely to be born. In the lights of the above-mentioned information, it could be said that, if a company works as multinational, it is better to be familiarize itself with the laws related to the country's currency (Lee, 2017:2).

1.2.2.4. Pricing Risks

Risk of a decline of a security value or an investment portfolio is called price risk. The less volatility, the less price risk such as stocks. There are many hedging techniques and tools ranging from conservative decisions to aggressive strategies. Price risk changes from a company to others while it could be less for a well-established company, it could be felt very strongly for a small startup company. Price risk could be reduced easily comparing to the other types of risk by diversification. In order to lessen the price risk, the invested stocks should be varied. In other words, the investors should purchase different companies shares especially from different kind of business fields, which means not putting all the eggs into same basket (Kenton, Date Accessed: 09.05.2019).

In today's modern world, both the treasury and the risk management departments are fundamentals for being a successful and sustainable for all leading organizations. It may have not been true before; the treasury management helps to keep the liquidity on the expected levels to meet its liabilities, payments, bills and such kind of risks like Exchange rate, volatility on oil prices over the World etc. Furthermore, the analysis and the assessments provided as a result of an effective treasury and risk management enables companies to be informed all the times and also to be capable to give better strategic decisions (Oxford, Date Accessed 10.04.2019).

Due to some Corporate governance rules and some compliance regulations that have become compulsory (like ISO 31000, an International Risk Management Standard) the emphasis on risk management have been increasing significantly in recent years (Lee, 2017:2).

A sample risk management system should include below listed sections according to ISO 31000:

- Risk management objectives (governance)
- Risk strategy
- Description of the potential risks in the environment
- Acceptable risk levels
- Risk management system
- Risk assessment
- Risk protocols
- Risk response
- Roles and responsibilities of risk management
- Risk management training topics and priorities (ISO31000:2009, 2010).

2. CHAPTER TWO: Financial Analysis

Diagnosing the current and the past economic condition of any company and giving some hints about its itsfuture condition could be described as the puspose of financial analysis (Benton, 1983).

Determining the profitability, liabilities, strengths and future earnings potentials of a company is called the financial analysis. Assesment of a companies financial life force could be done via wide range of techniques. The most commonly applied techniques are horizontal analysis, vertical analysis and ratio analysis.

Since the financial analysis provide some important clues about the company's current health and future potential, it is known as the critical point of Corporate governance. These analysis reports missions are not only providing critical datas to the investors but also allow the managers to measure their financial performance with regard to the expected results and the industry growth. From the managers perspectives, financial analysis are the key factors for the success and sustainability of the company as they shows the SWOT of the companies (Financial Planner World, Date Accessed 2019).

The aim of a financial statements of a company is to providing the key datas that are taken into consideration while decision making and also in order to evaluating the performance of the company to the key actors such as the owners, shareholders, creditors, competitors etc. Financial statements summarizes the basic accounting datas. The actors could be interested in various parts of these reports for example, the creditors are willing to know the liquidity of the company while government is examining them from the regulatory point of view. Profitability ratios are also attractive side of the reports for the Shareholders (Ilearnlot, Date Accessed 10.01.2019).

A brief information on the companies assets, equity, profit, liabilities, loss are given via financial statements. All these information may not be easily understandable

for the interested parties like shareholders, creditors etc. Therefore, there are many methods to analyses and interpret the financial statements.

Financial analysis consist of using several financial statements. These statements give information about some things. Initially, the balance sheet summarizes the assets, liabilities, and owners' equity of of the company at the current time, but generally annually or a quarter based. Second is the income statement, which summarizes the revenues as well as the expenses of the company through a limited period mostly based on quarterly periods and year-ends. While the balance sheet shows the snapshot of the company at that period, the income statements summarizes the pprofitability of it over the same period. Some useful derivatives statements can be produced via these main statements such as cash flow, statement of retained earnings etc (Horne and Machowicz, 2009).

2.1. Financial Statements

Financial statements are one of the most commonly used written records that shows the success of the company activities and the performance of it.

Firms must make full and fair disclosure of their operations by publishing financial statements and other reports required by the formal authorities. The avarage size of the annual reports sent to stockholders continues to increase each year (Weston, 1996: 77).

Financial statements are in use of people for the wide range of information needs. The users of them are generally but not limited to the managers, current investors, potential investors, shareholders, creditors, government, etc (Posthumus, Basson, Oliver and Watney, 2000).

Financial statements provide reliable datas to the investors as well as the analysts who are rely on the datas given by the company on the statements and use them to make predictions about its future value and the stock prices (Murphy, Date Accessed: 18.05.2019).

Consolidated financial statements are consist of both the main company's financials and its subsidiaries. Consolidated statements provide a brief look at the

financial position of the main company and its subsidiaries at the same time, and they show the snapshot of the overall health of an entire group (Consolidated Financial Statements, Date accessed: 22.05.2018).

Hamptors John says that the financial statements are logical way of collection of accounting numbers. The aim of it is to provide a clear understanding of financial issues of the company. It could show the current position in the case of a balance sheet or income statements (Subramanian and Paramasivan, 2009: 2-20).

Footnotes to the financial statements give some additional information, which may help to explain how these figures are reached and any irregularity if available. Thus, the footnotes are the reports, which provide the details and additional information of the main parts of reporting. This method is used for clarifying (Kenton, Date Accessed: 09.07.2018).

The main parts of the financial statements are the balance sheet, the income statement, and the cash flow statement. Financial statements are needed to be audited by some authorities such as government agencies, independent auditing firms, accountants, etc.

2.1.1. The Income Statements

Income statements are used in order to summarize the operating results of a company which is matching the earned revenue in a particular period of time and the expenses occurred in order to earned that revenue in the same period that are usually on a quarterly bases. The figures showing the revenue and expenses on the income statement are directly taken from the adjusted trial balance. The income statement demonstrates a net income when the revenue exceeds the total expenses, whereas it demonstrates a net loss if the total expenses exceed the revenue in the same period. The net income or the loss for the period seen on the income statement is reported in the accumulated earnings statement thus it can be said that the income statement comes the first of all other financial statements (Accountingformanagement, Date Accessed: 27.03.2019).

There are some different terms to define the income statement such as statement of operations, earnings statement, and profit and loss statement (Drake, 2012).

The Income Statement is the outcome of the recorded information of a company and then these information separated into revenue and expences figures. It usually made up montly as of the closing of the books and shows the current picture of the revenue and expense figures of the company on a specific period of time such as a quarter or a fiscal year. While the managers use the income statement to value the pprofitability and the performance of the company, the investors and the creditors are also evaluating the companies via this report on the case of reisk assesments (Moneyinstructor, Date Accessed: 18.05.2019).

An income statement can give an idea of the growth of a company during the related period and when having a comparative ones on hand, it allow us to see the progress made since the last period end. In order to evaluate and analyse the profitability of the company, the changes in money values as well as the percentages could be designated (HelFert, 1972) .

Table 1. Condensed Income Statement of Kardemir as of FY 2018

1.000 TRY	01.01.2018	01.01.2017
	31.12.2018	31.12.2017
Revenue	5.582.801	3.972.626
Cost of Sales (-)	-3.874.119	-3.301.094
Gross Profit	1.708.682	671.532
Gross Profit Margin (%)	30,6	16,9
General Administration Expenses (-)	-59.395	-43.564
Marketing, Sales and Distribution Expenses (-)	-30.883	-34.265
Other Operating Income	1.172.512	318.004
Other Operating Expenses (-)	-1.157.960	-412.657
Operating Profit	1.632.956	499.049
Operating Profit Margin (%)	29,2	12,6
Other Income and Expenses	32.368	9.423
Financial Income	592.527	191.409
Financial Expenses (-)	-1.191.815	-479.938
Pre-tax Profit / Loss	1.066.037	219.943
Tax Revenue (Expenses)	-246.427	33.317
Net Profit / Loss	814.259	251.504

Source: Kardemir, Date Accessed: 30.05.2019

2.1.2. Balance Sheet

A balance sheet, which is also a kind of a most commonly used financial statement, underlined the figures showing a company's liabilities, equity and its assets on a specific time period. It is usually used as the base of calculating the financial ratios and assessment of its capital structure. It is a report showing the liabilities and the assets of the company. This report is a fundamental part of calculating financial ratios besides the income statement as well as the cash flow statements (Hayes, Date Accessed: 05.02.2019).

The balance sheet addresses not only the total assets of a company but also the way they financed via either debt or equity. In other words, it could be called as the statement of worth or a statement of financial position. The simple formula of the balance sheet: **Assets = Liabilities + Equity** (Corporate Finance Institute, Date Accessed 18.03.2019).

Table 2. Condensed Balance Sheet of Kardemir

1.000 TRY	31.12.2018	31.12.2017	1.000 TRY	31.12.2018	31.12.2017
Total Current Assest	2.913.800	2.787.735	Current Liabilities	2.105.625	2.859.825
Cash and Cash Equivalents	272.693	989.792	Short Term Borrowings	21.450	46.382
Trade Receivables	807.331	771.411	Current Portion of Long Term Borrowings	473.775	460.729
Inventories	1.645.139	755.692	Trade Receivables	1.378.424	1.408.680
Prepaid Expenses	101.855	250.376	Deferred Income	104.245	861.193
Other Current Assets	86.782	20.464	Other	127.731	82.842
			Total Long-Term Liabilities	2.040.026	1.620.550
Total Non-Current Assets	5.318.967	4.140.036	Long Term Borrowings	1.492.370	1.403.941
Tangible Assets	5.206.339	3.945.574	Other	53.046	39.572
Intangible Fixed Assets	32.883	37.006	Provisions for Employee Benefits	184.367	169.336
Deferred Tax Assets	988	120.035	Long-Term Deferred Revenues	7.749	7.701
Other	78.757	37.421	Deferred Tax Liabilities	302.494	
			Shareholders' Equity	4.087.115	2.447.395
			Paid-In Capital	1.140.000	1.140.000
			Mutual Affiliates Capital Adjustment (-)	-82.360	-79.980
			Revaluation Fund	1.648.845	837.168
			Restricted reserves allocated from profits	36.628	34.304
			Retained Earnings	510.417	250.056
			Net Profit/(Loss) for the Period	814.485	251.545
			Other	19.100	14.302
Total Assets	8.232.767	6.927.771	Total Equity and Liabilities	8.232.766	6.927.771

Source: Kardemir, Date Accessed: 30.05.2019

2.1.3. Cash Flow

The cash flow statement shows the cash exchange, in a specific period, between an organization and the outside world and this is what makes the cash flow important. Because this can let the investors know if the company has enough cash to pay its expenses or not. Sometimes it could be difficult to interpret the profits stated on the income statement as it includes mostly non-cash elements and therefore not providing a figure about the company's exchange of cash during the period. From the investors perspectives of view, cash but not only operating income also cash from all sources is determined as what pays back their investments. (Michelle Seidel, Date Accessed: 04.02.2019).

The cash sources of cash inflow and the outflow of a company concern in a limited time is shown on the cash flow statements. The cash flow statement of the company is just involves short-term financial position of it. The summary of cash flows over the investments, operating and financing is shown on this statement and it also reconciles them with changes in its cash and cash equivalents (Subramanian and Paramasivan: 2009).



Table 3. Cash Flow Statements of Kardemir as of FY 2019**Consolidated Statement Of Cash Flows For The Year Ended 31 December 2018**

(Amounts expressed in Turkish Lira ("TL") unless otherwise indicated.)

Note	Current period (Audited) 1 January — 31 December 2018	Prior period (Audited) 1 January - 31 December
CASH FLOWS FROM OPERATING ACTIVITIES	227.048.129	1.387.550.241
Net profit /(loss) for the year from operations (A)	814.259.158	251.504.356
Adjustments to reconcile net profit (loss) for the period (B)	1.057.397.876	494.960.830
Adjustments related to impairment (reversal)		
Allowance (reversal) on inventories	8 (3.722.247)	(5.239.393)
Impairment on goodwill	12	
Allowance (reversal) related to trade receivables	7,15 2.900.535	98.871
Adjustments related to provisions		
Provision (reversal) for employee benefits	17 32.961.527	30.667.701
Provision (reversal) for litigation	16 4.492.205	1.410.393
Adjustments for tax (income) / expense	28 251.778.250	(31.560.886)
Depreciation and amortization expense	21,22 146.103.876	140.445.296
Adjustments related to interest (income) / expense		
Interest expense	27 104.693.961	96.808.342
Interest income	26 (60.963.353)	(29.769.086)
Deferred financing expense arising from credit sales	6	17.451.763
Adjustments related to profit / (loss) reconciliation	24 (372.348)	4.871.113
Adjustments related to fair value loss / (gain)		
Fair value loss / (gain) from derivative financial instruments	26,27 41.482.563	11.836.887
Adjustments related to retained earnings of investments accounted under equity method		
Share of profit from investments accounted under equity method	9 (228.832)	541.541
Adjustment for other items related with cash flow of investment or financial activities	25 (30.049.278)	(8.072.694)
Adjustments related to derivative swap contracts loss / (gain)	26,27 (56.868.359)	34.475.648
Adjustments related to unrealized foreign exchange differences	625.189.376	230.995.334
Net cash provided by operating activities before changes in working capital (C)	(1.621.370.902)	653.687.359
Change in trade receivables	(48.561.125)	(367.578.092)
Change in other receivables	(46.868.965)	(3.138.600)
Change in other payables	10.288.206	23.969.924
Change in inventories	(877.421.856)	(60.026.788)
Change in prepaid expenses	104.915.882	(127.075.920)
Change in trade payables	(6.945.334)	721.836.720
Adjustments related to increase / (decrease) in other working capital items	121.772	17.412.849
Adjustments related to increase / (decrease) in deferred income	(756.899.482)	448.287.266
Net cash provided from the operating activities (A+B+C)	250.286.132	1.400.152.545
Payments related to provisions for employee benefits	17 (12.111.388)	(8.532.562)
Payments related to other provisions	16 (3.560.277)	(94.597)
(Payments) / refunds for income taxes	28 (7.566.338)	(3.965.685)
Other cash inflow / (outflow)	7	(9.460)
CASH FLOWS FROM INVESTING ACTIVITIES	(340.824.881)	(119.945.087)
Cash inflow from sale of tangible and intangible assets		
Proceed from the sale of tangible assets	11 220.808	1.478.562
Cash outflow from purchase of tangible and intangible assets		
Purchase of tangible assets	11 (359.590.723)	(126.158.739)
Purchase of intangible assets	12	(3.892.143)
Net cash outflow from subsidiary purchase- Enbatı	(886.784)	
Cash outflow from acquisitions or due to capital increase	(250.000)	
Dividend received from investment in associates	9,25 30.049.278	8.627.233
Other	(10.367.460)	
CASH FLOWS FROM FINANCING ACTIVITIES	(602.684.181)	(608.088.575)
Proceed from financial borrowings		
Cash inflow from loans	453.002.727	387.916.300
Repayment of financial borrowings		
Cash outflow for loan payments	(939.490.873)	(887.584.888)
Cash outflows for repayment of financial lease liabilities	(841.084)	(1.285.111)
Cash inflow from derivative financial instruments	151.617.049	16.304.230
Cash outflow from derivative financial instruments	(106.585.577)	(43.845.508)
Interest received	60.963.353	29.769.086
Interest paid	(219.607.851)	(108.027.074)
Cash outflow for purchasing own shares and other based on equity	(2.379.425)	(698.110)
Other cash inflow (outflow)	637.500	(637.500)
INCREASE/(DECREASE) IN CASH AND CASH EQUIVALENTS	(716.460.933)	659.516.579
CASH AND CASH EQUIVALENTS AT THE BEGINNING OF PERIOD	4 989.154.857	329.638.278
CASH AND CASH EQUIVALENTS AT THE END OF PERIOD	4 272.693.924	989.154.857

2.1.4. Changes In Equity

Retained earnings statement is also other name of this statement. The information about the changes on the companies equity are shown on this table. However, this statement is not as much popular among the companies and it will probably not be prepared as a separate statement of changes in owner's equity (Subramanian and Paramasivan: 2009) .



