Vaasan Ammattikorkeakoulu
Vasa Yrkeshögskola
UNIVERSITY OF APPLIED SCIENCES

Raju Sharma

COMPARING AND ANALYZING

FINANCIAL STATEMENTS TO MAKE AN INVESTMENT DECISION

Case Study of Automotive Industry

Business Economics and Tourism

2012

VAASAN AMMATTIKORKEAKOULU
UNIVERSITY OF APPLIED SCIENCES
Bachelor of Business Administration

ABSTRACT

Author	Raju Sharma
Title	Comparing and Analyzing Financial Statements to Make an Investment Decision: Case Study of Automotive Industry.
Year	2012
Language	English
Pages	72 + 5 Appendices
Name of Supervisor	Jukka Paldanius

The purpose of the thesis was to evaluate and compare the financial statements of different companies to rate their performances. The emphasis was to be able to choose among several companies the best one to invest in. The aim of the study was met by comparing the risk of different companies, their rate of return, future trends and their strengths and weaknesses.

In the theoretical section of the thesis different factors affecting the capital market were discussed, with the focus being on the risks of an investment. Basic financial statements and ratios were discussed briefly. Next cross sectional and time series techniques to compare the financial statements and ratios were revealed. Most of the information from the theories was later on used in the empirical part of the thesis.

 In the empirical study, initially the financial statements of different companies were taken to compute the ratios, risk, average return, to make trends and common size statements. Then a quantitative interpretation of the risk and return charts, common size statements, trend statements was executed alongside the qualitative discussion of individual figures and tables. General Motors, Ford, Nissan and Toyota are the four automotive company used for the purpose.

Finally a clear picture of the performance of these companies from 2008 to 2011 was available. A very high risk but lower rate of return was found in the automotive industry. Automotive industry was found to have an adverse effect caused by the global economic crisis of 2008-2009. As a result a higher debt, especially in the American automobile companies, was seen. Finally, thesis was concluded with the finding "Investment into automotive industry is risky in the present situation".

Keywords   Risk, Return, Financial Statements, Investment Decision.

VAASAN AMMATTIKORKEAKOULU
Liiketalous ja matkailu

TIIVISTELMÄ

Tekijä	Raju Sharma
Opinnäytetyön nimi	Comparing and Analyzing Financial Statements to Make Investment Decision: Case Study of Automotive Industry.
Vuosi	2012
Kieli	Englanti
Sivumäärä	72 + 5 liitettä
Ohjaaja	Jukka Paldanius

Opinnäytetyön tarkoituksena oli arvostella ja vertailla eri yritysten tilinpäätöstä ja arvioida niiden saavutuksia. Näkökulma oli valita useiden yritysten joukosta paras sijoituksen kohde. Tavoite saavutettiin vertaamalla eri yritysten riskejä, tuottoasteita, tulevaisuuden suhdanteita, niiden vahvuuksia ja heikkouksia.

Opinnäytetyön teoreettisessa osiossa käsiteltiin erilaisia pääomamarkkinoihin vaikuttavia tekijöitä, jossa painopiste oli sijoitusten riskeissä. Perustilinpäätöstä ja sen suhdelukuja tarkasteltiin lyhyesti. Jälkeenpäin poikkileikkauksellisia ja aikasarjatekniikoita verrataan tilinpäätökseen ja suhdeluvut tuotiin esille. Useimmat tiedot teoriaosiosta käytettiin myöhemmin empiirisessä osassa.

Empiirisessä osassa huomioitiin aluksi eri yritysten tilinpäätökset, jotta voidaan laskea suhdeluvut, riskit, keskimääräinen tuotto, jotta voidaan tehdään suhdanne- sekä yhteissuuruustiliote. Jälkeenpäin suoritettiin määrällinen tulkinta riskeistä ja kaavioista, yhteissuurustiliotteesta, suhdannetiliotteesta suoritettiin yksittäisten lukujen ja taulukoiden määrällisen keskustelun rinnalle. General Motors, Ford, Nissan ja Toyota olivat neljä autonvalmistajaa, joita käytettiin tarkoitukseen.

Lopulta selkeän kuvan näiden yritysten saavutuksesta vuodesta 2008- 2011 oli saatavilla. Erittäin suuri riski löytyi, mutta pienempi maailman laajuiseen talouskriisiin vuosina 2008 -2009. Seurauksena korkea velka oli erityisesti nähtävillä Amerikan autonvalmistajayrityksissä. Lopuksi voidaan todeta, että "Autoteollisuuteen investointi olisi riskialtista nykytilanteessa".

Asiasanat   Riski, tuotto, tilinpäätös, investointipäätös

CONTENTS

LIST OF FIGURES AND TABLES

LIST OF APPENDICES

1 INTRODUCTION

Modernization has made it possible to invest in a company situated thousand miles away from the investor. It is possible for a person to own a small part of a business situated on the other side of the world. This has been possible because of a capital market. Where the investors invest their money and wait for the company to perform and earn value for them.

Most potential investors do not have sufficient knowledge about the capital market. Questions like "How to buy stocks? How to analyze the company? Which company or industry to invest in? How to look at the performance of the companies?" have acted as a barrier for then from owning stocks. Personally I have had the same problem. During the summer of 2011 I saved some four thousand euros from my summer work. I wanted to invest that amount into something profitable but I was afraid to put my money into any kind of an investment as I did not have enough knowledge in investments. The fact that I wanted to invest in stocks but I did not have adequate knowledge about investment motivated me to explore the topic.

For the last three years of my Bachelor Degree I have been studying a lot of business, investments and financial issues but hardly got any information about the capital market. Information gained while writing this thesis would act as the background knowledge for my future investments and I hope other investors would be able to choose their portfolio after reading this thesis.

In the introduction of this thesis the reader will be introduced with the purpose of the thesis, the research methods used, the limitations of the thesis and the basic structure adopted to write about the topic.

1.1 Purpose of Thesis

Making an Investment is a very big decision one takes, and nobody enjoys losing value of their investments. They rather wish to add value to their existing assets. According to Frank (1990:5-6) investment is the current commitment of one's asset assigned for a time period to make a growth. Meanwhile a bad investment decision can end up the investors into the losing side. One should carefully analyze the rate of return, the risk involved, past performance of the company, competitor's position, the overall market situation and many other factors before making any investment decision.

After reading this thesis the reader would be able to know how to read and analyze a company's previous year's performance. The reader would also be able to understand the risk of the particular company and the average rate of return the company has achieved in the recent past. The trend the company is going with, either the performance has been getting better, has stayed the same over the years or getting worse, can be easily done. Similarly the reader would also be able to compare a particular company's performance with the other companies they are interested in.

In general, this thesis is a guide for the investors who have very little or no knowledge about stock markets, reading the company's performance or calculating the risks and possible gains of an investment.

1.2 Research Methodology

Qualitative and quantitative research methods have been used to bring the best result of the subject. Initially the financial data of four automotive companies is used as secondary data which is later calculated with the help of Microsoft Excel. Finally a comparative study of the performance of different companies, along with the performance of an individual company over the years is done. The income statement, balance sheet and the statement of cash flow is used to compute the different financial ratios, make trend statement, make the common size statement and calculate the risk and gain and to these different companies.

1.3 Structure of the Thesis

The first section of the thesis introduces the purpose, structure, research methods and the limitations of the thesis. Also, the introduction of the capital market and the factors affecting the capital market are also argued. Still, different kind of risks and the way to calculate them are discussed under the risk section in chapter two.

In the third and fourth chapter introduction of the basic financial statements and the basic financial ratios are presented. Next the cross sectional and trend analysis of the financial statement and its ratios is briefly discussed. Similarly, towards the end of the theoretical study case companies are introduced briefly, calculations done in Excel are explained and the research method used for the purpose of the thesis is discussed.

Additionally, in the empirical part of the study the results are expressed quantitatively followed with a qualitative analysis. Finally the research and the whole thesis are concluded along with suggestions for further research.

1.4 Limitation of Thesis

Investment is a very broad topic so it has not been possible to write all the things that would be handy for an investor. The focus of the research has been on reading and analyzing the past financial statements of the companies. While doing so only the annual financial statements have been analyzed in the thesis, future prediction has not been done.

Annual performances of four automotive companies for the previous four years have been taken into consideration. More data would have made the comparison more reliable and more fruitful. Similarly, while measuring the risk of the company only sales volatility has been taken into consideration although there are a lot of other risks that can be measured. While computing the financial ratio only few ratios under the liquidity, leverage, turnover and profitability category have been taken into consideration although hundreds of ratios exist. On the other hand, the industry average has not been considered while making the comparative

study because I did not had enough resources and time to calculate the industry average.

2   CAPITAL MARKET

The market where a government or a company raises funds for their operations and long term investment is known as the capital market. Generally, the selling of both kinds of securities, weather bond or stock, is done in the capital market. Holding bond means the holder has the creditor's stake in the company, whereas holding stocks means the holder owns part of company as a shareholder. Similarly, bonds are redeemed after a maturity period whereas stockholder can have the ownership of the company until anytime they wish. In this chapter the factors that affect the company's stock price are discussed.

2.1 Cash Flow and its Timing

Cash flow is the cash that moves in a business through its activities. The expectation that the investment will yield a higher cash flow in the future is what keeps the investors interested in that firm. If the expected cash flow is high and non-volatile then the stock prices will also rise. Investors would prefer a firm with higher cash inflows and lower outflow as it brings higher rate of return on an investment.

Timing of the cash flow is another crucial factor that influences the stock market. Financial managers concentrate on receiving cash earlier and paying bills as late as possible. If cash is received fast then it can be reinvested which increases profitability of the company. Timing of the cash flow shows how the future value of a certain amount of early received cash would influence the investments overall outcome. (Timothy and Joseph, 2003)

2.2 Future Forecast of Estimated Earnings

As we discussed in the cash flow the investors will be looking forward in to the future of the company. Positive future forecast is what attracts the investors to invest in the company. Forecasting the future is done by taking the historical

data's trends and computing the future pattern. Although it is a heavy hearted process to predict future, companies use different software tools to forecast the future in order to attract the investors. Investors will be looking forward to earning maximum profit from their investments by predicting the future before they invest. For instance in the year 2011 Kuman & Elango used functions and prediction algorithms to predict the future share prices of stocks. They further analysed their finding to compare individual stocks performances and the in-depth prediction.