Table 4. Changes in Equity of Kardemir as of FY 2018

Consolidated Statement Of Changes In Equity For The Year Ended 31 December 2018

(Amounts expressed in Turkish Lira ("TL") unless otherwise indicated.)

Actuarial gain / (loss) arising from employee benefits	Other comprehensive income /(loss) not to be reclassified to profit or loss in subsequent periods								Total retained earnings		Equity attributable to the parent	Non-controlling interest	Total equity	
	Note	Paid-in capital	Capital adjustment difference	Treasury shares (-)	Share issue premium	Actuarial gain / (loss) arising from employee benefits	arising from investments accounted under equity method	Revaluation fund of tangible assets	Restricted reserves assorted from profit	Retained earnings				Net profit/(loss) for the year
Balance as of January 1, 2017		1.140.000.0	4.613.596	(79.282.26)	11.803.95	4.533.749	(182.123)	884.492.54	33.450.11	361.861.43	(123.789.8)	2.237.501.1	(115.062)	2.237.386.0
Net profit/(loss) for the year											251.545.43			251.504.35
Other comprehensive income/(loss)		-	-	-	-	(6.311.252)	-	(34.485.96)	-	-	6	251.545.436	(41.080)	6
Total comprehensive income/(loss)		-	-	-	-	(6.311.252)	-	(34.485.96)	-	-	251.545.43	210.748.223	(41.080)	210.707.14
Treasury shares				(698.110)								(698.110)		(698.110)
Transfers	19	-	-	-	-	-	(12.838.90)	854.035	(111.805.0)	123.789.87				
Balance as of December 31, 2017		1.140.000.0	4.613.596	(79.980.37)	11.803.95	(1.777.503)	(182.123)	837.167.67	34.304.14	250.056.42	251.545.43	2.447.551.2	(156.142)	2.447.395.0
Balance as of January 1, 2018		1.140.000.000	4.613.596	(79.980.372)	11.803.953	(1.777.503)	(182.123)	837.167.67	34.304.14	250.056.42	251.545.43	2.447.551.23	(156.142)	2.447.395.0
Net profit/(loss) for the year											814.484.55			814.259.158
Other comprehensive income/(loss)		-	---	---	---	4.643.255	-	824.084.49	-	-	0	814.484.550	-	828.727.74
Total comprehensive income/(loss)		-	---	---	---	4.643.255	-	824.084.49	-	-	814.484.55	1.643.212.29	(225.392)	1.642.986.9
Increase (decrease) due to Redemption of Shares				(2.379.425)	-	-	-	-	-	-	-	(2.379.425)	-	(2.379.425)
Transfers		-	-	---	---	---	-	(11.247.719)	2.323.771	260.469.3	(251.545.43)	-	-	-
Transfers	19	-	-	---	---	---	-	---	-	(1.268.344)	-	(1.268.344)	381.560	(886.784)
Increase (decrease), due to other changes				-	-	-	(1.159.135)	-	-	1.159.135	-	-	-	-
Balance as of December 31, 2018		1.140.000.	4.613.596	(82.359.797)	11.803.953	2.865.752	(182.123)	1.648.845.313	36.627.91	510.416.6	814.484.55	4.087.115.	26	4.087.115.

2.2. Analysing Financial Statements

Financial statement analysis allow us to compare the companies' financial performances, which are in the same field of business. Generally speaking these analysis help to identify a companies both strengths and weaknesses so we could determine its financial position. It also give some suggestions of the actions to be taken which can lead the company to use the advantage of its strength or in order to correct its weaknesses.

The importance of the financial statement analysis is inevitable for either the company managers (especially the financial and risk managers) or the creditors and the investors. The internal managers use these analysis to make the best investment and financing decisions and thus maximizing the company value. Since these analysis allow the external actors, such as the creditors, shareholders and the investors, to evaluate if the company attractive enough to be invested in and also how close the company to meet its current and expected financial obligations (Weston, Besley and Brigham, 1996).

The financial statement is the official document of a company that shows the all-financial information of it in a specific period. Providing clear and true information and understanding of the companies financial aspects are the main purpose of the report. Thus, the importance of the financial statement is as high as the decisions.

“Financial statements are like a fine perfume - to be sniffed but not swallowed” (Brilloff, Date Accessed: 08.04.2019).

There are several techniques of financial data analysis to interpret the companies' financial position among the competitors via the data presented. Some of the most commonly applied techniques are common size analysis (horizontal and vertical), trend analysis and the ratios analysis. These analysis could be explained as the study of differences of the reported data among the industries or the companies. While blending the information gained via these types of analysis the overall financial position could be determined (Gibson, 2009:5).

2.2.1. Common Size (Horizontal & Vertical) Analysis

Common size (horizontal & vertical) analysis addresses the comparisons in percentages. To give an example, when a company has \$ 1,000,000 assets while having \$40,000 cash, it means that the cash represents 4% of total assets. Using the percentages rather than the actual amounts is mostly preferable. To have an example; let's say a company A earns \$10,000 while the company B earns \$ 1,000, the A seems to be more profitable at first sight however, the total equity of A \$ 1,000,000 and B is USD 10,000 in this case, the equity is as follows:

	Firm A		Firm B	
<u>Earnings</u>	\$ <u>10,000</u>	= 1%	\$ <u>1,000</u>	= 10%
Owners' Equity	\$1,000,000		\$ 10,000	

The common size analysis usually applied in order to make the comparisons more meaningful among the companies in different sizes. The changes in amounts should be evaluated very carefully in this analysis because sometimes a very small change in the amounts can be seen as a significant change on the percentage. To give an example; assuming that a company's profit was only USD 100 last year while it is USD 500 this year, this could be seen only an increase of USD 400 however it means an important percentage increase (GIBSON, 2009).

A base amount is selected for a **Vertical analysis** and each amount is compared based on this selected one from the same year. To give an example, assuming that the advertising expenses were \$2,000 in 2005 and sales were \$200,000, which means that the advertising is 1% of sales. On the other hand, a base year is selected for **Horizontal analysis** and each amount is compared with the base amount in the same year. To give another example, assuming that the sales amount was \$600,000 in 2009 and it reached to \$900,000 in 2010 which means that the sales has increased 50% from 2009 to 2010 (GIBSON, 2009).

Comparisons of the financial statement items means common size analysis. Each item on the financial statement is compared with a benchmark in this analysis (Drake). With usage of Horizontal analysis, we will be able to examine a specific items behaviours from the financial statements like sales or cost of goods sold over the time. The items on the income statements or the balance sheet are analysis via Vertical analysis in a specific period of time. When making a vertical analysis on the income statement all the figures are stated as a percentage of sales whereas all the items are stated as a percentage of total assets when analysing the balance sheet.

2.2.2. Trend Analysis

The financial statements could be analysed via calculating some ratios with using the information given on them. Each item on the financial statements could be taken into percentage relationship and each one can have upward or downward directions over the common value of 100%. Trend analysis helps us to get a better understanding of the trend relationship with several items that are shown on the financial statements. These percentages could be considered as the index figures which show the upwards or downwards of financial information results in different time periods (T.Subramanian, 2009).

When the total assets grow, most of the other accounts must also must grow for this reason, we can combined the trend analysis with common size analysis, which mentioned earlier (Whitehurst, 2011).

Exercise

Please compute the trend analysis from above mentioned information via taking the 1999 as the base year and make an interpretation (in thousands) (T.Subramanian, 2009).

Year	Deposits	Advances	Profit
1999	2,05,59,498	97,14,728	3,50,311
2000	2,66,45,251	1,25,50,440	4,06,287
2001	3,19,80,696	1,58,83,495	5,04,020
2002	3,72,99,877	1,77,26,607	5,53,525
2003	4,08,45,783	1,95,99,764	6,37,634
2004	4,40,42,730	2,11,39,869	8,06,755

Solution

Trend Analysis (Base year 1999 = 100)

Year	Deposits		Advances		Profits	
	Amount Rs.	Trend Percentage	Amount Rs.	Trend Percentage	Amount Rs.	Trend Percentage
1999	2,05,59,498	100.0	97,14,728	100.0	3,50,311	100.0
2000	2,66,45,251	129.6	1,25,50,440	129.2	4,06,287	115.9
2001	3,19,80,696	155.5	1,58,83,495	163.5	5,04,020	143.9
2002	3,72,99,877	181.4	1,77,26,607	182.5	5,53,525	150.0
2003	4,08,45,783	198.7	1,95,99,764	201.8	6,37,634	182.0
2004	4,40,42,730	214.2	2,11,39,869	217.6	8,06,755	230.3

2.2.3. Ratio Analysis

Financial ratios analysis is used to calculations in order to avoid the problems arise when comparing the different size of companies. These ratios help to examine and compare the relationships among the divided parts of financial information. Usage of ratios analysis help us to eliminate the size problems of the companies since the size is divided. In this way, we have the percentages and multiples on hand (Whitehurst, 2011).

Financial Ratios have been used in many cases within a company. Nevertheless, the most important case is the performance assessment. To give an example, the managers are mostly evaluated or compensated by the investors or the owners on based of accounting performance results like profit margin and/or return on equity ratios. In addition, the companies with multiple division could compare themselves with the competitors in the same field with using the information reported on the financial statement which is also very practical for making new projections for the future as well as checking how realistic was the assumptions made by the companies (Westerfield, Jaffe, Roberts and Ross 2015:92).

The accounting data capability sometimes seems to be axiomatically by plenty of accountants; however, it explores how accounting datas have been used. The growing paths of financial ratio analysis is differs from creditors point of view to managerial perspectives. While the managers mostly emphasizes with profitability measures, the creditors emphasized measures of ability to pay (Horrigan, 1968: 284-294).

There is a doubt in financial ratio discussions simply because a ratio means dividing a number to another one which means that a plenty of possible ratios could be reached and examined. Everybody or each company can have its favourite ones (Whitehurst, 2011).

In order to examine and describe the economic activities we can also utilize the financial ratios. For this reason, we should first evaluate the predictive power of ratios. Interest earned ratio and the net profit to sales ratios are effective predictors default experience according to Hickman in the case of corporate bond during 1900-1943, but Saulnier and some others stated that borrowing companies with weak current ratios as well as the net worth to debt ratios are more likely to have loan defaults (Horrigan, 1968: 284-294).

There is a doubt about the definition of the ratios simply because different experts and the sources could may not define the ratios in the same way. Thus the definition we use here quite likely to be different from the ones you have seen or may will see elsewhere. For all these reasons when using the ratios for an analysis make sure that you are documented the calculation way for each of the ratios and when even comparing the figures to the other sources figures also be sure about the way these figures are computed.

Financial ratios are generally expressed as percentages per time periods.

1. A company's capability to meet its current obligations is measured via Liquidity ratio. It can simply measure the efficiency of utilization of current assets and liabilities.
2. The Leverage (Borrowing capacity) ratio is used for the measuring the protection level of long term funds suppliers.
3. Profitability ratio is used to measuring the earning ability of the company.
4. Investors are interested in a special group of ratios, in addition to liquidity, debt, and profitability ratios.
5. The profitability, liquidity or borrowing capacity could be indicated via Cash flow ratios.

Any pair of numbers could be used for calculating a ratio. With taking the wide range of variables stated on the financial statement into consideration, plenty of meaningful ratios could

be reached. There is not either a standard list of ratios or standard of computation of them. There could be different lists of financial ratios and different formulas for the same ratios on each source. Comparisons of the ratios could be interpreted (1) prior ratios, (2) ratios of competitors, (3) industry ratios, and (4) predetermined standards. It should be underlined that the trend of a ratio and the variability of it are the key issues (Gibson, 2009).

When the financial statements are made up then the ratio analysis becomes a tool of analysts (Smith, 1989).

2.2.3.1.1. List of Financial Ratios

It is possible to classify the financial ratios which measure: management efficiency, liquidity, profitability, leverage, and valuation & growth.

Various financial ratios are listed below. It should be taken into consideration that the ratios could also be commuted in percentages by multiplying the decimal number by 100%. The definition of the main ratios are listed below.

a. Profitability Ratios

- **Gross Profit Rate = Gross Profit ÷ Net Sales**

Shows the gross profit comes from sales. Net sales minus cost of sales is equal to gross profit.

- **Gross Profit Margin = (Gross Profit ÷ Net Sales) * 100**

It is the expression of gross profit in percentage.

- **Return on Sales = Net Income ÷ Net Sales**

It is also called as net profit margin (rate) which is used to measure the percentage of income from sales. It is better to have it as high as possible.

- **Return on Assets = Net Income ÷ Average Total Assets**

This is the measurement of return on investment (ROA). This ratio is used in financial analysis for the aim of evaluating the management if they are successful to generate income via using assets.

- **Return on Stockholders' Equity = Net Income ÷ Average Stockholders' Equity**

It is the measurement of financial performance.

b. **Liquidity Ratios**

- **Current Ratio = Current Assets ÷ Current Liabilities**

Assesment of the company's capability of paying its short-term obligations via usage of current assets.

- **Acid Test Ratio = Quick Assets ÷ Current Liabilities**

It is also called as "quick ratio", which company's capability of paying its short term obligations via usage of more liquid types of current assets such as cash and current receivables.

- **Cash Ratio = (Cash + Marketable Securities) ÷ Current Liabilities**

Measurement of the company's capability of paying its current liabilities via usage of cash and marketable securities.

- **Net Working Capital = Current Assets - Current Liabilities**

Determines if the company's current assets covers its current obligations and if there is any excess or deficiency.

c. **Management efficiency Ratios**

- **Receivable Turnover = Net Credit Sales ÷ Average Accounts Receivable**

This is the measurement of the effectiveness of credit extending and collecting the new ones. It shows an average time of the year that a company can collect its open accounts. High ratios show the efficiency.

- **Days Sales Outstanding = 360 Days ÷ Receivable Turnover**

It is also called both "receivable turnover in days" or "collection period". It is used to measure the number of days that a company can collect its receivables. The shorter is the better.

- **Inventory Turnover = Cost of Sales ÷ Average Inventory**

This ratio shows the times that inventory is sold and replaced. A high ratio means an efficient inventory management. The shorter ratio is the better.

- **Days Inventory Outstanding = 360 Days ÷ Inventory Turnover**

It is also called as "inventory turnover in days". Showing the number of days starting from purchasing to sales. The shorter ratio is the better.

- **Accounts Payable Turnover = Net Credit Purchases ÷ Ave. Accounts Payable**

This ratio shows the length of time that a company pays its accounts payable during a period. The lower ratio is the better.

- **Days Payable Outstanding = 360 Days ÷ Accounts Payable Turnover**

It is also called as "accounts payable turnover in days", "payment period". This ratio is used to measure the average number of days spent before paying obligations to suppliers. The longer the ratio is the better.

- **Operating Cycle = Days Inventory Outstanding + Days Sales Outstanding**

This ratio is used to measure the number of days that a company fully complete one operating cycle. A shorter operating cycle period means that the company can sale and collects cash faster.

- **Cash Conversion Cycle = Operating Cycle - Days Payable Outstanding**

CCC ratio is used to measure how fast a company converts cash into more cash. It shows the days that a company spends for purchasing, selling them and finally collecting the due amounts. The shorter is the better.

- **Total Asset Turnover = Net Sales ÷ Average Total Assets**

This ratio is used to measure the efficiency of a company that is generating sales via usage of its assets.

d. **Leverage Ratios**

- **Debt Ratio = Total Liabilities ÷ Total Assets**

This ratio shows the part of company assets which is financed via debt from third partis.

- **Equity Ratio = Total Equity ÷ Total Assets**

This ratio shows the part of company's total assets which is provided by equity.

- **Debt-Equity Ratio = Total Liabilities ÷ Total Equity**

This ratio shows the capital structure of a company. If the ratio is bigger than one it means that the company is leveraged but if it is smaller than one it means that the company is conservative.

- **Times Interest Earned = EBIT ÷ Interest Expense**

This ratio is used to measure company's ability to pay its interest expenses via usage of its own profit.

e. **Valuation and Growth Ratios**

- **Earnings per Share = (Net Income - Preferred Dividends) ÷ Average Common Shares Outstanding**

This ratio (EPS) shows the rate of earnings per share.

- **Price-Earnings Ratio = Market Price per Share ÷ Earnings per Share**

This ratio is used to show if the share is over or under priced in the common stock. A low *P/E ratio* means that the company is under-priced.

- **Dividend Pay-out Ratio = Dividend per Share ÷ Earnings per Share**

This ratio is used to show the portion of net income that is distributable to the shareholders.

- **Dividend Yield Ratio = Dividend per Share ÷ Market Price per Share**

This ratio is used to measure the percentage of return through dividends.

- **Book Value per Share = Common SHE ÷ Average Common Shares**

This ratio is used to indicate the value of shares based on historical cost (Accountingverse, 2018).

3. CHAPTER THREE: Steel Industry

When Iron is combined with carbon, recycled steel and small amounts of other elements, it is transformed into a much stronger material called steel used in a huge range of human made applications. Steel can be thousand times stronger than iron. Steel is alloy of iron and carbon containing less than 2% carbon, 1% manganese and small amounts of silicon, phosphorus, sulphur and oxygen. Stainless Steel is a steel alloy with a minimum 10, 5% chromium content by mass. All steel is originally made from Iron. Iron is the 4th most common element in the Earth's crust after oxygen (46%), silicon (28%), and aluminium (8%). When liquid iron is converted into steel, it reaches temperatures of up to 1.700 Celcius degree, significantly hotter than volcanic lava. Henry Bessemer who is a British Inventor was invented the first mass-produce steel technique in mid 1850s. Steel producing technologies still used today are derived from Bessemer process of blowing air through molten pig iron. Moreover, oxidise the material and separate impurities. There are two main ways to steel production the first is the Blast Furnace - Basic Oxygen Furnace (BF-BOF) route and the second is Electric Arc Furnace (EAF) route. 72% of today's, steel production is generated via using BF-BOF route. 28% is produced via the EAF route. Crude steel is then rolled into finished steel products, such as coil, plate, sections or bars. Steel is the most commonly used metal in the world. It is everywhere in our lives (Worldsteel, Date Accessed: 18.05.2019).

As the improvements of living standards is what the nations over the world are looking for and lifting their populations from poverty to wealth show us that the increasing demand of steel would be inevitable. Although it points the needs of these days economic environment, the steel industry looks beyond the difficulties over the horizon. In the future, the humanity will need the materials that are both stronger and meets the environmental standards such as steel. The new generation of the steel is being developed continuously so the manufacturers would be able to produce solid and light designs. Since there is no other material, which has the futures of strength, formability and versatility as steel, it is unique and critical. It could be said that the society depends on steel even if it is not been aware of. The humanities success of survive the difficulties faced as if climate change in the future, water distribution etc depend on steel applications (Worldsteel, Date Accessed: 18.05.2019).

It cannot be denied that the steel plays critical roles in today's modern world from transportation (the rails, roads and vehicles) to the place that we live and work with a strong framework and connections. Beside them steel also delivers our water as well as the food supply. Simply the steel one of the main component of growing technologies.

For all these reasons, the steel production is one of the most important production case over the world. Turkey is also the one among the top ten steel producers in the world.



Figure 1. World Crude steel Production

(TÇÜD, 2019)

* Turkey has maintained 8th rank in the world crude steel production 0,6% decrease has been recorded compared to production of 37,5 Mt as of the last year.

The World Crude Steel Production amounts are listed as detailed below based on the countries among the last decade.

Table 5. Total Crude Steel Production of the World

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Austria	7 594	5 662	7 206	7 474	7 421	7 953	7 876	7 687	7 438	8 135
Belgium	10 673	5 635	7 973	8 026	7 301	7 093	7 331	7 257	7 687	7 842
Bulgaria	1 330	726	737	835	633	523	612	543	527	652
Croatia	89	43	95	96	1	135	167	122	0	0
Czech Republic	6 387	4 594	5 180	5 583	5 072	5 171	5 360	5 262	5 305	4 550
Germany	45 833	32 670	43 830	44 284	42 661	42 645	42 943	42 676	42 080	43 297
Finland	4 417	3 066	4 029	3 989	3 759	3 517	3 807	3 988	4 101	4 003
France	17 879	12 840	15 414	15 780	15 609	15 685	16 143	14 984	14 413	15 505
Greece	2 477	2 000	1 821	1 934	1 247	1 030	1 022	910	1 158	1 359
Hungary	2 097	1 403	1 678	1 746	1 542	883	1 152	1 675	1 274	1 901
Italy	30 590	19 848	25 750	28 735	27 252	24 093	23 714	22 018	23 373	24 068
Latvia	635	692	655	568	805	198				
Luxembourg	2 582	2 141	2 548	2 521	2 208	2 090	2 193	2 127	2 175	2 172
Netherlands	6 853	5 194	6 651	6 937	6 879	6 713	6 964	6 995	6 917	6 781
Poland	9 728	7 128	7 993	8 779	8 366	7 950	8 558	9 198	9 001	10 332
Portugal	2 017	1 614	1 543	1 942	1 960	2 050	2 070	2 030	2 010	2 076
Romania	5 035	2 761	3 721	3 828	3 292	2 985	3 158	3 352	3 276	3 361
Slovak Republic	4 489	3 747	4 583	4 236	4 403	4 511	4 705	4 562	4 808	4 974
Slovenia	642	430	606	648	632	618	615	604	613	648
Spain	18 640	14 358	16 343	15 504	13 639	14 252	14 249	14 845	13 616	14 444
Sweden	5 198	2 804	4 846	4 867	4 326	4 404	4 539	4 374	4 617	4 713
United Kingdom	13 521	10 079	9 709	9 478	9 579	11 858	12 120	10 907	7 635	7 491
European Union (28)	198 705	139 436	172 911	177 791	168 589	166 356	169 301	166 115	162 024	168 305
Albania (e)	250	221	390	464	500	550	560	150	50	
Bosnia-Herzegovina	608	519	592	649	700	722	793	819	806	756
Macedonia	253	270	292	386	217	100	188	121	169	273
Montenegro (e)	170	130	130	140	120	70	140	150	120	120 e
Norway	560	595	530	610	700	605	600	590	620	603
Serbia	1 662	1 061	1 254	1 324	346	396	583	955	1 173	1 477
Switzerland	1 312	934	1 320	1 400	1 450	1 530	1 475	1 475	1 500	1 450 e
Turkey	26 806	25 304	29 143	34 107	35 885	34 654	34 035	31 517	33 163	37 524
Other Europe	31 621	29 034	33 650	39 079	39 917	38 627	38 374	35 778	37 601	42 203
Azerbaijan (e)	150	120	120	120	120	173	180	180	180	180e
Byelorussia	2 589	2 417	2 530	2 614	2 687	2 245	2 513	2 510	2 188	2 343
Kazakhstan	4 250	4 146	4 220	4 699	3 676	3 275	3 681	3 910	4 289	4 450
Moldova	885	426	240	313	335	190	351	443	126	455
Russia	68 510	60 011	66 942	68 852	70 209	69 008	71 461	70 898	70 453	71 491
Ukraine	37 279	29 855	33 432	35 332	32 975	32 771	27 170	22 968	24 218	21 334
Uzbekistan	682	716	716	733	736	746	723	643	654	680
C.I.S.	114 345	97 691	108 200	112 663	110 739	108 408	106 079	101 552	102 108	100 933
Canada	14 945	9 292	13 009	12 891	13 507	12 417	12 730	12 473	12 646	13 614
Cuba	279	267	278	282	277	322	256	284	244	221
El Salvador	71	56	64	97	72	118	121	124	100	96
Guatemala	250	224	274	294	334	385	395	403	314	294
Mexico	17 209	14 132	16 870	18 110	18 073	18 242	18 930	18 218	18 824	19 924
Trinidad and Tobago	489	417	572	603	628	616	487	591	36	
United States	91 895	59 384	80 495	86 398	88 695	86 878	88 174	78 845	78 475	81 612
North America	125 138	83 772	111 562	118 675	121 586	118 978	121 093	110 938	110 638	115 761

Table 5. (continued)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Argentina	5 541	4 013	5 138	5 611	4 995	5 186	5 488	5 028	4 126	4 624
Brazil	33 716	26 506	32 948	35 220	34 524	34 163	33 897	33 256	31 275	34 365
Chile	1 549	1 308	1 011	1 615	1 671	1 323	1 079	1 112	1 153	1 158
Colombia	1 053	1 052	1 208	1 287	1 302	1 236	1 208	1 211	1 272	1 253
Ecuador	128	259	372	463	425	570	667	720	576	561
Paraguay	83	54	59	30	44	45	47	48	35	24
Peru	1 110	718	880	877	981	1 069	1 078	1 082	1 168	1 207
Uruguay	86	57	65	81	78	91	94	97	61	58
Venezuela	4 224	3 808	2 207	2 980	2 359	2 139	1 485	1 345	553	444
South America	47 490	37 776	43 888	48 165	46 379	45 822	45 043	43 899	40 220	43 693
Algeria	619	597	662	551	557	417	415	650	650	650
D.R. Congo (e)	30	30	30	30	30	30	30	30	30	30 e
Egypt	6 198	5 541	6 676	6 485	6 627	6 754	6 485	5 506	5 036	6 870
Ghana (e)	25	25	25	25	25	25	25	25	25	25 e
Kenya (e)	20	20	20	20	20	20	20	20	20	20 e
Libya	1 137	914	825	100	315	712	712	352	492	422
Mauritania (e)	5	5	5	5	5	5	5	5	5	5 e
Morocco	478	499	485	654	539	558	501	516	520	550
Nigeria (e)	100	100	100	100	100	100	100	100	100	100 e
South Africa	8 246	7 484	7 617	7 546	6 938	7 162	6 412	6 417	6 141	6 301
Tunisia	82	155	150	150	150	150	150	50	50	50 e
Uganda (e)	30	30	30	30	30	30	30	30	30	30 e
Africa	16 970	15 400	16 624	15 696	15 337	15 963	14 885	13 701	13 099	15 053
Iran	9 964	10 908	11 995	13 197	14 463	15 422	16 331	16 146	17 895	21 236
Israel (e)	300	300	300	300	300	300	300	300	300	300 e
Jordan (e)	150	150	150	150	150	150	150	150	150	150 e
Oman (e)				200	300	500	1 500	2 000	2 000	2 000 e
Qatar	1 406	1 448	1 970	2 038	2 145	2 236	3 019	2 593	2 521	2 644
Saudi Arabia	4 667	4 690	5 015	5 275	5 203	5 471	6 291	5 229	5 461	4 831
Syria (e)	70	70	70	70	10	10	5	5	5	5 e
United Arab Emirates	90	200	500	2 000	2 408	2 878	2 390	3 006	3 149	3 309
Middle East	16 646	17 766	20 000	23 230	24 979	26 967	29 986	29 429	31 480	34 475
Bangladesh (e)	50	70	78	85	87	84	90	100	100	100 e
China (1)	512 339	577 070	638 743	701 968	731 040	822 000	822 306	803 825	807 609	831 728
India	57 791	63 527	68 976	73 471	77 264	81 299	87 292	89 026	95 477	101 455
Indonesia	3 915	3 501	3 664	3 621	2 254	2 644	4 428	4 854	4 746	5 195
Japan	118 739	87 534	109 599	107 601	107 232	110 595	110 666	105 134	104 775	104 661
D.P.R. Korea (e)	1 300	1 300	1 300	1 300	1 280	1 250	1 250	1 250	1 250	1 250 e
South Korea	53 625	48 572	58 914	68 519	69 073	66 061	71 543	69 670	68 576	71 030
Malaysia	6 423	5 354	5 694	5 941	5 612	4 693	4 316	3 784	2 764	3 215
Mongolia (e)	35	35	35	35	35	40	45	45	50	50 e
Myanmar (e)	25	25	25	25	25	30	35	35	35	35 e
Pakistan (e)	1 000	1 200	1 400	1 592	1 631	1 845	2 423	2 892	3 553	4 966
Philippines	711	824	1 050	1 200	1 260	1 308	1 196	968	1 075	1 378
Singapore	764	664	728	752	688	434	540	501	520	596
Sri Lanka (e)	30	30	30	30	30	30	30	30	30	30 e
Taiwan, China	19 882	15 814	19 755	20 178	20 664	22 282	23 121	21 392	21 751	22 438
Thailand	5 211	3 646	4 145	4 238	3 328	3 579	4 095	3 718	3 825	4 471
Viet Nam	2 250	2 700	4 314	4 900	5 298	5 474	5 847	5 647	7 811	11 473
Asia	784 090	811 866	918 449	995 457	1 026 801	1 123 646	1 139 222	1 112 873	1 123 948	1 164 070
Australia	7 625	5 249	7 296	6 404	4 893	4 688	4 607	4 925	5 259	5 328
New Zealand	799	765	853	844	912	900	859	793	577	657
Oceania	8 424	6 014	8 149	7 248	5 805	5 588	5 466	5 717	5 837	5 985
World	1 343 429	1 238 755	1 433 433	1 538 003	1 560 131	1 650 354	1 669 450	1 620 001	1 626 954	1 690 479

* - Includes all qualities: carbon, stainless, and other alloy.