2.3 Competitive position

When investors search for a company to invest in, then they look at the image of the company. Investors have a positive co-relation with brand names. It is much easier to find investors to invest in a well-recognized company. Similarly, if the company is not a famous one then the investors will not be so much interested in that. The image of the company and its competitive positioning automatically attracts investors to the company. It is very easy for the big companies like Apple, General Motors and Nokia to get the shareholders as most of the investors are automatically attracted by their brand name.

2.4 Competence of Management

Assurance given by management also plays a vital role in stock pricing. If the management of a certain company is encouraging, investors choose to invest into that company otherwise they will look for other companies. In case a company appoints a well-known international CEO, stock prices can rise overnight. Good news and optimistic predictions from the management play a vital role to raise the stock price.

For instant the shares of Apple reached $600 for the first time on 15th March 2012. Apple Stock has gone up by around 58% since Steve Job's Death in Oct. 5 2011. The price of a share was around $378.25 when the new management took over the company. A series of good news and the competence of the management made it possible. (Shapiro 20012; Goldman 2012)

2.5 Risk of an Investment

Usually in an investment no one knows the exact rate of return, the uncertainty of the rate of return is called risk. The uncertainty could either offer a large return on the investment or cause the loss of capital. Risk possesses both gaining and loosing opportunity, so higher risk means either higher gain or higher loss.

Some peoples are risk-averse, they do not want to take any additional risks and others do take calculated risks. In finance investors look for an additional compensation in case they find the investment riskier (Lewis & Thomas, 1992:33-39). There are different kinds of risks for an investment business and financial risks are generally based on the investment. Other factors, such as the whole economic condition, environmental and industry situation, are general risks and almost all the investments have to suffer from it.

Frank (1989) presents a very interesting example of the different type of risks: An investor who has invested in a new company would be worried of the default risk, as many companies fail in their initial years. Similarly the fluctuation in the price is the worry of the investor investing in the stock market. Diversified investor is worried about the overall market risk. However, non-diversified investor possesses both market and other specified risks for that particular portfolio. Finally a security investor possesses exchange rate risks for their investment.

2.5.1 Measuring risk

Risk is measured in terms of the total return, both income and capital gains. According to Lewis & Thomas (1992), while measuring the risk of an investment, the degree of uncertainty present in a given situation is measured. In this chapter some common techniques to measure risks across different classes of investments are discussed.

Computing standard deviation of a variable distribution of possible values is a widely used technique to measure risk. If the distribution is found to be widely dispersed then the standard deviation will be higher, which means that the chances

of the variable being closer to the expected value would be faint. Therefore, the higher standard deviation means higher fluctuation in the expected value, thus higher risk. On the other hand if the distribution is not dispersed widely, the standard deviation would be lower. As the result value will not be fluctuating a lot from the expected value which insures lesser risk. (Timothy and Joseph, 2003:162-165)

As the size of the different companies cannot be exactly the same it will not be possible to compare their risks calculated by standard deviation. Therefore, another technique which measures the relative risk must be used. According to Timothy and Joseph (2003:168-169) the coefficient of variation (CV) is used to compute the relative risk by relating standard deviation with mean. The co-efficient of variation computes the standard deviations percentage of mean, which makes it possible to compare the risks of different entities regardless of their size.

2.5.2 Type of risk

2.5.2.1 Business risk

Business risk is the uncertainty a company possesses with its Earnings before Interest and Tax (EBIT) also known as operating income. The higher the uncertainty of a company's operating income, the higher the risk. Operating income is calculated by decreasing the operating expenses which include the cost of goods sold, depreciation and other operating expenses from the total revenue generated in the firm. As the business factors like sales, variable expenses and depreciation is not the same for the different accounting periods, business risk occurs. According to Frank (1989:455-458), as the volatility of the earning series over the time cannot guarantee a fixed future earning business risk arises in an entity. Calculation of business risk is done by taking the historical earning series and computing the coefficient of variation of the operating earnings done in the previous years.

According to Charles and Patricia (1983) sales volatility and operating leverage are the two factors that affect the business risk. Sales volatility is the major factor determining the operating earnings volatility. Sales is affected by the factors like

advertising, pricing overall economy, consumers buying behaviour and a lot of other factors, which is out of control of the management. Sales volatility can be calculated by the coefficient of variation of sales for a given specific time period.

Operating leverage is affected by unpredictable operating earnings of the company which is caused by the fixed cost. The fixed production cost mean the operating profit will vary more than the sales. In case of an economic boom, the percentage of profit is far higher than the percentage increase in sales. Similarly in bad economic situations profit will decline more than the sales do. This situation is because the fixed cost will be the same all the time.

2.5.2.2 Financial risk

Earning before tax is the result of interest and/or amortization subtracted from the earnings before interest and tax. The additional uncertainty created by the debt obligations in a company is known as the financial risk. If a company does not have any debt obligations then they will not have any financial risk. Financial risk is calculated by subtracting the coefficient of interest expenses from the coefficient of operating earnings (Timothy and Joseph 2003:172).

(See Appendix 5 for the Formula to Calculate Different Risks)

2.5.2.3 Other risks

Market risks, industry risks, overall economic situations are the other major risks which are far more unpredictable. No one knows exactly if there will be economic recession or economic boom in the future. Natural disasters or even a security threat can make a huge difference in the future market price. Similarly the whole industry could be affected by new technology or with new rules and regulations.

2.5.2.3.1 Economy

Economy and the stock market have a direct relationship. Looking at the current and future economic predictions the investors looks forward to invest their assets. According to Chordia, Sarkar & Subrahmanyam (2005), negative information usually shocks the stock market and as a result investors opt for safer assets.

Investors are very sensitive towards any major events or news as a result fluctuation in the stock price can be seen immediately after any major events. Similarly, inflation is another factor that has one of the biggest impacts to change the future value. If investors see a booming situation then they invest most of their assets whereas an unpromising economy forces the investors to keep their assets in the safer side. For example Swaminathan & Chordia`s article published in the Journal of Finance in the year 2000 demonstrates the auto-correlations between trading volume and the stock return. Likewise the basic economic rule of demand and supply also significantly influences the stock prices. If many investors prefer to buy a particular stock then the value increases on the other hand if many investors are willing to sell their stocks then the stock price falls.

2.5.2.3.2 Market risk

The market factors affecting the future value of an investment bring market risk into play. Interest rate is one of the major market risks of an investment. For instance an announcement to decrease or increase the interest rate would make major changes in the future price of an investment. The currency market is another factor that comes under market risk. As most of the public companies trade worldwide and their products have foreign customers, it is obvious that they would also face the currency exchange risk which can be very costly for a company.

Unpredictability of the future price of the commodities like oil, steel, gold which has a direct correlation with the overall economy also adds to the market risk of an investment. For example Alam & Uddin (2009) explored empirical evidence between the relationship of interest rate and stock price and they found out: *"Changes of interest rates have negative relationship with changes of share price"*.

2.5.2.3.3 Industry

Industry refers a group of companies working in the same field, having same or similar products and/or services. The industrial environment is a major risk for the outcome of the future value of an investment. All the industry has their unique

risk factors; some of the industries have higher risk whereas others have lower risks. The difference in return rate, technologies used, research and development done in the industry, competitor industries are the major factors that affect industry risk. (Foster, 1978)

2.5.3 Relating Risk and Return

Ideally, an investor would be looking to make a balanced approach to the possible risks and the average rate of return on an investment. Different investors have different ways of dealing with risk and the gaining opportunity. Some investors are risk averse and as a result they get very low rate of return whereas others take risky investment decisions and end up gaining a higher rate of return.

 It is the investors own choice to either look for an investment with higher rate of return or look for a safe one. Investors depending upon their resources can invest in domestic stocks or international stocks, worldwide bond market, emerging market, real state and several other possible investment opportunities.

  One way of achieving a balance between risk and return could be a well-diversified portfolio. There are several models relating the risk and gain of an investment. Capital Asset Pricing Model (CAPM) is one of the famous models to access risk with gain. According to Timothy and Joseph (2003:181) CAPM is used to determine the required rate of return for assets if it would be added to a well-diversified portfolio, assuming the asset does not have a diversifiable risk.

3 BASIC ACCOUNTING FINANCIAL STATEMENTS

Income statement, balance sheet and statement of cash flow are the basic and the most important financial statements which interprets the quantitative data's of a company's performance. Whereas foot notes have the qualitative explanation for the major transactions and the accounting policy adopted while formulating the financial statements. The publicly traded companies publish their financial statements quarterly.

3.1 Income Statement

Income statement measures the company's profitability over a period of time. In the income statement, the net income is calculated by subtracting all the expenses from income. According to Patrick, Ralph, Barry & Susan (2002:63-92), income statement provides the information of the transactions occurred in a certain period of time called accounting period. Expenses include purchase, administrative expenses, selling expenses, depreciation, amortization expenses and income tax paid. Initially gross profit is calculated by subtracting cost of goods sold from net sales. Cost of goods sold is the expense occurred from the sales of the goods. Labour cost, raw materials and overhead expenses occurred during the sales period falls under the cost of goods sold category.

Operating income is calculated by subtracting the depreciation and the other selling and administrative expenses. From the operating income, interest and/or amortization is paid which will result in earning before tax income of the entity. Finally, income tax is paid from earning before tax resulting in net profit. Management decides if they want to pay dividends or not. If they do pay dividends then preferred dividends are paid first and afterwards common stock holders' dividends are paid. The residue income also known as the retained earnings are reinvested in the firm. (Charles and Patricia, 1983:24-27)

(See Appendix 1 for an Example of Income Statement)

3.2 Balance Sheet

A firm's assets, liabilities and equity at a given time period are presented in the balance sheet. There are two sub accounts in balance sheet. Assets account is the first one, which includes all the current and fixed assets of the company. Current assets include cash, market securities, account receivable, inventories, prepaid expenses etc. Current assets also named as working capital provide short-term benefit for the entity. The other items which fall under assets are property, plant, equipment, goodwill, intangibles, long term investments, note receivable and other long term assets.

Additionally, the other sub account includes all the liabilities and equity. Accounts payable, accrued expenses, notes payable, short term debt are the major components of current liabilities. While total long term debt, deferred income tax and minority interest added to the current liabilities sums up the total liabilities. Total liabilities summed up with total equity make total liabilities & shareholder´s equity, which is always equal to the total assets. (Frank, 1989)

(See Appendix 2 for an Example of Balance Sheet)

3.3 Statement of Cash Flow

Statement of cash flow shows how cash flows in and out of the company. Cash generated by the operating, investing and financing activities are shown in the statement of cash flow. Furthermore statement of cash flow shows the overall net increase or decrease in cash of the firm. According to Patrick et al (2002:99), cash flow helps the investors and creditors to access the ability of the firm to generate positive future cash flow, ability to meet the debt obligations and to shed light on the cash and non-cash aspect of the investing and financial transactions.