(World Steel Association,2018)

(1) - 2013-17 figures are not necessarily comparable with earlier data. (World Steel Association, 2018)

Climate change and raw materials issues are the two major concerns of global steel industry. In order to catch the attention on these issues, four building blocks have been established by World Steel for its climate change policy, which have policy implications for governments. These are 1) reducing the CO₂ volume of steel 2) sharing the best practices applied in steel industry 3) R & D on the new technologies 4) expanding the steel usage to save the energy in many cases in order to minimize the climate change impacts. The next issue is namely raw materials; the stability of its supply is the key for the industry. Both the Iron ore and the coking coal are essential materials. Supply cost of those two materials seem to be more than a half of the overall steelmaking production cost (Turkofamerica, Date Accessed: 30.06.2019).

3.1. The American Steel Industry

The narrative starts with the 1830s, when the American iron and steel industry resembled the traditional Old World iron sectors, and it ends with 2001. In this period, steel, an alloy of iron and carbon, became the most commonly used metal in the world. Its very size and position give the steel industry an unusual relevance to modern society (Rogers, 2009).

The 1920s was a period of stability with four major changes. First, growth continued with total production rising by 34 percent between 1920 and 1929. Second, a much more efficient method of rolling sheet steel was developed. It was facilitated by the growth of the automobile, appliance, and container industries. Third, some of the smaller firms began to threaten the dominance of U.S. Steel. Fourth, a Federal Trade Commission action ended the basing point pricing system, which may have led to more competitive pricing. The experience of the steel industry in the 1930s reflected the wretched state of the economy during the Great Depression. Between 1929 and 1932, real gross domestic product (GDP, in 2007 dollars) dropped 25.6 percent from \$950.9 billion to \$707.4 billion. This resulted in over a 75 percent drop of steel production. After 1932, both the economy and the steel sector recovered but only slowly, and with some setbacks (Rogers, 2009).

The American steel industry in World War II. This period encompasses the years 1940 to 1945. Before going into detail, however, it is useful to discuss certain general conditions prevailing in steel at this time. Far more airplanes, ships, and, of course, armaments were produced during the war than at any other time in history. To meet the demands of the war, the

Industry increased its output. Furthermore, a much different composition of steel products than during the peacetime economy was required, but the change was temporary.

At the end of World War II, the US government sifted the price controls of steel products and the steel prices are fixed under a new system, which was published by US Steel and base prices for steel products were, scheduled (Farr, 2003).

Taking the years from 1970 to 1989 into consideration, it can be said on the steel industry that, this was a time of falling production, plant closings, and layoffs. These events occurred in the face of a growing economy – especially in the late 1980s. 1990 and 2001 could be called as the next period. Until its very end, this was a period of stability with minor fluctuations in production, but there were signs of trouble. The minimills continued to grow and expand into new products. This boded especially ill for integrated companies. In addition, other countries ran into economic difficulties thereby cutting off their demand for steel. This led to increased exports to the United States, often making minimill companies just as vulnerable to import competition as the integrated firms (Rogers, 2009).

America's steel industry has become the world's most competitive, environmentally progressive and sustainable industry with the transformation of innovation and technology. The productivity of steel has increased more than three times since 1980s and which makes USA stronger in the modern world. Steelmaking process is the transformation of modern technologies. There are two main routes for steelmaking; the first is the The Basic Oxygen Furnace (BOF) and the other route is the production on Electric Arc Furnace (EAF). For the BOF steelmaking, the process starts with blast furnace where the iron ore is combined with coke and the hot air and so the molten iron is produced which is also called as pig iron. Then the pig iron is combined with scrap and flux in a furnace after that the oxygen blown into the furnace in order to remove the carbon (American Iron and Steel Institute, Date Accessed:30.06.2019).

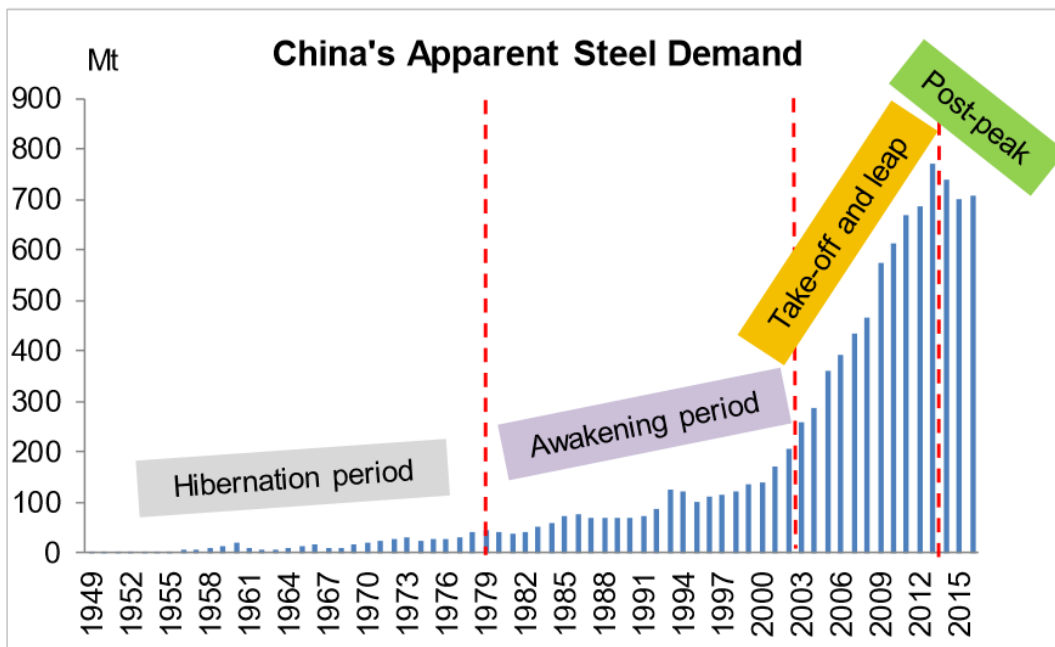
The iron and steel industry in America is an essential part of its economy with about \$520 billion in economic output as well as approximately two million jobs in 2017 (American Iron and Steel Institute, Date Accessed:30.06.2019).

3.2. The Chinese Steel Industry

The Chinese economy has been growing continuously since the market based economic reforms started to be applied in 1978. Chinese economy has shown a strong growth with an average growth rate of approximately 10% annually. The steel production level of China has also been expanded sharply during this period with a average growth rate of approximately 7%, 10% and 20% respectively in 1980s, 1990s and 2000s annually (James Holloway, 2010).

General view about global steel industry development: it is inevitable that the industry is facing a big change and seeing the big player's gets even stronger. However, there is not any prediction that any country would be able to replace China's position in the near future (World Steel Association, 2018).

China's steel industry development is divided into four phases in the context of the economic development. We are now at post-peak era after a short period of take-off period; the time of high-speed growth is now over.



Source: World Steel Association, 2018.

It can be seen on the above table that while the production and consumption grew by only 14% and 30% in the past 15 years in the rest of world, it has jumped by 3.4 times and 2.4 times, respectively in China. China has taking 86% of the worlds steel production and 70% in consumption (World Steel Association, 2018).

China has been driving the iron ore market of the world; the increase of 1020 mt iron ore trade of the world in the past 15 years, the 94% of it comes from China. New steel capacity of China is based on BF-BOF route production.

Nowadays China and all the rest of the world have been focusing on the global warming and energy security issues. For this reason, it is very important to be successful on energy conversation issue in the steel industry as well in case of a failure on that the steel industry will have an incredible cost on national energy conservation as well as the environmental protection (Lin, 2011: 3680).

3.3. The Turkish Steel Industry

Turkey is called as the regional trading centre. Its location is strategically important since it is crossroads of Europe, Asia, Africa and the Middle East while it is also a natural bridge between both East-West and North-South axes. Taking these geographical advantages into consideration, Turkey can provide an efficient and cost effective outlet to leading steel markets.

Turkish steel is such a material that is one of the most efficient construction materials of modern times and used in many prestigiouse projects including bridges, tunnels, trains, airplanes, ships and car bodies and high-rise buildings, in both the construction and transportation sectors. Some examples of the projects that used the Turkish steel among the world are;

- The tallest building of the world namely Burj Khalifa building in Dubai (at 828 meters,
- Dubai underground project,
- Turkey- Greece natural gas pipeline,
- Baku-Tbilisi-Ceyhan crude oil pipeline (Turkish Steel Cluster, 2019).

The Iron and Steel industry in Turkey is one of the oldest industries in the country, dating back to the 1930s, the etatist years. Turkey is the third largest producer in Europe and number 11 in the world classification of 61 countries. Economic datas and sectors' growth numbers are verifying the reality that in medium term period, Turkey is going to be 8th largest producer in the world by surpassing Ukraine, Brazil and Italy. In 2003, economy has grown five, 9%, followed by 9, 9% in 2004, 7, 6% in 2005, 6% in 2006, 4, 7% in 2007 and 1, 1% in 2008 (Man of Steel, 2011).

The first integrated steel mill, the Karabuk Iron and Steel Factory. Turkey's first integrated iron and steel factory Kardemir was established as one of the national industrialization attempts of the founder of our republic; Mustafa Kemal Atatürk. Kardemir actualised the project designing, manufacturing and installation of a large number of major industrial plants by leading our country's industrial enterprises. Therefore; Kardemir is known in Turkey as "the factory establishing factories" and memorialized by this name (Kardemir, 2019) . It was opened with a capacity of 150.000 tons per year in 1939. It became a State Economic Enterprise in 1955, and was renamed "Karabuk Demir Celik Sanayi ve Ticaret A.S." (KARDEMIR). In 1995, the company was privatized and acquired by its workers.

In 1965, Ereğli Demir Çelik Fabrikalari AS. (ERDEMİR) was established as a State Economic Enterprise to produce flat steel product.

When taking the increasing production capacity, export potential and the inputs it provides to other sectors into consideration, it could be easily said that the iron and steel sector in Turkey has a huge importance in the country's general manufacturing performance. Turkey was ranked with the 11th place in the world with a production of 26.8 million tons of raw steel in 2008 and in 3th place in Europe among the total produced iron and steel. Within the scope of export volume, the iron and steel industry is also important, as it is the third ranking sector. Turkey is in a position of a net exporter for the case of long steel while it is a net importer of the flat product as well as the special quality steel products. The low labor costs are seemed to be the advantage of this sector comparing to its competitors, but it also in an ineligible position regarding to energy and input costs (Republic of Turkey Ministry of Industry and Trade, Date Accessed: 03.07.2019).

The production growth of world steel industry showed a downtrend by 6.8 % in 2011 after compensating the all losses arised due to the crisis period with a growth of 15 %. It was observed that the Chinese effects over the growth of world steel industry has been continuing to ease comparing to previous years. Surprisingly the steel production level of China stayed around 9-10 % after continuously growht by around 20 % in 2000s. Although the world crude steel production growth decreased from 15 % to 6.8 % in 2011, Turkey conversely had achieved 2 percentages increase in its production growth level with 17% compared to year before, which was almost twice as much the Turkish economy growth and this placed Turkey on the top growing country among the 30 largest steel producers. Turkey's highest crude steel production level was reached and recorded as 34.1 million tons in 2011 up by 17 % yoy. It was the high production growth level not only in Turkey but also the highest level among the top ten steel producers of the world. Billet production level of Turkey grew by 11.8 % to 24.4 million tons in 2011. With the support of new capacities came into operations, slab production level has continued its sharp rise by 33 % to 9.7 million tons after growing by 53 % in 2010 (Turkeximbank, Date Accessed: 05.05.2019).

Slowing steel demand in China has caused Chinese exports to increase fiercely, putting more pressure on prices in our region. Turkish integrated steel companies have been able to keep their costs low since 2H13 on declining international raw material prices due to slowing Asian demand for iron ore and coking coal on lower steel production. With further slowdowns in demand and helped by further declines in raw materials, Chinese producers have turned to export markets and put pressure on steel prices worldwide. While the Chinese producers export little to Turkey, they have been increasing their exports to some of the markets near Turkey, such as the Middle East, while offering highly competitive prices for Turkish and European markets. Turkish apparent steel demand is likely to grow 3% to 4% in 2015 and 2016 after 1% to 2% growth in 2014. However, Turkey's steel industry will face significant headwinds in terms of pricing on higher direct or indirect competition from Chinese producers. Unlike their scrap-based counterparts, Turkish integrated producers such as Kardemir and Erdemir have experienced strong margin expansion since 2H13 on raw material prices easing significantly faster than sales prices. Yet, this has changed recently and we expect an opposite trend started in 4Q14. While Turkish integrated producers are likely to go through the headwinds better than Turkish minimills, they will see their unit EBITDA (USD/tonne) coming down 15% to 20% y-y with

only a small recovery in 2016. Faced with slowing demand growth, low capacity utilisation rates and weak prices at home, Chinese steel producers turned to exports in 2014. World steel industry capacity utilisation stood at 75%, only up 1ppt y-y and this has largely been enabled by Chinese steel producers turning to export markets. Chinese steel exports rose 83% y-y to 7.8m tonnes in November 2014, accounting for about 8% of world steel production, nearly double yoy (Paksoy, 2014).

3.4. Financial Analysis in Steel Industry

There are some macro economic determinants which have impacts in the steel industry, such as;

- **GDP (Gross Domestic Products):** This is an initial way to measure the health of the economy. When examining the GDP growth level over the next 12 years, it is seen as 6 - 6.5% and the steel demand elasticity with a level of 1.1
- **Changing Energy Prices:** Assuming that the natural gas prices stays in the reasonably levels in ket areas such as USA and Middle East, blast furnace construction would be lower while steel scrap production would be higher.
- **Availability of raw materials and iron ore:** The availability of the raw material namely iron ore and coal would always be the vital and it directly impacts the production level.
- **Technological advances:** There is a revolution expectation on technology for the steel industry as a result of global researches, especially for the increasing environmental standars. In the line with the technological changes and improvements, the demand for lighter and stronger steel would be required. These requirements would be possible with high capital expenditures, which is not possible to afford it for most of the steel producers in such a short time.
- **Steel scrap in China:** rising level of surplus steel scrap in China would be able to turn the metallic balance situation upside-down through the world. The availability of Obsolete steel scrap level is expected to increase shaprly by 2025 (World Docslide, 2015).

3.4.1. Condensed Financials of Leading Steel Companies Over the World

As they are not a common currency used all over the world, the steel companies report the financial statements in their national currencies. But when it comes to comparing different companies on a similar based criterias, there would be some misunderstandings or confusions due to the different currencies. For this reason, in order to avoid these difficulties and have a clear understanding of the tables the financials of the leading steel companies namely Kardemir, Erdemir, Arcelor Mittal, Baoshan, Hesteel, Hyundai, Nippon, POSCO, TATA and Wuhan which are examined below in detailed, are all given in USD based. The financial datas of publicly listed companies could be found on BLOOMBERG application either in local currency or in USD.

Table 6. Condensed Financials of Kardemir

Kardemir Karabuk Demir Celik Sanayi ve Ticaret AS (KRDMD)										
In Millions of USD 12 Months Ending	FY 2009 12/31/2009	FY 2010 12/31/2010	FY 2011 12/31/2011	FY 2012 12/31/2012	FY 2013 12/31/2013	FY 2014 12/31/2014	FY 2015 12/31/2015	FY 2016 12/31/2016	FY 2017 12/31/2017	FY 2018 12/31/2018
Market Capitalization	376,6	432,5	354,4	620,6	520,1	1.000,0	426,0	371,9	966,3	469,7
- Cash & Equivalents	2,2	6,7	22,0	71,6	7,5	26,4	91,9	95,9	261,4	53,5
+ Preferred & Other	0,0	0,0	0,0	0,1	0,1	0,0	0,0	0,0	0,0	0,0
+ Total Debt	116,6	184,4	171,2	305,9	392,6	502,0	592,2	595,9	504,6	375,7
Enterprise Value	491,0	610,2	503,6	854,9	905,2	1.475,6	926,3	871,9	1.209,5	791,9
Revenue, Adj	511,8	669,8	948,1	937,1	953,7	1.001,6	822,9	775,3	1.090,7	1.190,5
<i>Growth %, YoY</i>	-26,6	27,1	57,2	6,4	7,4	20,8	1,9	4,7	70,0	40,5
Gross Profit, Adj	-23,8	40,5	184,2	148,8	143,1	235,7	69,3	82,5	184,4	364,4
<i>Margin %</i>	-4,7	6,0	19,4	15,9	15,0	23,5	8,4	10,6	16,9	30,6
EBITDA, Adj	-11,0	62,6	166,0	168,0	154,3	240,2	78,2	167,7	191,1	362,4
<i>Margin %</i>	-2,1	9,4	17,5	17,9	16,2	24,0	9,5	21,6	17,5	30,4
Net Income, Adj	-46,6	14,0	110,7	107,5	52,7	169,2	-7,9	-41,1	68,6	172,5
<i>Margin %</i>	-9,1	2,1	11,7	11,5	5,5	16,9	-1,0	-5,3	6,3	14,5
EPS, Adj	-0,04	0,01	0,10	0,09	0,05	0,15	-0,01	-0,04	0,06	0,15
<i>Growth %, YoY</i>	—	—	691,7	-3,1	-51,0	221,0	—	-414,1	—	151,3
Cash from Operations	19,5	26,8	81,3	147,2	135,4	118,8	192,4	67,8	361,8	21,0
Capital Expenditures	-35,1	-104,0	-79,7	-211,0	-255,5	-270,9	-215,1	-69,4	-34,6	-76,7
Free Cash Flow	-15,6	-77,2	1,7	-63,8	-120,0	-152,1	-22,7	-1,5	327,2	-55,7

Source: Bloomberg Terminal, 2019.

Table 7. Condensed Financials of ERDEMİR

Eregli Demir ve Celik Fabrikalari TAS (EREGL)										
In Millions of USD 12 Months Ending	FY 2009 12/31/20 9	FY 2010 12/31/2010	FY 2011 12/31/2011	FY 2012 12/31/2012	FY 2013 12/31/2013	FY 2014 12/31/2014	FY 2015 12/31/2015	FY 2016 12/31/2016	FY 2017 12/31/2017	FY 2018 12/31/2018
Market Capitalization	4.821,9	5.284,3	3.741,9	4.243,3	4.200,0	6.679,5	3.647,6	5.103,5	9.260,1	4.776,2
- Cash & Equivalents	713,7	1.863,6	585,1	1.025,6	354,0	935,7	1.006,1	1.301,3	1.861,2	1.649,7
+ Preferred & Other	104,9	116,7	106,6	118,3	111,6	131,4	122,6	128,3	143,6	167,8
+ Total Debt	2.790,0	3.789,2	2.535,2	2.476,7	1.627,9	1.460,7	1.020,2	1.111,9	1.185,7	1.156,9
Enterprise Value	7.003,0	7.326,6	5.798,5	5.812,8	5.585,6	7.335,9	3.784,4	5.042,5	8.728,2	4.451,2
Revenue, Adj	3.395,9	4.404,0	5.333,8	5.317,1	5.147,3	5.254,7	4.394,8	3.860,9	5.144,1	5.761,1
<i>Growth %, YoY</i>	-22,7	26,0	34,5	7,3	2,2	17,4	3,7	-2,3	61,0	44,2
Gross Profit, Adj	152,3	876,2	1.239,0	571,6	978,3	1.115,7	760,0	819,6	1.442,9	1.787,8
<i>Margin %</i>	4,5	19,9	23,2	10,8	19,0	21,2	17,3	21,2	28,0	31,0
EBITDA, Adj	247,1	938,5	1.213,8	601,9	988,6	1.140,8	830,0	926,0	1.508,6	1.865,7
<i>Margin %</i>	7,3	21,3	22,8	11,3	19,2	21,7	18,9	24,0	29,3	32,4
Net Income, Adj	-108,1	505,2	599,3	251,2	493,1	740,7	463,3	511,2	1.019,6	1.220,1
<i>Margin %</i>	-3,2	11,5	11,2	4,7	9,6	14,1	10,5	13,2	19,8	21,2
EPS, Adj	-0,03	0,14	0,17	0,07	0,14	0,21	0,13	0,15	0,29	0,35
<i>Growth %, YoY</i>	—	—	18,6	-58,1	96,3	50,2	-37,4	10,3	99,4	19,7
Cash from Operations	517,7	284,5	513,4	896,1	577,4	1.252,8	1.216,7	787,2	1.022,0	952,8
Capital Expenditures	-224,2	-201,4	-252,6	-235,4	-161,0	-151,8	-198,4	-159,0	-205,7	-199,8
Free Cash Flow	293,5	83,1	260,7	660,7	416,4	1.101,0	1.018,2	628,2	816,3	753,0

Source: Bloomberg Terminal, 2019.

Table 8. Condensed Financials of Arcelor Mittal

ArcelorMittal (MT NA)										
In Millions of USD 12 Months Ending	FY 2009 12/31/2009	FY 2010 12/31/2010	FY 2011 12/31/2011	FY 2012 12/31/2012	FY 2013 12/31/2013	FY 2014 12/31/2014	FY 2015 12/31/2015	FY 2016 12/31/2016	FY 2017 12/31/2017	FY 2018 12/31/2018
Market Capitalization	69.615,8	58.741,1	28.358,0	26.443,8	29.573,5	18.192,3	7.015,7	22.632,1	33.246,9	21.055,8
- Cash & Equivalents	5.919,0	6.207,0	3.821,0	4.402,0	6.072,0	3.893,0	4.648,0	3.395,0	2.574,0	2.172,0
+ Preferred & Other	4.353,0	3.670,0	3.787,0	3.450,0	3.380,0	3.074,0	2.298,0	2.190,0	2.066,0	2.022,0
+ Total Debt	24.812,0	26.008,0	26.418,0	26.313,0	22.311,0	19.797,0	19.786,0	13.674,0	12.928,0	12.483,0
Enterprise Value	92.861,8	82.212,1	54.742,0	51.804,8	49.192,5	37.170,3	24.451,7	35.101,1	45.666,9	33.388,8
Revenue, Adj	61.021,0	78.025,0	93.973,0	84.213,0	79.440,0	79.282,0	63.578,0	56.791,0	68.679,0	76.033,0
<i>Growth %, YoY</i>	-51,2	27,9	20,4	-10,4	-5,7	-0,2	-19,8	-10,7	20,9	10,7
Gross Profit, Adj	2.206,0	6.941,0	8.454,0	670,0	4.193,0	5.994,0	3.146,0	6.568,0	8.009,0	9.793,0
<i>Margin %</i>	3,6	8,9	9,0	0,8	5,3	7,6	4,9	11,6	11,7	12,9
EBITDA, Adj	3.468,0	8.385,0	9.920,0	11.541,0	7.055,0	7.324,0	3.922,0	7.292,0	8.408,0	10.240,0
<i>Margin %</i>	5,7	10,7	10,6	13,7	8,9	9,2	6,2	12,8	12,2	13,5
Net Income, Adj	487,0	3.538,8	2.066,8	1.061,8	-1.728,8	-822,8	-3.675,0	1.677,1	4.619,0	5.899,7
<i>Margin %</i>	0,8	4,5	2,2	1,3	-2,2	-1,0	-5,8	3,0	6,7	7,8
EPS, Adj	0,78	4,91	2,48	1,58	-2,26	-1,07	-4,76	1,75	4,51	5,78
<i>Growth %, YoY</i>	-96,8	526,1	-49,5	-36,3	—	52,7	-345,7	—	157,2	28,1
Cash from Operations	7.278,0	4.015,0	1.777,0	5.340,0	4.296,0	3.870,0	2.151,0	2.708,0	4.563,0	4.196,0
Capital Expenditures	-2.709,0	-3.308,0	-4.838,0	-4.717,0	-3.452,0	-3.665,0	-2.707,0	-2.444,0	-2.819,0	-3.305,0
Free Cash Flow	4.569,0	707,0	-3.061,0	623,0	844,0	205,0	-556,0	264,0	1.744,0	891,0

Source: Bloomberg Terminal, 2019.

Table 9. Condensed Financials of Baosteel

Baoshan Iron & Steel Co Ltd (600019 CH)										
In Millions of USD 12 Months Ending	FY 2009 12/31/2009	FY 2010 12/31/2010	FY 2011 12/31/2011	FY 2012 12/31/2012	FY 2013 12/31/2013	FY 2014 12/31/2014	FY 2015 12/31/2015	FY 2016 12/31/2016	FY 2017 12/31/2017	FY 2018 12/31/2018
Market Capitalization	24.778,6	16.981,3	13.482,1	13.715,5	11.131,0	18.547,9	14.126,8	15.028,6	29.332,1	20.884,9
- Cash & Equivalents	892,5	1.242,1	2.103,6	1.298,1	1.966,5	2.328,3	2.323,0	4.189,6	5.028,0	3.295,1
+ Preferred & Other	890,9	1.001,0	1.107,1	1.474,5	1.578,5	1.602,4	1.440,2	1.509,3	1.543,0	1.814,7
+ Total Debt	8.733,5	9.480,1	12.744,0	9.901,9	11.102,7	10.519,9	10.760,6	17.950,1	16.717,4	12.111,7
Enterprise Value	33.510,6	26.220,3	25.229,6	23.793,8	21.845,8	28.341,9	24.004,6	30.298,4	42.564,5	31.516,3
Revenue, Adj	21.657,5	29.831,8	34.418,2	30.303,5	30.842,7	30.403,7	26.044,2	37.009,6	42.609,5	45.929,5
<i>Growth %, YoY</i>	-25,8	36,5	10,2	-14,0	-0,8	-1,2	-12,6	50,2	17,0	5,6
Gross Profit, Adj	1.976,0	3.891,0	2.966,8	2.227,0	2.872,6	2.942,7	2.248,0	4.119,7	5.779,8	6.705,7
<i>Margin %</i>	9,1	13,0	8,6	7,3	9,3	9,7	8,6	11,1	13,6	14,6
EBITDA, Adj	3.107,0	4.413,7	3.310,9	2.655,1	2.983,7	3.039,5	2.264,6	4.941,8	6.537,0	7.211,7
<i>Margin %</i>	14,3	14,8	9,6	8,8	9,7	10,0	8,7	13,4	15,3	15,7
Net Income, Adj	830,6	1.910,5	1.135,9	786,2	1.155,5	1.011,9	328,3	1.460,0	2.724,8	3.215,7
<i>Margin %</i>	3,8	6,4	3,3	2,6	3,7	3,3	1,3	3,9	6,4	7,0
EPS, Adj	0,05	0,11	0,06	0,05	0,07	0,06	0,02	0,09	0,12	0,15
<i>Growth %, YoY</i>	-17,3	130,0	-40,5	-30,5	53,6	-11,2	-67,5	344,7	38,8	17,9
Cash from Operations	3.375,5	2.748,9	1.723,8	3.320,6	1.884,0	4.413,5	3.279,2	2.946,2	4.663,0	6.855,9
Capital Expenditures	-2.669,4	-1.957,3	-2.331,8	-2.244,8	-2.270,4	-3.507,3	-3.816,1	-2.249,5	-1.966,9	-1.930,4
Free Cash Flow	706,1	791,6	-608,0	1.075,9	-386,4	906,2	-536,8	696,8	2.696,0	4.925,5

Source: Bloomberg Terminal, 2019.

Table 10. Condensed Financials of Hesteel

Hesteel Co Ltd (000709 CH)										
In Millions of USD 12 Months Ending	FY 2009 12/31/2009	FY 2010 12/31/2010	FY 2011 12/31/2011	FY 2012 12/31/2012	FY 2013 12/31/2013	FY 2014 12/31/2014	FY 2015 12/31/2015	FY 2016 12/31/2016	FY 2017 12/31/2017	FY 2018 12/31/2018
Market Capitalization	7.141,6	3.892,5	4.820,7	4.564,2	3.508,9	6.551,7	5.450,5	5.110,6	6.364,6	4.384,2
- Cash & Equivalents	1.634,2	849,6	1.427,0	1.206,8	1.495,3	1.700,4	1.488,8	1.072,4	1.374,6	2.537,0
+ Preferred & Other	214,9	234,6	326,0	325,4	368,6	356,4	305,6	260,8	281,6	1.535,5
+ Total Debt	6.840,2	8.853,7	10.784,7	12.155,7	14.800,9	14.940,4	15.842,8	15.994,0	17.799,8	17.027,1
Enterprise Value	12.562,5	12.131,2	14.504,4	15.838,5	17.183,1	20.148,2	20.110,1	20.293,0	23.071,3	20.409,8
Revenue, Adj	12.732,1	18.412,1	20.603,9	17.663,9	17.915,3	15.928,3	11.611,8	11.181,9	16.067,0	18.188,8
<i>Growth %, YoY</i>	-23,0	43,3	6,9	-16,3	-1,2	-10,9	-25,6	1,8	46,1	10,9
Gross Profit, Adj	757,3	1.313,1	1.640,4	1.433,7	1.505,3	1.718,8	1.527,5	1.504,9	1.918,2	2.505,4
<i>Margin %</i>	5,9	7,1	8,0	8,1	8,4	10,8	13,2	13,5	11,9	13,8
EBITDA, Adj	791,8	1.247,2	1.440,3	1.265,9	1.491,4	1.319,9	1.474,9	1.579,1	1.951,0	2.456,1
<i>Margin %</i>	6,2	6,8	7,0	7,2	8,3	8,3	12,7	14,1	12,1	13,5
Net Income, Adj	133,9	259,7	225,2	18,5	12,1	117,2	91,5	261,5	365,0	542,1
<i>Margin %</i>	1,1	1,4	1,1	0,1	0,1	0,7	0,8	2,3	2,3	3,0
EPS, Adj	0,02	0,02	0,02	0,00	0,00	0,01	0,01	0,02	0,03	0,05
<i>Growth %, YoY</i>	-60,2	25,7	-13,3	-91,8	-34,4	866,1	-21,9	185,8	39,6	48,5
Cash from Operations	399,8	42,0	2.300,3	272,2	1.241,5	1.639,7	1.843,4	-215,9	1.927,3	1.030,4
Capital Expenditures	-1.363,5	-1.785,9	-1.146,0	-1.819,1	-1.819,0	-1.275,8	-2.029,4	-1.594,2	-2.013,6	-1.679,6
Free Cash Flow	-963,7	-1.743,8	1.154,3	-1.546,9	-577,5	363,9	-185,9	-1.810,1	-86,4	-649,2

Source: Bloomberg Terminal, 2019.