 Operating activities includes net income, depreciation, the increase or decrease in marketable securities, accounts receivable, inventory, prepaid expenses, account payable, and accrued expenses. The cash involved in purchase or sales of fixed assets falls under investing activities. Finally sales and retirement of notes, preferred and common stock, other corporate securities and bonds falls under

financial activities in the statement of cash flow report. (Timothy and Joseph, 2003:76-79)

(See appendix 3 for an Example of Cash flow)

3.4 Footnotes

The footnote gives a detailed description of reporting policies and the practices companies have adopted. It is impossible to present understandable financial statements without some explanations as all the information cannot be shown on the face of the statement. Although the quantitative information is shown in the major financial statements, the foot note provides the vital qualitative understanding of the financial report. Footnotes have two kinds of information; initially the accounting method company chooses to formulate its financial statements. The second one explains the major financial results mentioned in the financial statements like income statement, balance sheet and statement of cash flow. (Charles and Patricia, 1983:79)

4 FINANCIAL STATEMENT ANALYSIS

Financial statements are used to evaluate a company's financial performance and position. Proper analysis of a financial statement helps to obtain useful financial information, which can be used for decision making. The past and present financial situation of a company can be obtained from financial statement. Future predictions can also be done through the further analysis of historical financial statements.

4.1 Financial Ratios

Financial ratio is the numeric outcome obtained by dividing one financial data with other and is used to express the relativity of different financial variables. Balance sheet and income statement are the two most important and most commonly used sources of financial information when calculating ratios. According to Woo & Baker (2005), unseen and unnoticed data when observed individually would be expressed by the financial ratios through the expression of several data's as ratios. Financial ratio analysis involves the calculation and analysis of ratios that use data from one, two or more financial statements.

4.1.1 Liquidity Ratios

According to Chordia et al (2005), liquidity is the ability of a company to sell large quantity of assets at a reasonable price to meet its short term financial obligations. Liquidity ratio determines if a particular company has enough resources to pay its current liabilities, which are due within a year.

4.1.1.1 Current Ratio

Current liabilities like accounts payable, dividends, taxes due within one year, and short term bank loans are divided from current assets like cash, short term market securities, account receivable, inventories and prepaid expenses to obtain current

ratio. Ideally a ratio of 1 means short term assets equals to the short term liabilities, companies prefer to have current ratio of 1.5 to 2. (Foster, 1978)

4.1.1.2 Quick Ratios

Quick ratio or acid test ratio shows the ability of the firm to pay its current liabilities if they are due immediately. Since the liquidation of inventories cannot be done overnight, the concept of quick ratio has formed. Quick ratio makes sure the company has enough quick assets to pay its short term obligations. Quick ratio has quick assets like cash, short term market securities and account receivable as the numerator while current liabilities as the denominator. (Horngren, Harrison & Bamber, 1999:784)

4.1.2 Leverage Ratio

Leverage ratio shows the debt obligations a firm holds along with the shareholder's equity. Higher leverage ratio for a company means high debt hence a very risky investment. This ratio group is used to demonstrate the company's ability to meet its financial obligations.

4.1.2.1 Total Debt to Equity Ratio

Charles and Patricia (1983:219) reveal the use of total debt to equity ratio to determine the entity´s ability to pay long term debts. Total debt to equity ratio is a percentage of creditors funding for a dollar investment of the shareholder. The extent of firms financing controlled by the external parties is shown in the ratio. Calculation of the ratio is done by including long term debts as the numerator whereas the shareholders equity as the denominator.

4.1.2.2 Long Term Debt to Equity Ratio

This ratio shows the long-run ability of a firm to meet its debt obligations. It also shows to what extent the long term debt is used in the firm. Percentage of the long term debts for a dollar of shareholders equity is revealed by the ratio.
(Woo & Baker 2005)

4.1.3 Profitability ratio

A firm's ability to generate revenue in access of the expenses can be seen through profitability ratio. A company's overall efficiency and performance can also be accessed through profitability ratio. The major profitability ratios According to Timothy and Joseph 2003 (99-103) are return on assets, return on equity and return on revenue.

4.1.3.1 Return on Total Assets

Return on assets ratio shows the overall rate of return on the total assets of the company. In other word this ratio is to figure out how efficiently total assets has been utilized by the firm. The net income a company achieves during an accounting period is compared to the total assets of the company to determine return on total assets ratio.

4.1.3.2 Return on Equity

Return on equity ratio shows efficiency of the company to utilize the common stock holder's equity in the firm. The amount of net income a common shareholder receives for a dollar of his/her equity is calculated by return in equity ratio.

4.1.3.3 Return on Revenue

Return on revenue ratio shows the percentage of sales revenue spent in cost of goods sold, administrative and selling expenses for a dollar of sales revenue. The operating income to sales ratio can be used to compute the breakeven of the company.

4.1.3   Turnover ratio

Turnover ratio shows the company´s ability to achieve the maximum revenue by using its resources properly. According to Baruch (1974) sales revenue remains as the numerator whereas assets, account receivables, inventory etc. as the denominator while calculating the turnover ratio. According to him the following ratios are the major turnover ratios.

4.1.3.1 Total Asset Turnover

It shows how many times the annual sales crosses the total assets. This gives idea of how much dollars of sales has been achieved for an asset of one.

4.1.3.2 Account receivable turnover

This ratio is to show the amount of credit sales of a firm in a calendar year. The total sale is divided by the total accounts receivable to form the account receivable turnover ratio. Account receivable turnover ratio divided by 365 gives the average collection period of credit sales. This ratio can be used by the management to ensure a healthy receivable in the future.

4.1.3.3 Inventory Turnover Sales

Inventory turnover ratio is used to show the number of times inventory is sold or used in the firm during the financial period. Companies prefer a profitable rate of inventory turnover, which is neither too high nor too low. Low inventory turnover sales ratio suggests the company has too much inventory and higher ratio means the inventory is too low which could result a possible loss of sales opportunity.

4.2 Cross Sectional Statement

The cross sectional statement contains common size statement and financial ratio analysis. In both of these techniques, the result of the specific firm is calculated and compared to some bench marks. Those bench marks could be the average of the industry or other firms result or to the idea bench mark (Foster, 1978). Financial scholars has been arguing to limit the cross sectional analysis of ratios well within the firms with similar comparable criteria. The factors like operating in the same industry, having similar sizes, using similar accounting methods and located in same geographical area ensures a healthier comparison of different companies. (Horngren et all, 1999)

4.2.1 Ideal Bench Mark

Comparative study of the ratios and the benchmarks are useful for both investors and the financial managers. Investors can use the information to analyse the credit risk whereas management can use the information to compare their business performance with similar operation or for the future decision making process.

Some of the ideal benchmarks are discussed in this section. For instant current ratio of greater than 1.50 is considered a good one, between 1.00 and 1.50 is descent, and less than 1.00 does not show good sign. Similarly working capital equivalent to at least 20 % of total annual operating expenses is considered as a fair one. When it comes to debt to assets, ratio of less than 30 % is considered a good one, 30 % to 55 % descent one and greater than 55 % poor one. Similarly operating profit margin of 25 % or greater is a good one, 10 % to 25 % is descent and less than 10 % is far below average. (2008, Northwest Farm Credit Service Report)

4.2.2 Industry Norms

Comparison of a firm's common size statement or the ratios with the industry norms is another important aspect of the financial statement analysis. Initially a set of companies within the same industry is taken afterwards the industry norm is calculated. Finally the industry norm is compared with the individual company's performance. Basically median, mean or the value weighted mean is used for the calculation of the industry mean.

While computing the industry norms the corporate diversification makes a huge impact in the result. Although the companies are in the same field, factors like being a subsidiary or another firm, having more than one end product could create problem in computing the industry norm. The economic condition in the different region and the accounting techniques adopted by these companies while computing ratios and financial statement also decreases the credibility of the calculation. (Charles and Patricia, 1983:100-101)

For example, putting Nokia Corporation and Apple Inc. in the same industry group won't be a wise idea although both of them produce smart phones. The reason is that Nokia produces all kind of phones whereas Apple produces smart phones, note books and other appliances.

4.2.3 Common Size Statement

This technique is ideal for comparing financial statements of firms with different sizes. This technique can be used for both intercompany and intra company comparison. As the total components in the financial statement are broken into the percentage value, comparison with other firms becomes much easier.

For example, in an income statement total income is considered to be 100% and then the percentage value of operating expenses, tax, interest and net income are summed up to make 100%. Similarly, in the balance sheet the total assets is assumed to be 100% and then the rest of the assets, liabilities and shareholders' equity are computed as a percentage value of total assets. According to Foster (1978) "*One way of controlling for these size differences is to express the components of the balance sheet as a percentage of total assets and the components of the income statement as a percentage of total revenue*".

4.2.4 Comparative Financial Ratio Analysis

Financial ratio of a company can be compared with the ratio of another company or with the industry norms. The comparison shows the performance of an individual firm in comparison to its competitors or with the average of the industry. Cross sectional analysis of the financial ratios along with the trend from the previous years is one of the best comparison methods of financial statements.

4.2.5 Industry Differences in Financial Ratios

Industry characteristics are the major factors which makes the comparison of the different industries challenging. There are different factors that support the industry differences in the financial ratios. The product life is a very important factor that affects the different ratios. Products with short life like newspaper and

highly perishable products will have low inventory and high turnover. Similarly holding cost is another factor to consider, some products have low holding cost while rest have high holding cost for an inventory. Products like petroleum which needs a tunnel for transportation, gas station, lorry has higher holding cost when comparison to a vegetable shop.

The third and the most important factor to consider is the production period. If the production period is high then the inventories will be higher and the turnover will be lower. Mining industries for example hold a lot of raw, under and semi ready products as a result higher Inventory ratio is seen. Therefore the industry difference makes the comparison of the ratios challenging. (Foster, 1978)

4.3 Time Series Technique

Time series technique is a very widely used technique in financial statement analysis. The performance over several years or quarters is compared in the time series. This method is also used for inter-company financial performances comparison. Trend developed from time series analysis can be used to predict future earnings, sales or ratio (Timothy and Joseph, 2003).

Estimation of the future earning is one of the most important factors the investors take into consideration before investing. The positive future is what drives the investors into the company. Meanwhile dubious future means fewer investors interested into the company hence decline in the stock prices.

According to Charles and Patricia (1983:99), by looking at the trend developed through the time series analysis of financial statements and its ratios, one can see whether the performance of a company is falling, rising or is relatively constant. Time series analysis is also very helpful to make comparison of a company's performances over the time period. Intra and intercompany comparison can be done with the time series technique combined along with the common size technique. In the empirical part the real cases of companies time series comparison is presented.

5 CASE COMPANIES USED FOR THE RESEARCH

For the purpose of this research, few companies in the same industry with the same end products were selected. This criterion makes comparison easier and effective as the companies have almost the same production process. The age of inventory and most of the other parameters are also in common. In this research study, four automotive companies are chosen for comparison. Toyota, Nissan, Ford and General Motors are the four automotive companies selected for the comparative study. These companies are among the major companies in the automotive industry.

5.1 Toyota Motor Corporation

Toyota Motor Corporation is a multinational company founded in 1937 and headquartered in Toyota, Aichi, Japan. Toyota was world's largest automobile manufacturer by production in 2010. In 1936 Toyota introduced its first passenger car, the Toyota AA, after which the brand name "Toyoda" was replaced by "Toyota". Total production output for Toyota motors in 2011 has been 7,308,039 units, with revenue of 18.99 trillion yen and profit of 208.18 billion yen. (Toyota Motors)

5.2 Nissan Motor Company Ltd

Nissan Motor Company Ltd is a multinational automaker headquartered in Nishi-ku, Yokohama, Japan. In the home country Nissan became the second largest car manufacturer in 2011, with Toyota still dominating the first position. Nissan Motor Corporation has achieved production output of 4,080,588 units in 2010. Similarly the revenue of 8.773 trillion yen with profit of 319.22 billion yen was reached in 2011 with the support of 155,099 employers. (Nissan Motor Company)

5.3 General Motors Company (GM)

General Motors Company is an American multinational automotive corporation which leads Toyota in sales volume and became the biggest in 2011 headquartered in Detroit, Michigan. General Motors have their production process in 31 countries, and sells its products in about 157 countries worldwide. In 2011 General Motors achieved staggering turnover of 150.3 billion US dollar and the net income of 7.6 billion US dollar. In 2012 GM had over 202,000 employees supporting the company's production and distribution process. (General Motors Company)

5.4 Ford Motor Company

Ford Motor Company was founded in 1903 by Henry Ford. It is headquartered in Dearborn, Michigan, U.S. Ford is the second largest automaker in the U.S. and the fifth-largest in the world based on annual vehicle sales in 2010. In 2011 Ford managed to achieve 136.26 billion US dollars of revenue resulting in 20.21 billion US dollars of profit. Total numbers of employer in Ford were 164000 in 2011. (Ford Motor Company)

6 CALCULATIONS

6.1 Calculating the Co-efficient of Standard Deviation

The co-efficient of standard deviation is calculated to measure the riskiness of a company. The co-efficient of standard deviation of total sales from year 2008 to 2011 is calculated to demonstrate the fluctuation of the company's sales over the past four years. The calculation of the standard deviation was done with the formula which could be seen in the Appendix 5.

6.2 Computing Ratios

For the ratio calculation, the secondary data available as the company's financial statements was used. The formula from the Appendix 5 was used for the calculation of the financial ratios. Each company´s financial ratios over the year 2008, 2009, 20010 and 2011 was calculated in the excel file to make inter and intra company comparison.

Current and quick ratios are the two liquidity ratios calculated for all the companies. Similarly, leverage ratios included long term debt to equity and total debt to equity. The profitability ratios calculated were return on total assets, return on equity and expenses to revenue. Likewise the total asset turnover, account receivable turnover and the inventory turnover were calculated under the turnover ratios.

6.3 Common Size Statement

For the purpose of common size analysis the financial statements of the four automotive companies is transformed into the percentage of the total value of the particular company's financial statement. For instant in the balance sheet of the companies, the total assets is assumed to be 100% and the rest; assets, liabilities and equity are calculated in the percentage value of total assets. This method shows how much of assets, liabilities and shareholder´s equity exist in the company.

Similarly, the components of the income statement have been arranged as the percentage value of the total revenue. The expenses, interest paid, taxes, net income along with all the other components of the income statement have been converted into percentage values of the total revenue. In the empirical analysis the common size data is analysed for all the four companies together respectively.

Likewise while analysing the financial statement with time series technique, data of year 2008 is taken as the base year and the rest years 2009, 2010 and 2011 performances are computed into the percentage value of the year 2008´s statement. This method makes sure the comparison is not done by counting the table, instead is done by looking at the percentage change from the previous years. Although all the financial statements with a previous track record can be transformed into the common size statement, the annual report of 2008 has been used as the base.

7 RESEARCH METHODOLOGY

Principally research refers to collecting and analysing existing data to draw conclusions, make suggestions and suggest further research areas. The research problem of this research is how to analyse company's financial statement. The solution is to compare the performance of an individual company with the other companies. The other possible solution is to compare the present financial position with the previous years´ records.

Two research methods commonly used by the researchers are qualitative and quantitative methods. Quantitative method refers to the mathematical and statistical interpretation of the result. On the other hand qualitative research method is not a structured method but a subjective one explaining the inner thoughts and emotions of the respondent. In the empirical part of this thesis the qualitative and quantitative research method are used.

Initially the secondary data of the different companies' performance over the years have been taken as the reference. The secondary data includes the balance sheet, income statement and the cash flow statement of the four automotive companies for the year 2008, 2009, 2010 and 2011. Annual financial statements of these four companies have been taken as secondary data. The companies included in research are Nissan Motors, Toyota Motors, Ford Motors and General Motors.

Secondary data is used to compute the financial ratios, make a common size statement and calculate the standard deviation of the sales volatility in an excel file. After the calculation of ratios and statements, they are arranged in a comparative form. Then the quantitative comparison of intra companies, inter companies along with the combination of both inter and intra company is done. Furthermore the quantitative comparison is supported by my qualitative comments and the information borrowed from the footnotes of the respective company's financial statements.

7.1 Quantitative Method

Quantitative research is mathematically structured and the data is interpreted in graphs, charts and other statistical form. This method is suitable for either formation or for the use of a mathematical model, theory or other hypothesis. This method is widely used in psychology, political sciences, sociology and economics.

Qualitative research method shed light only on the particular case study; the generalization of the whole issue cannot be done through this method. According to Kent (2007), qualitative data are the numeric records for example the magnitudes or the calibrations recorded in respect of the group, organization or an individual. The idea of qualitative research is to collect the numerical data from the participants willing to take part in the research then to use the data's for further analysis. The use of the statistical software's like statistical package for the social sciences (SPSS) can be done for the data interpretation. In this research, the secondary data is taken and the excel file is used for the calculation and interpretation.

7.2 Qualitative Method

In the qualitative method of research the researcher does the subjective interpretation of the result. Words, ideas and depth analysis of the subject matter are done in this technique. Qualitative research aims to gather an in-depth understanding of the subject matter. Research methods consisting of the techniques like interviews, observation, and case study fall under qualitative research method (White, 200:28).

According to Salkind (2003:209-214) the examples of the qualitative research method could be case study, focus group, depth interviews and projective techniques. For the reliability and validity of the research, researchers take a descent sample group, neither too big nor too small. The credibility of the qualitative research method lies upon the ability of the method to answer who, why, how and what of the subject matter. In this thesis I have analysed the pre

calculated ratios, cross sectional and time series statements with both qualitative and quantitative research method.

7.3 Validity and Reliability

Validity is a tool used to measure the effectiveness of a research method (Chisnall, 1977). In this thesis I have applied both qualitative and quantitative method to read the financial statement of the automotive companies. Towards the end of the thesis one can easily see the success of the two research methods in getting the objective of the research. As stated by Gummesson (2000), the validity of a research is the success achieved by the researcher in choosing the method and hence achieving the objective of the research problem. As I have been able to achieve the objective of the thesis, which is to analyse the financial statement the result is valid.

According to Joppe (2000), reliability is the combination of consistency of the result over the time, representation of the study population and possibility of the reproduction of the result using the same methodology. Mistake while calculating the ratios, computing trend and common size statement could have easily happened. Similarly, mistakes while copying the data to excel from financial statements or from excel to word could have easily happened, in spite of double-triple checking. In spite of those possible mistakes the objective of the thesis, which is to be able to analyse the financial statements has been achieved, so the research has succeeded well in this sense and can be concluded as a reliable one. On the other hand the reliability of the data might have some question marks but the procedure itself is reliable as it has been adopted by several researchers.

8 EMPIRICAL ANALYSIS

8.1 Comparing Risk with Average Gain

This section shows a bar diagram representation of the average gain and the risk of the four automotive companies. The company's riskiness is computed with the coefficient of standard deviation of the total revenue of the particular companies. The co-efficient of standard deviation shows the fluctuation of the sales over the period of 2008, 2009, 2010 and 2011. Similarly, the average rate of return on assets is also calculated for each company and compared with each case company's risk.
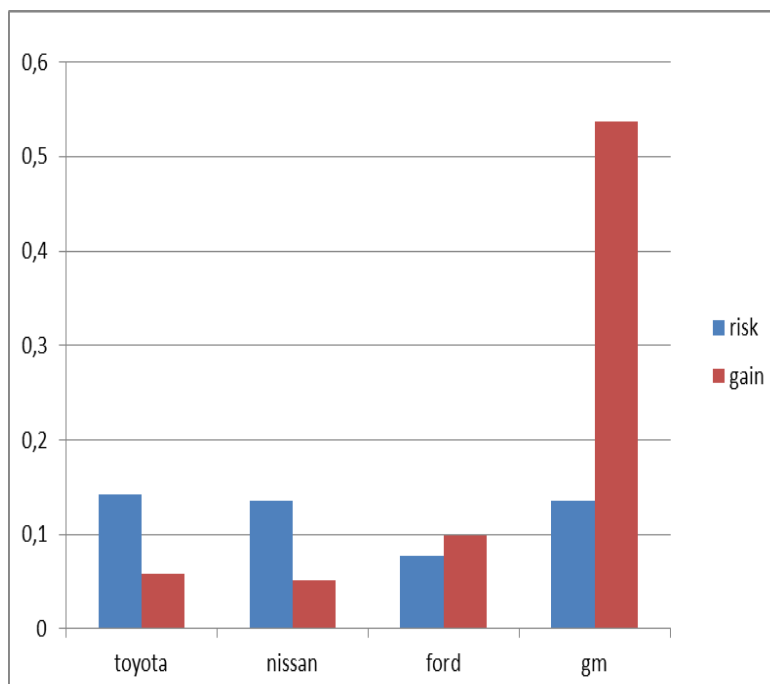
Figure 1. Average Risk and Gain of the Four Companies

Figure 1 shows the risk and the average return of the four companies. One can see that the automotive industry has a lot of risks but very low gain. General Motors has the best results because it had made a lot of profit in 2009, 77% on the total assets. The reason behind the profit was that they sold their property of 126,966 million US dollars in 2009. As the sales of property are also added in the income statement higher profit was achieved.