Table 11. Condensed Financials of Hyundai Steel

Hyundai Steel Co (004020 KS)										
In Millions of USD 12 Months Ending	FY 2009 12/31/2009	FY 2010 12/31/2010	FY 2011 12/31/2011	FY 2012 12/31/2012	FY 2013 12/31/2013	FY 2014 12/31/2014	FY 2015 12/31/2015	FY 2016 12/31/2016	FY 2017 12/31/2017	FY 2018 12/31/2018
Market Capitalization	6.240,0	9.304,7	6.960,5	6.956,8	9.498,3	6.731,6	5.537,7	6.194,1	7.207,1	5.334,5
- Cash & Equivalents	1.732,1	2.714,4	2.630,5	956,5	768,5	1.881,3	1.913,7	1.885,7	2.141,1	1.697,9
+ Preferred & Other	95,1	0,0	0,0	70,1	72,2	51,1	123,6	171,9	202,3	208,8
+ Total Debt	5.685,1	7.909,3	8.762,3	9.952,1	12.335,3	11.206,3	11.001,5	9.993,3	10.820,4	10.135,4
Enterprise Value	10.288,1	14.499,5	13.092,4	16.022,5	21.137,4	16.107,7	14.749,0	14.473,6	16.088,6	13.980,8
Revenue, Adj	6.773,1	8.855,9	13.787,1	13.228,4	12.369,0	15.926,1	14.263,3	14.393,6	16.958,9	18.893,0
<i>Growth %, YoY</i>	-23,6	19,1	49,1	-2,4	-9,1	23,9	-3,8	3,5	14,8	8,4
Gross Profit, Adj	790,7	1.300,0	1.638,7	1.299,8	1.232,7	2.205,0	2.149,0	2.122,0	2.152,4	1.883,9
<i>Margin %</i>	11,7	14,7	11,9	9,8	10,0	13,8	15,1	14,7	12,7	10,0
EBITDA, Adj	705,7	1.262,1	1.786,0	1.446,8	1.349,6	2.545,5	2.420,1	2.442,8	2.541,1	2.379,1
<i>Margin %</i>	10,4	14,3	13,0	10,9	10,9	16,0	17,0	17,0	15,0	12,6
Net Income, Adj	614,3	799,1	673,7	705,2	557,7	734,9	709,9	725,0	681,7	411,6
<i>Margin %</i>	9,1	9,0	4,9	5,3	4,5	4,6	5,0	5,0	4,0	2,2
EPS, Adj	7,35	9,52	8,00	8,37	6,60	6,34	5,76	5,54	5,19	3,14
<i>Growth %, YoY</i>	-20,4	29,5	-16,0	4,5	-21,1	-4,0	-9,1	-3,9	-6,2	-39,6
Cash from Operations	1.175,1	-472,2	724,3	1.606,4	588,6	1.839,9	2.719,5	2.515,0	1.521,7	1.432,2
Capital Expenditures	-2.878,8	-1.876,7	-1.641,8	-2.223,2	-2.444,2	-1.001,2	-1.959,8	-1.703,7	-1.062,8	-1.089,2
Free Cash Flow	-1.703,6	-2.348,9	-917,5	-616,8	-1.855,6	838,7	759,7	811,4	459,0	343,0

Source: Bloomberg Terminal, 2019.

Table 12. Condensed Financials of Nippon Steel

Nippon Steel Corp (5401 JT)										
In Millions of USD 12 Months Ending	FY 2009 03/31/2009	FY 2010 03/31/2010	FY 2011 03/31/2011	FY 2012 03/31/2012	FY 2013 03/31/2013	FY 2014 03/31/2014	FY 2015 03/31/2015	FY 2016 03/31/2016	FY 2017 03/31/2017	FY 2018 03/31/2018
Market Capitalization	16.657,6	24.708,0	20.199,0	17.278,9	22.633,7	24.965,2	23.021,3	17.339,6	20.339,5	19.414,6
- Cash & Equivalents	1.379,4	964,0	995,2	790,8	1.012,7	1.093,4	961,7	763,4	833,3	1.092,4
+ Preferred & Other	5.094,4	5.257,9	6.279,4	6.274,2	5.755,2	5.372,2	4.734,2	2.091,1	3.079,5	3.483,7
+ Total Debt	14.637,1	14.809,1	16.151,7	15.545,2	26.956,6	22.258,1	16.466,5	17.840,5	18.902,6	19.478,4
Enterprise Value	35.009,6	43.811,0	41.635,0	38.307,6	54.332,8	51.502,0	43.260,4	36.507,7	41.488,2	41.284,3
Revenue, Adj	47.659,1	37.607,3	48.089,5	51.847,7	53.128,2	55.080,8	51.288,1	40.911,4	42.856,4	51.164,4
<i>Growth %, YoY</i>	-1,2	-26,9	17,8	-0,5	7,3	25,7	1,7	-12,5	-5,6	22,4
Gross Profit, Adj	6.635,0	3.571,4	5.672,6	5.225,4	4.932,4	7.547,6	7.389,2	5.160,7	5.246,0	6.313,9
<i>Margin %</i>	13,9	9,5	11,8	10,1	9,3	13,7	14,4	12,6	12,2	12,3
EBITDA, Adj	6.172,7	3.447,6	5.368,7	4.610,7	3.811,4	6.389,6	6.204,4	3.997,4	3.912,6	4.764,5
<i>Margin %</i>	13,0	9,2	11,2	8,9	7,2	11,6	12,1	9,8	9,1	9,3
Net Income, Adj	1.873,3	34,0	1.503,5	996,8	247,0	2.169,8	1.973,2	1.016,5	1.206,2	1.853,7
<i>Margin %</i>	3,9	0,1	3,1	1,9	0,5	3,9	3,8	2,5	2,8	3,6
EPS, Adj	3,04	0,05	2,31	1,58	0,32	2,38	2,16	1,11	1,36	2,10
<i>Growth %, YoY</i>	-32,2	-98,2	4.186,1	-31,6	-79,7	640,9	-9,3	-48,7	22,9	54,1
Cash from Operations	1.274,4	4.719,3	4.323,6	3.008,9	3.791,9	5.739,2	6.500,1	4.693,1	4.479,9	4.141,5
Capital Expenditures	-2.953,4	-3.663,7	-3.695,8	-3.269,8	-4.233,6	-3.189,4	-2.962,8	-2.489,9	-2.977,5	-3.638,0
Free Cash Flow	-1.679,1	1.055,6	627,9	-260,9	-441,7	2.549,8	3.537,3	2.203,3	1.502,4	503,5

Source: Bloomberg Terminal, 2019.

Table 13. Condensed Financials of POSCO

POSCO (005490 KS)										
In Millions of USD 12 Months Ending	FY 2009 12/31/2009	FY 2010 12/31/2010	FY 2011 12/31/2011	FY 2012 12/31/2012	FY 2013 12/31/2013	FY 2014 12/31/2014	FY 2015 12/31/2015	FY 2016 12/31/2016	FY 2017 12/31/2017	FY 2018 12/31/2018
Market Capitalization	41.109,0	33.330,4	25.329,5	25.342,7	24.741,8	20.161,1	11.327,2	17.052,6	24.921,4	17.458,6
- Cash & Equivalents	10.811,3	5.675,1	5.359,5	6.017,0	6.563,3	4.614,6	7.315,3	6.251,3	8.915,9	9.531,4
+ Preferred & Other	623,8	1.557,4	1.850,7	2.785,0	3.338,5	3.226,6	3.171,8	2.800,5	3.412,7	2.933,5
+ Total Debt	10.571,6	18.818,7	23.175,3	23.474,0	24.979,9	25.134,9	21.483,3	18.890,4	19.821,7	18.234,3
Enterprise Value	41.493,2	48.031,3	44.996,0	45.584,7	46.496,9	43.907,9	28.667,0	32.492,2	39.239,9	29.094,9
Revenue, Adj	29.045,3	41.432,9	62.286,7	56.493,4	56.544,7	61.850,6	51.449,7	45.775,5	53.670,4	59.076,2
<i>Growth %, YoY</i>	-11,7	29,9	44,0	-7,7	-2,7	5,2	-10,6	-8,8	14,3	7,1
Gross Profit, Adj	4.584,8	7.064,3	8.235,4	6.627,1	6.270,1	6.920,0	5.777,1	5.768,6	7.393,7	7.248,3
<i>Margin %</i>	15,8	17,1	13,2	11,7	11,1	11,2	11,2	12,6	13,8	12,3
EBITDA, Adj	5.065,0	7.426,8	7.053,9	5.521,8	5.193,1	6.130,2	4.976,2	5.224,1	7.007,3	8.010,0
<i>Margin %</i>	17,4	17,9	11,3	9,8	9,2	9,9	9,7	11,4	13,1	13,6
Net Income, Adj	2.717,8	3.633,7	3.121,1	2.356,1	1.480,0	770,9	764,0	1.472,5	2.335,5	2.450,4
<i>Margin %</i>	9,4	8,8	5,0	4,2	2,6	1,2	1,5	3,2	4,4	4,1
EPS, Adj	35,45	47,17	40,40	30,50	18,97	9,66	9,55	18,41	29,19	30,63
<i>Growth %, YoY</i>	—	33,1	-14,4	-24,5	-37,8	-49,1	-1,1	92,7	58,6	4,9
Cash from Operations	6.803,5	3.099,2	1.528,3	6.501,2	4.440,4	3.241,9	6.721,0	4.544,0	4.961,6	5.336,6
Capital Expenditures	-5.048,9	-5.011,1	-4.816,6	-6.265,9	-6.004,7	-3.330,7	-2.263,6	-2.004,1	-2.024,2	-1.941,6
Free Cash Flow	1.754,6	-1.911,9	-3.288,2	235,3	-1.564,3	-88,8	4.457,4	2.539,8	2.937,5	3.395,0

Source: Bloomberg Terminal, 2019.

Table 14. Condensed Financials of TATA Steel

Tata Steel Ltd (TATA IS)										
In Millions of USD 12 Months Ending	FY 2009 03/31/2009	FY 2010 03/31/2010	FY 2011 03/31/2011	FY 2012 03/31/2012	FY 2013 03/31/2013	FY 2014 03/31/2014	FY 2015 03/31/2015	FY 2016 03/31/2016	FY 2017 03/31/2017	FY 2018 03/31/2018
Market Capitalization	2.962,3	12.465,8	13.377,1	8.993,4	5.576,7	6.388,4	4.937,2	4.688,4	7.218,8	10.545,7
- Cash & Equivalents	1.881,6	1.945,8	3.144,0	2.394,2	1.944,4	1.882,2	1.624,9	1.640,3	1.633,3	3.507,3
+ Preferred & Other	176,4	196,7	199,4	218,6	310,3	293,5	276,7	118,1	246,9	143,8
+ Total Debt	11.806,5	11.813,2	13.608,9	11.757,1	12.573,6	13.626,1	12.951,8	12.394,6	12.798,2	14.146,0
Enterprise Value	13.063,6	22.529,9	24.041,4	18.575,0	16.516,1	18.425,7	16.540,8	15.560,8	18.630,7	21.328,1
Revenue, Adj	31.910,4	21.481,6	25.719,1	27.698,2	24.533,4	24.404,2	22.629,1	16.159,0	17.404,8	20.435,0
<i>Growth %, YoY</i>	<i>11,1</i>	<i>-30,2</i>	<i>15,1</i>	<i>12,9</i>	<i>0,9</i>	<i>10,4</i>	<i>-6,1</i>	<i>-23,6</i>	<i>10,4</i>	<i>12,9</i>
Gross Profit, Adj	—	—	—	—	—	—	—	—	—	—
<i>Margin %</i>	—	—	—	—	—	—	—	—	—	—
EBITDA, Adj	3.977,2	1.705,5	3.511,7	2.622,4	2.312,2	2.749,2	2.060,2	1.218,0	2.540,9	3.404,9
<i>Margin %</i>	<i>12,5</i>	<i>7,9</i>	<i>13,7</i>	<i>9,5</i>	<i>9,4</i>	<i>11,3</i>	<i>9,1</i>	<i>7,5</i>	<i>14,6</i>	<i>16,7</i>
Net Income, Adj	1.616,3	-387,2	1.481,5	607,0	-54,1	601,5	-238,0	-125,4	344,3	952,2
<i>Margin %</i>	<i>5,1</i>	<i>-1,8</i>	<i>5,8</i>	<i>2,2</i>	<i>-0,2</i>	<i>2,5</i>	<i>-1,1</i>	<i>-0,8</i>	<i>2,0</i>	<i>4,7</i>
EPS, Adj	1,72	-0,44	1,44	0,57	-0,05	0,58	-0,23	-0,12	0,33	0,92
<i>Growth %, YoY</i>	<i>-54,8</i>	—	—	<i>-60,4</i>	—	—	—	<i>47,2</i>	—	<i>175,0</i>
Cash from Operations	2.765,1	1.591,2	277,9	1.775,7	2.058,2	1.626,7	1.110,9	950,0	942,3	503,1
Capital Expenditures	-1.847,3	-1.509,3	-2.105,0	-2.529,4	-2.845,0	-2.719,6	-2.207,4	-1.554,0	-1.150,9	-1.160,0
Free Cash Flow	917,8	81,9	-1.827,2	-753,7	-786,8	-1.092,9	-1.096,5	-604,0	-208,6	-656,9

Source: Bloomberg Terminal, 2019.