Had General Motors not sold their properties in 2009, the result of General Motors in comparison with the other companies would look even worse. The expected risk and return comparison, if the sales of the properties would not have been done in 2009 is expressed below in Figure 2. The best result is for Ford, whose risk is much lower than the risk of other companies, whereas rate of return is also much higher than its competitors.
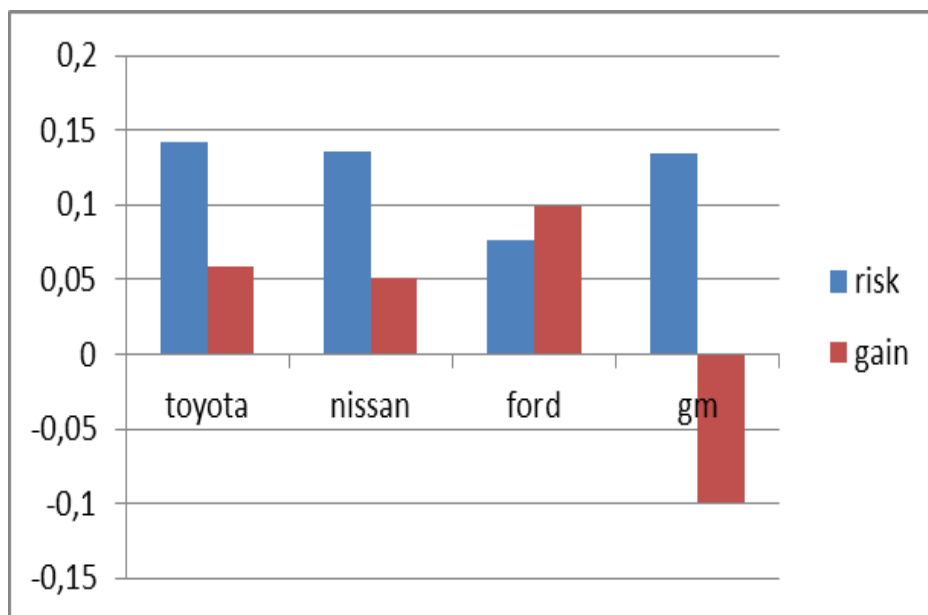
Figure 2. Average Risk and Gain of the Four Companies without Sold Property

8.2 Inter Company Comparison

Comparing financial statements and ratios of different companies is done under inter- company comparison. Cross-sectional analysis along with the financial ratio analysis is the major intercompany comparison technique. Common sized cross sectional analysis of the income statement and balance sheet is done to show the performances of these different companies. In the financial ratio analysis, the ratios of the four companies are compared against each other's respective ratios. Year 2011 has been used for the purpose of intercompany comparison.

8.2.1 Common Size Statement

While making the comparative study of the company's financial data, the size difference acts as the major obstacle for the comparison. This difficulty while comparing the financial statement of different-sized companies leads to the common size statement, where all the factors in the statement are expressed in the percentage of the total value.

Table 1. Common Size Balance Sheet 2011

	Toyota	Nissan	Ford	GM
Assets				
Cash and Short Term Investments	11,8	10,8	9,6	21,9
Total Receivables, Net	19,8	31,7	44,0	6,9
Total Inventory	4,4	9,1	3,3	9,9
Total Current Assets	39,7	59,1	57,0	41,7
Property/Plant/Equipment, Total - Net	21,2	33,9	12,5	15,9
Long Term Investments	18,1	3,6	19,3	4,7
Other Long Term Assets, Total	2,2	2,1	2,7	4,4
Total Assets	100,0	100,0	100,0	100,0
Accounts Payable	5,0	11,0	9,9	16,9
Accrued Expenses	5,9	5,4	9,6	15,7
Notes Payable/Short Term Debt	10,7	7,9	0,0	1,2
Total Current Liabilities	36,2	40,8	19,5	33,8
Total Long Term Debt	21,6	19,8	55,8	8,1
Other Liabilities, Total	2,8	4,6	14,6	31,1
Total Liabilities	65,3	72,6	91,6	73,6
Total Equity	34,7	27,4	8,4	26,4
Total Liabilities & Equity	100,0	100,0	100	100

The common size balance sheet of the four automotive companies is illustrated in table 1. The table was developed by calculating the financial report of those companies in an Excel file.

8.2.1.1 Cash and Short Term Investments

One can see from table 1 that General Motors (21.9%) has the highest amount of cash and short-term investment, compared to 11.8%, 10.8%, and 9.6% respectively for Toyota, Nissan and Ford. This shows General Motors can do much better than its competitors in its liquidity state. It is very important for a company to have balanced amount of easily liquid able assets, to cover up the unexpected large withdrawals in a short notice. On the other hand holding a large amount of liquid assets would have a lower yield on the assets. As liquid assets have lower opportunity cost, lower profit is resulted for the companies having lot of cash and short term investments.

8.2.1.2 Accounts Payable and Receivables

Similarly, to the table 1 we can see General Motors has very lower accounts receivable and higher account payable in comparison to other motor companies. 6.9% of total assets is to be receivable whereas 16.9 % of the equity and liabilities is to be payable for General Motors. This shows that the management has been delaying the accounts payable and has been taking the accounts receiable earlier, which increases the cash-in and reduces the cash-out.

 On the other hand Toyota´s (19.8%: 5%), Nissan´s (31.7%: 11%), Ford´s (44%: 9.4%) account receivable to account payable ratio shows that the rest companies have much higher account receivables than the account payable. The rest have 3 to 4 times more receivables than payable´s. If the delicate balance between account receivable and account payable is not maintained then the firm runs out of cash. In the slow economic condition the risk of running out of cash becomes even higher. Clever management does not only watch out for sales and profits but they also make balanced payable and receivable accounts. (Shapiro, 2009)

8.2.1.3 Inventory

Inventory stands 4.4%, 9.1%, 3.3% and 9.9% respectively for Toyota, Nissan, Ford and General Motors. It suggests that Nissan and General Motors have higher amounts of Inventories than the other two. Having inventory makes sure that the selling opportunity is not lost and the supply to the customers can be relatively easy and fast. It is not profitable for a firm to have a lot of inventory because the holding cost is high and the opportunity cost is low. Inventory is the assets that are either intended to sales, or are tied in the production process. Inventory is calculated by adding the previous year´s left over with the purchases made and then by subtracting the sum with the sold materials.

The accounting methods adopted by the company to determine the cost of inventory directly affect the financial statements. Generally the three inventory closing methods of first in first out, last in last out and average cost are adopted by companies. In case companies have different cost of goods sold for the production process in different times then these following methods would come into action. Here is a real case example which shows the impact of choosing the different inventory methods.

"Toyota Motor Corp.'s inventory value on Mar 31, 2011 would be $17,695 (in millions) if the FIFO inventory method were used instead of LIFO. Toyota Motor Corp.'s inventories, valued on a LIFO basis, on Mar 31, 2011 were $16,943. Toyota Motor Corp.'s inventories would have been $753 higher than reported on Mar 31, 2011 if the FIFO method had been used instead."(Stock Analysis on Net).

8.2.1.3.1 First-in, First-out (FIFO)

In this method the products produced first are sold first. Although the cost of production varies with time the goods produced previously is recorded in the income statement under this method. Whereas in the balance sheet the "cost of gods sold" of the items produced later is allocated as the end inventory.

8.2.1.3.2 Last-In, First-out (LIFO)

In this method the last unit making its way to the inventory is sold first. That means the older inventories would be left over at the end of the accounting period.

8.2.1.3.3 Average cost

This method is a rather straightforward one, where the average cost of the inventory is recorded in the financial statements.
(Patrick et al. 2002:242-244)

8.2.1.4 Current Assets

Assets that can be easily converted into cash are known as current assets. Current assets include cash, accounts receivable, inventory and marketable securities. In our case study Toyota has 39.7 %, Nissan has 59.1 %, Ford has 57% and General Motors has 41.7 % of current assets. This data shows that in case of liquidity Nissan and Ford can be favoured over the other two competitors. On the other hand the table also suggests that Nissan and Ford have not been able to invest their assets in long term investments which yield higher profit.

8.2.1.5 Property/plant/equipment

In this department Nissan tops the list with 33.9% against its counter parts, Toyota 21.2%, Ford 12.5% and General Motors 15.9%. The table suggests that Nissan has the highest amount of the assets invested in the plants, property and equipment that would have a long-term outcome for the company. Leasing could offer a solution to avoid a lot of investments into properties, plants and equipment. It all depends upon management's decision whether to lease or own. A balanced approach of leasing and owing should be made to reach an overall good performance of the company.

8.2.1.6 Long-term Investment

Ford had invested 19.3 % of its assets into long-term investments, Toyota has 18.1%, while Nissan has 3.6% and General Motors has 4.7%. It shows that Toyota and Ford have higher amounts of assets invested into long term investments. It is very important to make a balanced short term and long-term investment. Short-term investments are crucial for raising cash in case of liquidity

whereas long-term investments are expected to have longer effects in the earning portfolio of the company.

8.2.1.7 Current Assets and Current Liabilities

According to Patrick et al (2002:533) the liabilities whose obligations requires the liquidation of the current assets is known as current liabilities. In other word they are the total short-term loans and dues companies have to pay within a year or the operating cycle. If a company has lower current assets than the current liabilities then they would have to take loans to pay the liabilities.

In our case, Toyota (39.7%: 36.2%), Nissan (59.1%: 40.8%), Ford (57%: 19.5%), General Motors (41.7%: 33.8%) all can be considered a healthy current assets to current liabilities ratio. Ford has the highest ratio, after paying all the current liabilities they would still have 37.5% of total assets left alone in the current assets department. This suggests they have too much of the assets in liquidity situation holding a lot of opportunity cost. They could have rather invested those assets in other departments, which would ensure higher profit for the company.

8.2.1.8 Long-term Debts

According to Patrick et al (2002:548) the obligations that are not payable within a year or the operating cycle falls under long term debt category. The benefit of long-term debts is the lower interest rate for the liabilities. Toyota, Nissan, Ford and General Motors have respectively 21.6%, 19.8%, 55.8 %, 8.1% of total liabilities and equity into long term debts. Long-term debts are the debts and financial obligations companies have to pay in a long run.

The data in table 1 shows that Ford has a very high amount of long-term debts. That means a lot of interest should be paid which increases the financial risk of the company. Ford could have rather got the additional funding through shareholders equity as shareholders do not take any interest for the investments. Similarly General Motors has the least amount of long-term debts, which lowers the financial expenses.

8.2.1.9 Liabilities

Australian exposure draft defines liability as *"The future dispositions of economic benefits that a reporting entity is presently obliged to make to other entities as a result of past transactions or other past events"*.

A company's legal debts and obligations fall under this section. They would eventually be paid through the use of assets and the future yield of the company. Ford Motors has the highest amount of liabilities, which is 91.6%. The rest of the companies Toyota, Nissan and General Motors have 65.3%, 72.6% and 73.6% of liabilities respectively. It shows that these companies have lower debt obligation in comparison to Ford. It implies Ford has a lot of legal debts and obligations to be paid in the future. Having a lot of debts might lead to bankruptcy. It is recommended to accumulate assets for the company through equity capital than through debts obligations.

8.2.1.10 Equity

According to Patrick et al (2002), stockholders equity is the residue in the assets of a company after the deduction of its liabilities. If the equity is high then it means the company has very less amount of liabilities. On the other hand the negative equity suggests liability in the company is higher than their total assets. Ford has the lowest amount of equity, which stands only 8.4% of the total liabilities and equity. That means the amount of assets funded by the shareholders is only 8.4% of total assets. The other amount of assets is funded through short term and long term obligations, which not only take a lot of interest expenses but also adds a big burden of financial risk.

Similarly the rest of the companies have a healthy amount of equity, which is over one fourth of the assets. Equity holders are liable for all the profits and losses made by the company. For instant General Motors 26.4% of equity refers that in the overall company's assets 26.4% is funded by the equity while the other 73.6% through liabilities. A balanced approach towards the equity and liabilities is a must to a healthy growth of an organization.

8.2.1.11 Summary of   Balance Sheet

Toyota has the least amount of current assets 39.7%. This means they don't have much liquidable assets. In fact they have invested rest of their assets into property/plant/equipment, accounting 21.7% and into long-term investment, accounting 18.1% of the total assets. Management at Toyota has been very clever to just keep 39.7% of assets as current assets to cover up the 36.2% of current liabilities. The rest of the assets have been invested for the future outcome.

Similarly Toyota has a very low amount of long-term loans and obligations. Toyota Corporation has the lowest amount of liabilities 65.3% of total assets compared to 72.6%, 91.6% and 73.6% for the other companies. This shows it has the minimum amount of financial and leverage risks as most of the funding is done through equity financing.

Likewise, Nissan has the highest amount of current assets and current liabilities. After paying all the current liabilities from current assets Nissan will still have 18.3% of total assets left over, which remains un-invested. This means profit might be down for Nissan in the fiscal year. When the economy is not promising companies tend not to invest all of the assets, as it could be catastrophic to liquidate the invested assets. Nissan has higher amounts of property, plants and equipment investments 33.9% while they have invested the least in long-term investments. Overall balance sheet performance of Nissan is an average to the industry.

Ford Motors has the highest amount of account receivables and very low amount to be payable, i.e. 44%: 9.9%. It is not a healthy practice as they have too much of their assets stuck in the receivables department, which has practically no economic gain for the company. Unless the characteristics of receivables to fall under liquidable assets, it does not hold any gaining opportunity. Ford has a very high amount of current assets but a lower current liability suggesting it has a lot of assets in a stand-by situation left un- invested, the sum accounts for 37.5% of total assets. They also have the highest amount of the long-term debts, it does not sound healthy for Ford to have 37.5% of total assets un-invested and at the same

time have over 70% of the long-term debt obligations. They could have rather invested that left over money to pay their debts and decrease the interest expenses. The other interesting fact about Ford is it has the lowest amount of shareholders´ equity just 8.4% of total assets. Ford should reduce its debts and increase the equity capital to ensure a stable and less- risk future for the company.

On the other hand General Motors has a reasonably balanced overall performance. It has higher payables but lower receivable's 16.9% to 6.9% which means high cash in and low cash out. They also have balanced current assets and liabilities, which would insure the assets, is invested properly in the company.

8.2.2 Financial Ratio Analysis

Financial ratio analysis is one of the most important cross-sectional analysis tools. The four basic ratio categories liquidity, leverage, profitability and turnover are used for the comparisons. Initially each individual company's ratio is calculated from the financial statements and then they are compared against each other ratio. Although there are hundreds of the different ratios, I have chosen the following ratios for the purpose of this study. Some of the other ratios are very difficult to calculate and the general concept is similar to the ones which I have calculated and analysed.

8.2.2.1 Liquidity Ratio

As discussed in the theoretical section, liquidity is a company's ability to meet its short-term obligations. Current and quick ratios of the four companies are compared in the Table 2.

Table 2. Liquidity Ratio 2011

Ratios	Toyota	Nissan	Ford	GM
Current ratio	1.10	1.45	2.92	1.23
Quick ratio	0.98	1.22	2.75	0.94

Current ratio is the ratio of the current assets and current liabilities, it shows if a company is able to meet its short-term obligations or not. As shown in the table all the companies have the ratio over 1. That means they have enough current assets to settle the current liabilities.

All the companies can be trusted on their liquidity abilities, but having too much of current ratio suggests they have too much current assets that is left un-invested. The extra assets are wasted by the companies. For instance, Ford has a current ratio of 2.93, which is too high. Toyota has 1.10, Nissan and General Motors have 1.45 and 1.23 respectively. It is clear that Ford has too much of current assets left over. Quick ratio does not include the current assets like inventories as they are not believed to be easily liquidable. Ford has the maximum ratio of 2.75, while the others have the ratio around one.

8.2.2.2 Leverage Ratios

In this section long-term debt to equity and total debt to equity ratio are analysed. The following Table 3 shows the leverage ratio of the selected automotive companies in 2011.

Table 3. Leverage Ratio 2011

Ratios	Toyota	Nissan	Ford	GM
Long term debt to equity ratio	0.62	0.72	6.62	0.31
Total debt to equity	1.67	2.21	8.94	1.59

Long-term debt to equity refers to the ratio of the long-term debts and the shareholders equity. Toyota´s ratio of 0.62 refers along with 1 Euro of the shareholders equity; there is 0.62 euro of the long-term debts in the company. Having a lower long-term debt to equity ratio means the company has not taken much long term loans, which means they will not have to pay interests to pile up

the financial risk. Table 3 suggests General Motors has ratio of 0.31 which means only 31 cents of its long-term debts per Euro of equity is taken by the firm. Similarly, Ford has the highest ratio of 6.62, suggesting 6.62 times the equity of Ford is borrowed for long term financing.

Similarly, total debt to equity ratio refers to the extent creditors control the firm assets. In this case, Ford has the maximum ratio of 8.94, suggesting 8.94 times the shareholders equity is supported by the debts obligations. Nissan has the ratio of 2.21, Toyota 1.67 and General Motors 1.59. Ratio of 2 is an ideal one, which means just two times the shareholders equity, is funded by the external financing parties.

8.2.2.3 Profitability Ratio

Table 4. Profitability Ratio 2011

Ratios	Toyota	Nissan	Ford	GM
Return on total assets	0.01	0.03	0.11	0.06
Return on equity	0.04	0.13	1.35	0.19
Expenses on revenue	0.98	0.95	0.94	0.96

Profitability ratio shows the degree of profit the firm is making. Profitability ratio is calculated on the basis of the total revenue gained or the total equity invested in the firm. In this case, I have taken return on assets, return on equity and expense to revenue to check the automobile industries profitability. Table 4 can be used for the explanation of the ratios.

Return on total assets is the amount of net income given by the total assets. Ford´s highest ratio of 0.11 suggests, for 1 euro of assets the net income is 11 cents. It shows Ford has been managing its assets properly to achieve maximum profit. Also 0.01 for Toyota means Toyota gets 1cent net income for 1 euro of assets.

Return on equity is the ratio of net income available to the common stock holders. The ratio of 1.35 for Ford means 135% of profit has been gained over the shareholders equity in 2011. That is a huge rate of return achieved by the use of loan obligations. Sustainability and the durability of the rate of return is also another very important aspect. Toyota has the least of 0.04 giving just 4% rate of return for the shareholders equity. Nissan and General Motors with 0.13 and 0.19 respectively have a good return on equity.

Expenses to revenue means the amount of the revenue spend on the operating expenses. Toyota has the most expensive operating cycle that accounts for 98% of revenue. Automotive industry seems to have very high operating expenses; some other industry has lower expenses. For example, a coffee shop has very low variable expenses; if the sales are stable then the rate of return is much higher.

8.2.2.4 Turnover ratio

Table 5. Turnover ratio 2011

Ratios	Toyota	Nissan	Ford	GM
Total asset turnover	0.64	0.82	0.76	1.04
Account receivable turnover	3.22	2.58	1.73	15.10
Inventory turnover	14.56	8.93	23.09	10.49

In table 5, General Motor´s total asset turnover ratio of 1.04 means, sales in 2011 has been 1.04 times of the total assets. Similarly, total assets turnover of 0.64 for Toyota means only 64% revenues compared with the total assets has been achieved. Accounts receivable turnover ratio for General Motors of 15.10 means 15.10 times the account receivables has been sold. The higher the value the better it is as it means higher cash sales then the credit sales, which increases the cash inflow in the company. Ford has the worst value of 1.73 in account receivable

turnover that means only 1.73 times of the accounts receivables was sold, showing a very less cash inflow for the year.

On the other hand inventory turnover refers to how many times of the inventory the sales have been. Ford had 23.09 times of inventory being sold. Similarly Nissan only sold 8.93 times more than its inventory. The higher ratio shows the company had lower inventory for the year in accordance to the sales.

Table 6. Average Collection Period

	Toyota	Nissan	Ford	G M
Average collection period (days)	113.2	141.6	210.4	24.2

Account receivable turnover ratio is a very important ratio, as the ratios divided by 365 days of a year gives the average collection period for the company. Table 6 shows the average collection period for the four companies. General Motors collects cash from the sales in just 24.2 days. While Ford needs 210.4 days in average to collect its receivables. As there is no productivity of account receivables it is better to get them collected as soon as possible and re-invest the collected asset into the business.