Table 15. Condensed Financials of Wuhan Iron and Steel Group

Wuhan Iron & Steel Group Corp (WHISGZ CH)									
In Millions of USD 12 Months Ending	FY 2008 12/31/2008	FY 2009 12/31/2009	FY 2010 12/31/2010	FY 2011 12/31/2011	FY 2012 12/31/2012	FY 2013 12/31/2013	FY 2014 12/31/2014	FY 2015 12/31/2015	FY 2016 12/31/2016
Market Capitalization	—	—	—	—	—	—	—	—	—
- Cash & Equivalents	1.993,4	1.400,2	1.364,1	1.813,8	1.069,3	1.209,5	1.034,7	1.327,8	669,3
+ Preferred & Other	3.695,3	3.821,8	4.147,4	4.807,5	4.863,7	4.922,8	3.187,2	2.646,3	4.752,0
+ Total Debt	8.344,7	10.678,9	12.615,3	14.469,1	16.578,3	18.317,7	15.426,8	15.551,4	12.234,3
Enterprise Value	—	—	—	—	—	—	—	—	—
Revenue, Adj	17.656,6	20.444,2	28.074,8	34.160,3	33.765,1	36.831,7	23.627,6	16.131,1	11.607,2
<i>Growth %, YoY</i>	<i>50,1</i>	<i>13,9</i>	<i>36,0</i>	<i>16,2</i>	<i>-3,5</i>	<i>6,3</i>	<i>-35,7</i>	<i>-30,4</i>	<i>-24,0</i>
Gross Profit, Adj	2.044,3	1.788,2	2.369,1	2.417,3	1.922,7	2.362,9	1.885,0	262,8	1.103,0
<i>Margin %</i>	<i>11,6</i>	<i>8,7</i>	<i>8,4</i>	<i>7,1</i>	<i>5,7</i>	<i>6,4</i>	<i>8,0</i>	<i>1,6</i>	<i>9,5</i>
EBITDA, Adj	1.949,2	1.683,2	2.029,5	2.181,4	1.535,1	1.667,3	1.540,3	-177,4	1.391,7
<i>Margin %</i>	<i>11,0</i>	<i>8,2</i>	<i>7,2</i>	<i>6,4</i>	<i>4,5</i>	<i>4,5</i>	<i>6,5</i>	<i>-1,1</i>	<i>12,0</i>
Net Income, Adj	594,6	173,9	227,8	664,7	32,4	12,2	-1.320,6	-1.166,5	-162,0
<i>Margin %</i>	<i>3,4</i>	<i>0,9</i>	<i>0,8</i>	<i>1,9</i>	<i>0,1</i>	<i>0,0</i>	<i>-5,6</i>	<i>-7,2</i>	<i>-1,4</i>
EPS, Adj	—	—	—	—	—	—	—	—	—
<i>Growth %, YoY</i>	—	—	—	—	—	—	—	—	—
Cash from Operations	809,7	1.297,0	339,8	-192,8	-305,0	-56,0	499,7	-1.132,4	53,7
Capital Expenditures	-2.624,2	-2.528,8	-1.891,4	-2.526,6	-2.465,7	-1.189,4	-1.124,4	-854,4	-545,3
Free Cash Flow	-1.814,5	-1.231,7	-1.551,6	-2.719,4	-2.770,7	-1.245,4	-624,7	-1.986,8	-491,6

Source: Bloomberg Terminal, 2019.

3.4.2. Analysing the Key Financial Ratios of Leading Steel Companies over the World

Table 16. Key Financial Ratios in 2009

	KARDEMİR	ERDEMİR	ARCELOR MITTAL	BAOSTEEL	HESTEEL	HYUNDAI	NIPPON	POSCO	TATA	WUHAN
In Millions of USD Except Per Share 12 Months Ending	FY 2009 12/31/2009	FY 2009 12/31/2009	FY 2009 12/31/2009	FY 2009 12/31/2009	FY 2009 12/31/2019	FY 2009 12/31/2009	FY 2009 03/31/2009	FY 2009 12/31/2009	FY 2009 03/31/2009	FY 2009 12/31/2009
Returns										
Return on Common Equity	-8,76	-2,88	0,27	6,22	3,37	20,05	8,66	10,99	17,15	2,95
Return on Assets	-5,77	-1,46	0,12	2,90	0,98	8,15	3,08	6,62	4,02	0,72
Return on Capital	-6,50	0,08	1,49	4,64	3,13	11,20	4,96	8,89	10,74	—
Return on Invested Capital	-7,35	0,51	2,82	4,21	2,73	4,85	5,45	7,88	21,51	2,22
Margins										
Gross Margin	-4,65	4,48	3,62	9,12	5,95	11,67	13,92	15,79	12,44	8,75
EBITDA Margin	-2,14	7,25	5,09	14,35	6,22	10,42	12,95	17,44	9,52	8,23
Operating Margin	-9,07	0,98	-2,41	5,39	2,48	7,11	7,19	10,52	0,61	2,56
Incremental Operating Margin	-137,11	-37,63	-32,64	-3,39	-9,31	-26,82	-354,57	-67,48	4,63	—
Pretax Margin	-9,01	-4,24	-6,98	4,93	1,27	14,26	5,89	10,15	3,37	1,80
Income before XO Margin	-9,11	-3,20	0,28	4,12	1,15	13,61	3,52	8,80	3,40	1,46
Net Income Margin	-9,11	-3,20	0,26	3,93	1,09	13,40	3,25	8,73	3,32	0,85
Net Income to Common Margin	-9,11	-3,20	0,26	3,93	1,09	13,34	3,25	8,73		0,85
Additional										
Effective Tax Rate	—	—	—	16,44	9,28	4,51	40,33	14,33	28,09	18,97
Dvd Payout Ratio	—	—	529,04	60,21	72,83	3,64	24,43	19,13	27,14	
Sustainable Growth Rate	—	—	-1,16	2,47	0,91	19,32	6,54	8,89	12,50	

Table 17. Key Financial Ratios in 2010

	KARDEMİR	ERDEMİR	ARCELOR MITTAL	BAOSTEE L	HESTEEL	HYUNDAI	NIPPON	POSCO	TATA	WUHAN
In Millions of USD except Per Share	FY 2010	FY 2010	FY 2010	FY 2010	FY 2010	FY 2010	FY 2010	FY 2010	FY 2010	FY 2010
12 Months Ending	12/31/2010	12/31/2010	12/31/2010	12/31/2010	12/31/2010	12/31/2010	03/31/2010	12/31/2010	03/31/2010	12/31/2010
Returns										
Return on Common Equity	2,64	12,48	4,72	12,88	4,93	12,27	-0,66	12,17	-8,13	3,65
Return on Assets	1,61	6,20	2,26	6,17	1,46	5,13	-0,23	6,86	-1,74	0,81
Return on Capital	3,98	8,70	4,59	8,72	3,75	7,26	-0,36	8,98	-291,58	3,54
Return on Invested Capital	2,86	8,18	5,62	7,81	3,54	5,97	0,34	8,51	-282,98	3,12
Margins										
Gross Margin	6,05	19,89	8,90	13,04	7,13	14,68	9,50	17,05	7,90	8,44
EBITDA Margin	9,35	21,41	10,25	14,79	6,77	14,25	9,17	17,93	3,49	7,23
Operating Margin	3,03	16,91	4,62	8,24	2,87	10,34	0,92	11,59	-23,47	2,63
Incremental Operating Margin	47,65	78,24	29,85	16,04	3,76	27,24	-24,25	15,16	0,03	2,83
Pretax Margin	2,17	14,68	2,38	8,45	1,67	10,16	0,32	11,00	-1,96	1,61
Income before XO Margin	2,09	12,01	4,27	6,61	1,45	9,01	-0,14	8,74	-1,97	1,44
Net Income Margin	2,09	11,55	3,74	6,37	1,39	9,01	-0,33	8,57	-2,02	0,81
Net Income to Common Margin	2,09	11,55	3,74	6,37	1,39	9,01	-0,33	8,57		0,81
Additional										
Effective Tax Rate	3,90	18,23	—	21,78	13,34	11,34	142,70	20,53	6941,42	11,10
Dvd Payout Ratio	0,00	36,09	35,78	40,82	0,00	4,56	—	18,76	—	
Sustainable Growth Rate	2,64	7,98	3,03	7,62	4,93	11,71	—	9,88		

Table 18. Key Financial Ratios in 2011

	KARDEMİR	ERDEMİR	ARCELOR MITTAL	BAOSTEEL	HESTEEL	HYUNDAI	NIPPON	POSCO	TATA	WUHAN
In Millions of USD except Per Share 12 Months Ending	FY 2011 12/31/2011	FY 2011 12/31/2011	FY 2011 12/31/2011	FY 2011 12/31/2011	FY 2011 12/31/2011	FY 2011 12/31/2011	FY 2011 03/31/2011	FY 2011 12/31/2011	FY 2011 03/31/2011	FY 2011 12/31/2011
Returns										
Return on Common Equity	20,52	14,79	3,80	6,97	3,28	8,51	5,03	9,74	30,76	9,29
Return on Assets	11,95	7,47	1,79	3,29	1,00	3,59	1,86	4,94	7,32	2,02
Return on Capital	19,69	10,19	3,98	5,03	3,04	5,89	3,23	6,80	12,96	4,73
Return on Invested Capital	17,86	11,22	4,35	3,71	3,02	5,59	3,27	6,76	8,08	2,27
Margins										
Gross Margin	19,43	23,23	9,00	8,62	7,96	11,89	11,80	13,22	13,65	7,08
EBITDA Margin	17,50	22,80	10,18	9,62	6,99	12,95	11,16	11,32	9,89	6,39
Operating Margin	14,64	19,34	5,21	3,72	2,91	8,35	4,03	8,04	52,17	2,17
Incremental Operating Margin	34,94	26,39	8,11	—	3,52	4,30	21,48	—	10,33	—
Pretax Margin	12,64	14,54	2,85	4,16	1,34	5,96	4,51	6,94	7,62	2,90
Income before XO Margin	11,68	11,65	1,91	3,48	1,09	4,90	2,66	5,39	7,67	2,27
Net Income Margin	11,68	11,27	2,41	3,31	1,04	4,90	2,27	5,29	7,67	1,95
Net Income to Common Margin	11,68	11,27	2,41	3,31	1,04	4,90	2,27	5,29		1,95
Additional										
Effective Tax Rate	7,58	19,88	32,91	16,46	18,27	17,81	41,11	22,33	26,82	21,90
Dvd Payout Ratio	20,81	26,34	64,45	47,57	23,03	5,64	20,29	21,17	12,81	
Sustainable Growth Rate	16,25	10,89	1,35	3,65	2,52	8,03	4,01	7,68	26,82	

Table 19. Key Financial Ratios in 2012

	KARDEMİR	ERDEMİR	ARCELOR MITTAL	BAOSTEEL	HESTEEL	HYUNDAI	NIPPON	POSCO	TATA	WUHAN
In Millions of USD except Per Share 12 Months Ending	FY 2012 12/31/2012	FY 2012 12/31/2012	FY 2012 12/31/2012	FY 2012 12/31/2012	FY 2012 12/31/2012	FY 2012 12/31/2012	FY 2012 03/31/2012	FY 2012 12/31/2012	FY 2012 03/31/2012	FY 2012 12/31/2012
Returns										
Return on Common Equity	18,17	6,33	-6,46	9,29	0,26	8,41	3,17	6,33	13,78	0,42
Return on Assets	10,04	3,41	-2,84	4,46	0,07	3,52	1,18	3,12	3,82	0,09
Return on Capital	13,46	5,66	-2,38	6,12	1,38	5,57	2,12	4,45	7,39	1,13
Return on Invested Capital	12,06	4,35	-2,03	1,04	1,47	3,70	1,76	3,91	3,36	0,40
Margins										
Gross Margin	15,88	10,75	0,80	7,35	8,12	9,83	10,08	11,73	9,39	5,69
EBITDA Margin	17,98	11,32	8,42	7,36	7,17	10,94	8,89	9,77	5,97	4,55
Operating Margin	13,09	7,73	-3,14	1,32	2,47	5,97	1,94	5,74	—	0,82
Incremental Operating Margin	—	—	-77,28	-18,46	-5,18	-105,22	-457,80	-35,39	6,49	-39,37
Pretax Margin	14,15	7,12	-6,38	6,62	0,21	6,32	2,93	5,30	3,94	0,33
Income before XO Margin	11,52	5,05	-4,12	5,21	0,12	5,39	1,66	3,75	4,08	0,14
Net Income Margin	11,52	4,72	-3,98	5,28	0,10	5,35	1,43	3,87	4,08	0,10
Net Income to Common Margin	11,52	4,72	-3,98	5,28	0,10	5,35	1,43	3,87		0,10
Additional										
Effective Tax Rate	18,62	29,04	—	21,39	39,89	14,68	43,57	29,18	42,36	58,19
Dvd Payout Ratio	0,00	23,44	—	23,92	0,00	5,29	26,95	25,10	21,62	
Sustainable Growth Rate	18,17	4,84	—	7,07	0,26	7,96	2,32	4,74	10,80	

Table 20. Key Financial Ratios in 2013

	KARDEMİR	ERDEMİR	ARCELOR MITTAL	BAOSTEEL	HESTEEL	HYUNDAI	NIPPON	POSCO	TATA	WUHAN
In Millions of USD except Per Share 12 Months Ending	FY 2013 12/31/2013	FY 2013 12/31/2013	FY 2013 12/31/2013	FY 2013 12/31/2013	FY 2013 12/31/2013	FY 2013 12/31/2013	FY 2013 03/31/2013	FY 2013 12/31/2013	FY 2013 03/31/2013	FY 2013 12/31/2013
Returns										
Return on Common Equity	8,39	11,74	-5,38	5,26	0,27	6,01	-5,90	3,33	-18,38	0,15
Return on Assets	4,21	6,77	-2,25	2,60	0,07	2,61	-2,07	1,68	-4,80	0,03
Return on Capital	7,87	9,53	-1,52	3,92	1,45	4,00	-2,12	2,60	-4,76	1,83
Return on Invested Capital	8,74	9,10	0,25	2,71	1,50	2,88	-0,08	3,08	-1,25	0,93
Margins										
Gross Margin	15,00	19,01	5,28	9,31	8,40	9,97	9,28	11,09	9,24	6,42
EBITDA Margin	16,18	18,99	7,42	8,82	8,32	10,91	7,17	9,18	5,06	4,53
Operating Margin	10,93	14,94	1,51	3,40	2,83	5,64	0,46	4,84	—	0,90
Incremental Operating Margin	—	342,91	—	—	—	-9,31	—	-37,77	-3,10	2,22
Pretax Margin	6,71	12,76	-2,97	4,22	0,21	5,78	-3,12	3,15	-5,45	0,22
Income before XO Margin	5,52	9,82	-3,24	3,19	0,12	5,24	-2,54	2,19	-5,29	0,18
Net Income Margin	5,53	9,41	-3,20	3,07	0,11	5,11	-2,84	2,22	-5,29	0,03
Net Income to Common Margin	5,53	9,41	-3,28	3,07	0,11	5,11	-2,84	2,20	—	0,03
Additional										
Effective Tax Rate	17,70	23,05	—	24,59	40,67	9,33	—	30,37	—	19,39
Dvd Payout Ratio	0,00	89,13	—	28,31	182,80	8,37	—	45,50	—	—
Sustainable Growth Rate	8,39	1,28	—	3,77	-0,23	5,51	—	1,82	—	—