8.3 Intra Company Comparison

In this section, analysis of companies' financial performances over the period of 2008-2011 is done. Intra company comparison of the four companies' financial statements and ratios for the period of 2008 to 2011 is done by the use of time series technique. Time series analysis of the income statement, balance sheet and financial ratios from year 2008 to 2011 has been featured under the intra company comparison.

8.3.1 Trend Statement

Choosing one year as the base year and then expressing the other years´ performance as the percentage of the base year's data constructs a trend statement. Under this section the trend of income statement for all the four companies used as our case companies are analysed. Data from the year 2008 is taken as the base and then the performance of the year 2009, 2010 and 2011 is shown in the percentage value of 2008´s data.

8.3.1.1 Income Statement of Toyota

Table 7. Trend Analysis of Toyota Motors Income Statement

Toyota	2011	2010	2009	2008
Total Revenue	72.2	72.1	78.1	100.0
Cost of Revenue, Total	77.2	77.5	85.8	100.0
Selling/General/Administrative Expenses, Total	76.4	84.8	101.5	100.0
Net Income	23.8	12.2	-25.4	100.0

Table 7 shows that sales have gone down in 2009 to 78.1% from 100% of 2008. The main reason has been the global economic crisis in the latter half of 2008. Sales became even worse in 2010 and remained constant throughout 2011.

Similarly, the cost of revenue has also gone down to 85.8% in 2009 but remained constant for 2010 and 2011. The same pattern can also be seen for the selling, general and administrative expenses except a slight increase in 2009. As sales had plummet down, net loss of 25.4% had occurred in 2009 for Toyota motors. Improving signs can be seen through the net profit of 12.2% in 2010 and 23.8% in 2011.

8.3.1.2 Income Statement of Nissan

Table 8 shows similar pattern for Nissan´s trend analysis of the income statement.
The revenue, cost of goods sold, and other expenses have been gradually
decreasing until 2010. Slightly better numbers were achieved in 2011, but still the
performance is not as good as in 2008. Heavy loss of 48.5% percentage in
comparison to 2008´s earning was seen in 2009. With the recovering economy,
income went up to 8.8% in 2010 and 66.2% in 2011 showing positive signs for
the company's future.

Table 8. Trend Analysis of Nissan Motors Income Statement

Nissan	2011	2010	2009	2008
Total Revenue	81.1	69.4	77.9	100.0
Cost of Revenue, Total	85.1	73.1	84.7	100.0
Selling/General/Administrative Expenses	66.4	65.1	89.6	100.0
Net Income	66.2	8.8	-48.5	100.0

8.3.1.3 Income Statement of Ford

Similarly, from Table 9 we can see the total revenue of Ford also went down in
2009 and then started being slightly better year by year and went on to 94.9% in
2011. The cost of goods sold have also hold the same pattern throughout the
period but Ford has been able to cut its selling, general and administrative
expenses in year 2010 and 2011. In spite of the growth in sales the selling,
administrative and other expenses has been around half of the expenditure of
2008. Hence, Ford has seen positive growth in net income by 18.4%, 44.4% and
136% respectively in 2009, 2010 and 2011. Recent performance is far better than
a loss of 100% in 2008.

Table 9. Trend Analysis of Ford Motors Income Statement

Ford	2011	2010	2009	2008
Total Revenue	94.9	89.8	81.0	100.0
Cost of Revenue, Total	87.0	81.0	77.5	100.0
Selling/General/Administrative Expenses, Total	50.3	51.0	61.3	100.0
Net profit	136.9	44.4	18.4	-100.0

8.3.1.4 Income Statement of General Motors

General Motors trend statement in table 10 shows the effects of recession in most of its elements except net income. Profit of 338.9 is the result of sold property in 2009 which amounted 126,966 million US dollar. Sales plummeted down to 70.8% in 2009 but went up slightly in 2010 to reach 101.7 % to the value of 100% of 2008. The cost of revenue has gone with the flow of the total revenue. General Motors has been able to cut their selling, general and administrative expenses to around 60% of the value of 100% in 2008, in spite of having the sales around the same level. As the result General Motors has been able to achieve profit after suffering a heavy loss´ in 2008.

Table 10. Trend Analysis of General Motors Income Statement

GM	2011	2010	2009	2008
Revenue	101.7	91.8	70.8	100.0
Cost of Revenue, Total	87.9	79.7	75.1	100.0
Selling Expenses	63.5	60.1	63.9	100.0
Net income	29.7	19.9	338.8	-100.0

8.3.1.5 Summary of the Trend Analysis

We were able to see four company's performance throughout the four years with the help of trend analysis. In this research, the income statement of most of the companies suggests the situation had been the worst with the recession and afterwards a sign of recovery was seen. Revenue went down in 2009 drastically and since then it has been getting better, a similar pattern in cost of goods sold has also been seen.

Ford and General Motors were able to cut their selling and administrative costs by a huge margin in the years 2010 and 2011, which resulted in a higher amount of profit. Nissan and Toyota´s profit went down radically in 2009; later signs of recovery have been seen. From the trend statement we can see General Motors had suffered huge amount of loss in 2008. The other interesting fact that came from the intercompany comparison is that two American companies suffered a loss in 2008 and then recovered in 2009 and onwards, while the Japanese companies suffered losses in 2009 and showed signs of recovering in 2010 and later.

8.3.2 Common Size Statements

In the common size statement the balance sheets of the four companies from 2008 to 2011 were analysed.

8.3.2.1 Toyotas Balance Sheet

From Table 11, one can see cash and short-term investments have increased in Toyota. It has been able to slightly minimize the inventories, which means they will not have a lot of assets in the form of raw materials, work-in-process goods or completely finished goods in the warehouse. Most of the items in the balance sheet have the same pattern throughout the time series, except the long term investment that went down in 2009 and again climbed up in 2011. It is very reasonable that the investment went down in 2009 because the situation was not promising at the peak of the economic crisis. In 2011, when the economic situation became better Toyota Motors increased its long term investments.

Table 11. Common Size Balance Sheet of Toyota in Time Series

Toyota	2011	2010	2009	2008
Cash and Short Term Investments	11.8	13.4	10.3	7.1
Total Receivables, Net	19.8	21.3	19.3	21.1
Total Inventory	4.4	4.7	5.0	5.6
Property/Plant/Equipment, Total - Net	21.2	22.1	25.5	24.1
Long Term Investments	18.1	13.6	13.5	17.0
Total Assets	100.0	100.0	100.0	100.0
Accounts Payable	5.0	6.4	4.5	6.8
Other Current Liabilities, Total	5.2	4.9	4.9	5.8
Total Long Term Debt	21.6	23.1	21.7	18.4
Total Equity	34.7	34.1	34.6	36.6
Liabilities & Equity	100.0	100.0	100.0	100.0

8.3.2.2 Nissans Balance Sheet

Table 12 shows Nissan has been holding slightly more cash than in the previous years that is 10.8% in 2011, compared to 5% in 2008. It means they are having bigger amounts of assets in the liquid form. As the result they have to decrease the investment in the plants, properties and equipment. 38.8% (2008) use of the assets in the plants, properties and equipment department went down to 33.9% in 2011. This pattern of decrease in investment in the plants and equipment might lead to less productivity in the future. Similarly, decline in long-term investment in the middle of recession has risen up again in 2011.

Table12. Common Size Balance Sheet of Nissan in Time Series

Nissan	2011	2010	2009	2008
Cash and Short Term Investments	10.8	8.4	7.4	5.0
Total Receivables, Net	31.7	31.3	29.7	32.2
Total Inventory	9.1	7.9	7.4	8.4
Property/Plant/Equipment, Total - Net	33.9	37.8	40.1	38.8
Long term investment	3.6	2.6	2.9	3.8
Total Assets	100.0	100.0	100.0	100.0
Accounts Payable	11.0	9.8	6.1	9.4
Other Current Liabilities	6.2	6.3	5.4	6.1
Total Long Term Debt	19.8	23.4	23.4	16.0
Total Equity	27.4	26.5	25.7	29.4
Total Liabilities & Shareholders' Equity	100.0	100.0	100.0	100.0

8.3.2.3 Fords Balance Sheet

Table 13 shows the common size balance sheet of Ford Motors analysed in time series. Ford has achieved slight growth in the properties, plants and equipment. This is an encouraging sign from the company to its stock holders as plants and properties bring revenue to the company in the future.

Accounts payable has increased to 9.9% in 2011 from 6 % of 2008, but the receivable has not been affected. Higher account payable means holding the cash out flow to the lower possible limit; it is a good sign for the company as the accounts payable can be used by the company as cash for its operation. Long term

debts have been cut off from 70.2% to 68.5% in 2009 and then to 63.1% in 2010 and finally to 55.8% in 2011 but they are still higher. The total equity is showing signs of recovery and finally it is 8.4% in 2011 from -7.3% of 2008 suggesting the liability caused by the previous year's losses has been marginalized finally in 2011.

Table13. Common Size Balance Sheet of Ford in Time Series

Ford	2011	2010	2009	2008
Cash and Short Term Investments	9.6	9.0	10.9	10.1
Total Receivables, Net	44.0	47.6	43.3	45.8
Total Inventory	3.3	3.6	2.6	3.0
Property/Plant/Equipment, Total	12.5	14.1	11.8	10.5
Long Term Investments	19.3	21.3	21.4	20.8
Total Assets	100.0	100.0	100.0	100.0
Accounts Payable	9.9	9.9	7.4	6.0
Total Long Term Debt	55.8	63.1	68.5	70.2
Total Equity	8.4	-0.4	-4.1	-7.3
Total Liabilities & Shareholder´s Equity	100.0	100.0	100.0	100.0

8.3.2.4 General Motors Balance Sheet

General Motors has also been generating more cash than before, which reached 21.9% in 2011 from 15.6% of 2008. It is very important for a company to hold enough cash to pay their current liabilities as liquidity of the other current assets cannot happen overnight. Inventories in GM have been in a decreasing trend from 14.5% of 2008 to 9.9% in 2011.

The properties, plants and equipment have drastically decreased from 44.1 % in 2008 to 15.9% in 2011; the reason was the sales of the properties in 2009. Similarly, GM has also decreased its long term debts while increased the shareholders equity throughout the time series, suggesting the loss made by the company in the recession has been marginalized.