Table 21. Key Financial Ratios in 2014

	KARDEMİR	ERDEMİR	ARCELOR MITTAL	BAOSTEEL	HESTEEL	HYUNDAI	NIPPON	POSCO	TATA	WUHAN
In Millions of USD except Per Share 12 Months Ending	FY 2014 12/31/2014	FY 2014 12/31/2014	FY 2014 12/31/2014	FY 2014 12/31/2014	FY 2014 12/31/2014	FY 2014 12/31/2014	FY 2014 03/31/2014	FY 2014 12/31/2014	FY 2014 03/31/2014	FY 2014 12/31/2014
Returns										
Return on Common Equity	26,34	17,34	-2,36	5,15	1,63	5,70	9,56	1,42	9,62	-19,36
Return on Assets	12,10	10,69	-1,03	2,54	0,41	2,62	3,43	0,74	2,26	-3,77
Return on Capital	16,22	14,01	0,28	3,78	2,48	4,13	4,99	1,21	5,04	-3,14
Return on Invested Capital	16,56	12,69	2,74	3,02	2,58	4,08	3,58	1,92	3,42	-0,35
Margins										
Gross Margin	23,53	21,23	7,56	9,68	10,79	13,85	13,70	11,19	11,14	7,98
EBITDA Margin	23,98	21,52	8,80	9,71	8,29	15,98	11,60	9,91	7,17	6,52
Operating Margin	20,19	17,72	3,83	4,14	4,55	8,90	5,41	4,94	27,45	1,38
Incremental Operating Margin	64,74	33,71	—	—	—	22,56	24,71	6,72	4,56	-0,04
Pretax Margin	18,35	17,12	-0,66	4,42	0,96	6,55	7,24	2,12	2,49	-5,80
Income before XO Margin	16,89	14,46	-1,23	3,25	0,73	4,67	4,69	0,86	2,44	-5,79
Net Income Margin	16,89	13,94	-1,37	3,09	0,71	4,56	4,40	0,96	2,44	-5,59
Net Income to Common Margin	16,89	13,94	-1,37	3,09	0,71	4,56	4,40	0,91		-5,59
Additional										
Effective Tax Rate	7,93	15,51	—	26,42	23,48	28,80	35,22	59,61	45,4939	—
Dvd Payout Ratio	27,04	87,42	—	51,04	0,00	11,36	18,83	107,83	27,02	
Sustainable Growth Rate	19,21	2,18	—	2,52	1,63	5,06	7,76	-0,11	7,02	

Table 22. Key Financial Ratios in 2015

	KARDEMİR	ERDEMİR	ARCELOR MITTAL	BAOSTEEL	HESTEEL	HYUNDAI	NIPPON	POSCO	TATA	WUHAN
In Millions of USD except Per Share 12 Months Ending	FY 2015 12/31/2015	FY 2015 12/31/2015	FY 2015 12/31/2015	FY 2015 12/31/2015	FY 2015 12/31/2015	FY 2015 12/31/2015	FY 2015 03/31/2015	FY 2015 12/31/2015	FY 2015 03/31/2015	FY 2015 12/31/2015
Returns										
Return on Common Equity	-1,09	10,15	-23,59	0,83	1,32	5,08	7,57	0,36	-11,41	-26,27
Return on Assets	-0,49	6,51	-9,03	0,41	0,33	2,41	3,01	0,22	-2,37	-3,86
Return on Capital	1,32	8,63	-13,15	0,57	1,57	3,85	4,39	-0,72	-0,91	-5,92
Return on Invested Capital	5,65	8,03	-11,17	0,61	2,51	4,19	3,71	-1,49	3,77	-5,90
Margins										
Gross Margin	8,42	17,29	-2,54	8,63	13,15	15,07	14,41	11,23	9,06	1,63
EBITDA Margin	9,50	17,52	-1,52	8,34	12,70	16,97	12,10	9,67	4,77	-1,10
Operating Margin	4,95	12,81	-6,54	1,90	6,77	9,08	6,23	4,14	-44,06	-8,57
Incremental Operating Margin	—	—	-45,82	-19,59	—	-4,29	54,47	-11,63	-1,00	-24,19
Pretax Margin	-7,57	12,05	-11,83	1,08	0,77	5,74	6,71	0,31	-2,85	-12,34
Income before XO Margin	-0,96	9,76	-13,25	0,39	0,55	4,58	4,10	-0,17	-2,84	-11,82
Net Income Margin	-0,96	9,45	-12,50	0,58	0,79	4,55	3,82	0,31	-2,97	-7,23
Net Income to Common Margin	-0,96	9,45	-12,50	0,58	0,79	4,55	3,82	0,25		-7,23
Additional										
Effective Tax Rate	—	19,07	—	63,38	28,27	20,24	38,80	153,21	—	—
Dvd Payout Ratio	—	93,26	—	104,62	55,55	13,33	23,46	433,61	—	—
Sustainable Growth Rate	—	0,68	—	-0,04	0,59	4,41	5,79	-1,19	—	—

Table 23. Key Financial Ratios in 2016

	KARDEMİR	ERDEMİR	ARCELOR MITTAL	BAOSTEEL	HESTEEL	HYUNDAI	NIPPON	POSCO	TATA	WUHAN
In Millions of USD except Per Share	FY 2016	FY 2016	FY 2016	FY 2016	FY 2016	FY 2016	FY 2016	FY 2016	FY 2016	FY 2016
12 Months Ending	12/31/2016	12/31/2016	12/31/2016	12/31/2016	12/31/2016	12/31/2016	03/31/2016	12/31/2016	03/31/2016	12/31/2016
Returns										
Return on Common Equity	-5,40	11,07	6,42	6,91	3,52	5,41	5,06	3,18	-1,48	-4,74
Return on Assets	-2,29	7,17	2,34	3,06	0,85	2,64	2,14	1,70	-0,23	-0,59
Return on Capital	-0,87	9,37	5,32	5,23	2,18	3,86	3,13	2,20	2,21	1,15
Return on Invested Capital	8,07	7,25	6,21	4,67	3,14	3,64	1,92	3,18	-6,61	0,67
Margins										
Gross Margin	10,64	21,23	11,20	11,13	13,46	14,74	12,61	12,60	7,61	9,50
EBITDA Margin	21,63	23,72	12,48	13,08	13,80	16,97	9,77	11,41	2,52	11,99
Operating Margin	16,21	18,07	7,33	6,03	7,24	8,66	3,42	5,36	-12,04	2,79
Incremental Operating Margin	253,70	—	—	14,26	34,06	—	-25,87	—	2,59	—
Pretax Margin	-8,96	19,52	4,79	4,84	2,18	7,03	4,70	2,70	1,93	-0,48
Income before XO Margin	-5,30	13,51	3,05	3,80	1,93	5,20	3,09	1,97	-0,36	-1,18
Net Income Margin	-5,30	13,03	3,13	3,69	2,09	5,09	2,96	2,57	-0,53	-1,40
Net Income to Common Margin	-5,30	13,03	3,13	3,69	2,09	5,09	2,96	2,51		-1,40
Additional										
Effective Tax Rate	—	30,81	36,25	21,45	11,53	26,14	34,33	26,85	25,2478	—
Dvd Payout Ratio	—	86,33	0,00	51,15	54,61	11,58	28,38	48,12	39,13	
Sustainable Growth Rate	—	1,51	6,42	3,38	1,60	4,78	3,62	1,65	-0,90	

Table 24. Key Financial Ratios in 2017

	KARDEMİR	ERDEMİR	ARCELOR MITTAL	BAOSTEEL	HESTEEL	HYUNDAI	NIPPON	POSCO	TATA
In Millions of USD except Per Share 12 Months Ending	FY 2017 12/31/2017	FY 2017 12/31/2017	FY 2017 12/31/2017	FY 2017 12/31/2017	FY 2017 12/31/2017	FY 2017 12/31/2017	FY 2017 03/31/2017	FY 2017 12/31/2017	FY 2017 03/31/2017
Returns									
Return on Common Equity	10,74	22,15	13,26	12,20	4,01	4,35	4,58	6,40	-10,83
Return on Assets	4,00	14,43	5,69	5,41	0,97	2,17	1,91	3,51	-2,42
Return on Capital	7,71	18,59	10,78	8,27	2,51	3,27	3,08	5,01	-3,85
Return on Invested Capital	12,34	16,30	11,04	7,45	3,00	3,12	1,80	4,93	5,18
Margins									
Gross Margin	16,90	28,05	11,36	13,56	11,94	12,69	12,24	13,78	14,59
EBITDA Margin	17,57	29,64	11,94	15,11	11,39	14,98	9,13	13,06	9,71
Operating Margin	14,04	25,80	7,91	8,78	6,14	7,14	2,47	7,62	78,85
Incremental Operating Margin	10,93	38,48	10,71	24,93	3,74	—	-19,50	23,48	2,12
Pretax Margin	5,54	26,44	7,29	8,36	2,82	5,64	3,92	6,89	-0,26
Income before XO Margin	6,33	20,80	6,66	7,09	1,96	3,80	3,15	4,90	-3,63
Net Income Margin	6,33	20,03	6,65	6,67	1,68	3,74	2,83	4,60	-3,78
Net Income to Common Margin	6,33	20,03	6,65	6,67	1,68	3,74	2,83	4,55	
Additional									
Effective Tax Rate	—	21,33	8,63	15,11	30,42	32,72	19,65	28,86	112,31
Dvd Payout Ratio	0,00	71,65	2,23	52,27	58,44	13,75	30,38	23,21	—
Sustainable Growth Rate	10,74	6,28	12,96	5,82	1,67	3,76	3,19	4,92	—

Table 25. Key Financial Ratios in 2018

	KARDEMİR	ERDEMİR	ARCELOR MITTAL	BAOSTEEL	HESTEEL	HYUNDAI	NIPPON	POSCO	TATA
In Millions of USD except Per Share 12 Months Ending	FY 2018 12/31/2018	FY 2018 12/31/2018	FY 2018 12/31/2018	FY 2018 12/31/2018	FY 2018 12/31/2018	FY 2018 12/31/2018	FY 2018 03/31/2018	FY 2018 12/31/2018	FY 2018 03/31/2018
Returns									
Return on Common Equity	24,93	23,80	12,73	12,64	7,70	2,39	6,40	3,84	26,87
Return on Assets	10,74	15,96	5,83	6,29	1,82	1,20	2,63	2,15	7,01
Return on Capital	17,55	20,38	10,68	9,30	4,11	2,26	4,31	3,37	16,19
Return on Invested Capital	22,33	16,52	13,38	8,45	4,60	2,53	2,53	4,34	0,64
Margins									
Gross Margin	30,61	31,03	11,85	14,60	13,77	9,97	12,34	12,27	16,62
EBITDA Margin	30,57	31,80	12,28	15,62	13,52	12,59	9,31	13,56	12,09
Operating Margin	27,95	28,44	8,60	9,36	7,97	4,94	3,22	8,53	30,51
Incremental Operating Margin	62,27	34,40	15,03	19,88	24,82	—	6,58	21,30	16,02
Pretax Margin	19,10	31,95	6,55	9,16	4,52	2,74	5,11	5,48	13,44
Income before XO Margin	14,59	21,63	7,01	7,67	3,64	1,96	3,90	2,91	10,20
Net Income Margin	14,59	20,72	6,77	7,10	3,02	1,92	3,44	2,60	10,07
Net Income to Common Margin	14,59	20,72	6,77	7,10	3,02	1,92	3,44	2,57	
Additional									
Effective Tax Rate	23,62	32,28	—	16,31	19,29	28,40	23,74	46,89	16,13
Dvd Payout Ratio	15,64	—	3,94	51,63	29,28	24,70	31,72	47,82	9,11
Sustainable Growth Rate	21,03	—	12,23	6,11	5,44	1,80	4,37	2,00	24,43

CONCLUSION

As it can be seen on the above-mentioned tables that the financial ratios show the screenshots of the companies which make the investment decision easier for either manager's side or investors / shareholders side.

According to the ratios stated on the above tables, it could be said that the Turkish steel companies namely Kardemir and Erdemir were in bottleneck on the Return on Equity perspective while the Far Eastern companies like Hyundai, Nippon and POSCO are in their peaks during the FY 2009. However it could also be seen that the Turkish steel companies had reached their peaks in FY 2011 and this growing level trend had been continued until FY 2015 while the trend was kept going through the opposite way (downside) for the Far Eastern companies in the same period of years.

When we address the FY 2015 there is no doubt that all the organizations around the world has been effected by the global economic crisis strongly. The Return on Equity ratios for each of them had decreased significantly even below zero for some of them (-26, 27 for Wuhan which was the weakest link among them) in that year. In addition, increasing their levels would not be very easy for the others as it would for the Turkish ones. While both Kardemir and Erdemir could managed to reached the ratios over even 20% in 2018, the others mainly struggled to catch this high levels except TATA which was showed the level of 26,87%.

Return on Capital and Return on Invested Capital Ratios sily showed the same up and down trends as the Return on Equity ratio for each year, just an exeption for TATA in 2010 since it showed a disappointing value of both Return on Capital and Return on Invested Capital Ratios with relatively -291% and -282%, which lead us to think that TATA could managed to make a return above its average costs and debts for the related period of time.

Considering the Gross Margin, EBITDA Margin Operating and Net Income Margins we could say that these ratios follow the similar trends in the same time periods when taking the same company as an example, in other words when one of these ratios of a company grows in a specific year, the others also grow (almost certainly). The trend is also the same within a company when any of them decreases.

Most of the selected company's financials performed quite well from 2010 to 2015 having the exceptional levels of Gross Margin, EBITDA Margin Operating and Net Income Margins however only Arcelor Mittal and Wuhan Steel stayed at inadequate levels. Which could be interpreted that those two were having some important financial problems in the case of profitability.

When the calendars pointed 2015, when the economic crisis had showed itself globally, financial distress was appeared in any place from East to West on Earth. The steel industry was the one, which effected quite strongly and these struggle could appeared in their financial statements of that year.

To give an example, while the Gross Margin of Kardemir and Erdemir were respectively 23% and 21% in 2014 they were decreased to 8% for Kardemir and 17% for Erdemir in 2015. Similarly, there was also a sharp decline on the Net Income Margin of these two Turkish companies comparing the FY 2014 and FY 2015. While the Net Income Margins were 17% for Kardemir and 14% for Erdemir in 2014, the figures showed -1% (a decline of more than 100 %) and 9% (a decline of almost 50 %) respectively in the FY 2015. After having some years to compose themselves, these two firms showed a very well performance in FY 2018 with the Net Income Margins of 15% and 20%, EBITDA Margins of 31 % and 32 % that is the highest rate for both of them over the last decade and even the highest among the other eight.

In general speaking the FY 2018 seemed a quite productive year for the steel industry through the world. Each of the selected companies reported their financials with a remarkable profit. The Turkish ones enhanced their values slightly more compared to the others. While Kardemir's and Erdemir's EBITDA margins get over 30% the same ratio in that year stayed between 10% to 15% for the rest of the selected ones.

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