Table14. Common Size Balance Sheet of GM in Time Series

GM	2011	2010	2009	2008
Cash and Short Term Investments	21.9	19.2	16.7	15.6
Total Receivables, Net	6.9	6.3	5.5	8.7
Total Inventory	9.9	8.7	7.4	14.5
Property/Plant/Equipment, Total - Net	15.9	13.8	13.7	44.1
Long Term Investments	4.7	7.3	7.0	2.4
Total Assets	100.0	100.0	100.0	100.0
Accounts Payable	16.9	15.5	13.7	24.4
Other Current Liabilities, Total	0.0	1.8	1.7	6.3
Total Long Term Debt	8.1	7.2	4.1	31.9
Total Equity	26.4	26.0	20.7	-94.0
Total Liabilities & Shareholders' Equity	100.0	100.0	100.0	100.0

8.3.3 Financial Ratios

Financial ratios of the different companies from the year 2008 to 2011 are compared individually, under the intra company comparison of the financial ratios.

8.3.3.1 Toyotas Financial Ratio

Table 15 suggests that liquidity ratios are improving for Toyota Motors. Current ratio has increased from 1.01 to 1.10 suggesting, 110 worth value of current asset for 100 current liabilities to be paid. In 2008 rate of return on assets was 0.05, whereas return on equity was 0.14. Negative profitability of 0.02 in assets and 0.04 in equity was noted in 2009. It shows the company ended making a loss in 2009. Its rate of return has been better from 2010 onwards, showing a positive growth sign for the company.

Table 15. Toyotas Financial Ratio in Time Series

Toyota	2011	2010	2009	2008
current ratio	1.10	1.22	1.07	1.01
quick ratio	0.98	1.09	0.93	0.86
long term debt to equity ratio	0.62	0.68	0.63	0.50
total debt to equity	1.67	1.71	1.68	1.51
return on total assets	0.01	0.01	-0.02	0.05
return on equity	0.04	0.02	-0.04	0.14
expenses to revenue	0.98	0.99	1.02	0.91
total asset turnover	0.64	0.62	0.71	0.81
account receivable turnover	3.22	2.94	3.65	3.83
inventory turnover	14.56	13.32	14.07	14.40

8.3.3.2 Nissans Financial Ratios

Table 16. Nissan´s Financial Ratio in Time Series

Nissan	2011	2010	2009	2008
current ratio	1.45	1.45	1.32	1.20
quick ratio	1.22	1.24	1.13	1.01
long term debt to equity ratio	0.72	0.88	0.91	0.54
total debt to equity	2.21	2.30	2.43	2.04
return on total assets	0.03	0.00	-0.02	0.04
return on equity	0.13	0.03	-0.07	0.14
Expenses on revenue	0.95	0.97	1.03	0.93
total asset turnover	0.82	0.74	0.82	0.91
account receivables turnover	2.58	2.35	2.77	2.82
inventory turnover	8.93	9.37	11.10	10.77

Healthy liquidity ratios of Nissan Corporation can be observed in Table 16. Ratio
is well above 1 and below 2, which means there are enough current assets to cover
the current liabilities. Leverage ratio has increased from previous years as Nissan
has more debts than before. The profitability of Nissan Corporation has been
better but the company is still not as profitable as it was before the economic
crisis of 2008-2009. Heavy loss was suffered in the fiscal year 2009, which
accounted for 2% of total assets and 7% of shareholders equity. Expenses on
revenue were well over the revenue collected in 2009, which was because the
sales plummeted and the fixed costs remain the same.

8.3.3.3 Fords Financial Ratio

Table 17. Fords Financial Ratio in Time Series

Ford	2011	2010	2009	2008
current ratio	2.92	2.78	3.07	3.38
quick ratio	2.75	2.62	2.93	3.21
long term debt to equity ratio	6.62	-154.51	-16.83	-9.65
total debt to equity	8.94	-207.45	-21.38	-12.04
return on total assets	0.11	0.04	0.01	-0.07
return on equity	1.35	-11.47	-0.13	0.93
expenses to revenue	0.94	0.94	0.98	1.09
total asset turnover	0.76	0.78	0.61	0.66
account receivables turnover	1.73	1.64	1.40	1.45
inventory turnover	23.09	21.79	23.07	22.24

Table 17 shows the financial ratio of Ford from the year 2008 to 2011. Liquidity ratio is very high for Ford. Although slight shrinkage has been seen recently it is still well over the ideal bench mark of 1 to 2. The table suggests that there are a lot of liquidable assets at Ford, which have not been invested. Leverage ratio is not healthy for Ford either; from 20008 to 2010 the ratio was in negative. This suggests that Ford had very high debt obligation, in fact even more than its total assets. Recently Ford has been able to pay most of its liabilities.

Shareholders equity in 2011 is in the positive because the liability in the company is less than the total assets. Still, they have a lot of debts but they have not used their current assets to pay the debts, which is very surprising. Profitability on the

total assets is satisfactory but in equity is still not acceptable. The overall ratio analysis shows a very bad period for Ford although the recently improving ratio can be promising.

8.3.3.4 General Motors Financial Ratio

Table 18. General Motors Financial Ratio in Time Series

GM	2011	2010	2009	2008
current ratio	1.23	1.13	1.13	0.59
quick ratio	0.94	0.87	0.94	0.41
long term debt to equity ratio	0.31	0.28	0.20	-0.34
total debt to equity	1.59	1.58	2.05	-1.22
return on total assets	0.06	0.04	0.77	-0.34
return on equity	0.19	0.12	0.78	0.36
expenses on revenue	0.96	0.96	-0.01	1.14
total asset turnover	1.04	0.98	0.77	1.62
A/C rec turnover	15.10	15.59	13.91	18.66
inventory turnover	10.49	11.18	10.35	11.20

In 2008 the liquidity ratio of GM was very poor and as a result GM went bankrupt. The ratios are healthy afterwards to insure a balance of current assets and current liabilities. Similarly, the leverage ratio is getting healthier after 2008. Total liabilities were well over the total assets in 2008 which makes the leverage ratios negative. General Motor made a lot of profit in 2009, basically because the

company sold a lot of properties during the economic recession. In general, the profitability of General Motors is getting better. The turnover achieved by General Motors is still not as much as in 2008. Table 18 demonstrates the whole pattern.

8.4 Combining both Intra and Inter Company Analysis

Initially selected ratios are presented in intra and intercompany analysis. Then the selected item from the balance sheet is compared with time series and cross sectional techniques.

8.4.1 Ratio Analysis

Table 19 illustrates the combination of intra and intercompany comparison of the financial ratios. One ratio each from the four ratio categories namely liquidity, leverage, profitability and turnover were used to make the combined study. The individual performance of the all the four companies' individual performance over the period of 2008 to 2011 is compared with the data of other companies.

The first ratio used for the comparison is the current ratio which shows the ability of a company to liquidate their assets to pay their current debts. Ford is holding a lot of current assets throughout the time series; in 2008 it had 3.38 times more current assets than the current liabilities. Very high amount of assets remained un invested in Ford, resulting in a lower profit margin. Similarly the ratio of 0.59 for General Motors in 2008 means too less current assets in the company which kicked GM to bankruptcy.

Long term debt to equity is the ratio to show the extend lenders and debtors controls the firm. Higher ratio means a lot of long term debts in the company whereas lower ratio implies a much lower amount of long term debts when compared to the shareholders equity. Negative long term debt to equity ratio of Ford implies there is too much long term loan in the firm and very little equity, mathematically negative. The ratio of 0.62 of Toyota for the year 2011 suggests there is 0.62 dollars of long term debts per dollar of shareholder's equity.

Table 19. Cross Sectional and Time Series Analysis of Financial Ratios

Selected ratios		2011	2010	2009	2008
Current ratio	Toyota	1.10	1.22	1.07	1.01
	Nissan	1.45	1.45	1.32	1.20
	Ford	2.92	2.78	3.07	3.38
	GM	1.23	1.13	1.13	0.59
Long term debt to equity	Toyota	0.62	0.68	0.63	0.50
	Nissan	0.72	0.88	0.91	0.54
	Ford	6.62	-154.51	-16.83	-9.65
	GM	0.31	0.28	0.20	-0.34
return on total assets	Toyota	0.01	0.01	-0.02	0.05
	Nissan	0.03	0.00	-0.02	0.04
	Ford	0.11	0.04	0.01	-0.07
	General motors	0.06	0.04	0.77	-0.34
total assets turnover	Toyota	0.64	0.62	0.71	0.81
	Nissan	0.82	0.74	0.82	0.91
	Ford	0.76	0.78	0.61	0.66
	GM	1.04	0.98	0.77	1.62

Return on assets tells the rate of return a company has been able to achieve. Table 19 suggests these four automotive companies have not been able to achieve very good results. The worst ratio was -0.34 for GM in 2008, which means 34 cents of net loss for each dollar asset of General Motors. The result shows the effect of the economic crisis of 2008 in General Motors. Similarly, Fords net loss of 7 cents

per dollar of assets in 2008, which shows the heavy effects of economic recession in the company.

Japanese automobile companies Nissan and Toyota reported negative earning in 2009, with slow recovery from the economic crisis, earning became positive 2010 onwards. Having a very high return on assets ratio does not necessarily mean the company is doing great. For instant the ratio of 0.77 in 2009 for General Motors was achieved by selling the assets.

On the other hand, total assets turnover ratio of the four companies shows their respective turnover on assets, achieved in the accounting period of 2008- 2011. General Motors has achieved the highest turnover ratio throughout the time series. Ford achieved the lowest turnover; it has been able to achieve 0.76%, 0.78%, 0.61% and 0.66 % turnover on its total assets in the years 2011, 2010, 2009 and 2008 respectively. The higher the ratio the better it is, as the higher ratio indicates higher turnover for the companies. High ratio is not necessarily a good performance as the company is leasing a lot of property, equipment, machineries can achieve higher total assets turnover but it is not sustainable.

8.4.2 Balance Sheet Comparison

In Table 20, balance sheets of the four automotive companies inter and intra company comparison of the balance sheet is presented. Initially, balance sheet is broken down to a common size statement and then plotted in a time series from 2008 to 2011. Only the most important items are compared.

Cash and short term investments belong to the first category, which is the most important entity in the current assets. Clever management applies a balanced approach to manage cash in the company. They insured enough cash to pay their current liabilities and then invested the rest. In 2008 Nissan Corporation had very little cash, only 5% of the total assets, which is risky because it is certainly not easy to liquidate the other assets if an emergency liquidity situation arises.

Table 20. Common Size and Time Series Analysis of Balance Sheet

Selected items in balance sheet		2011	2010	2009	2008
Cash and Short Term Investments	Toyota	11.8	13.4	10.3	7.1
	Nissan	10.8	8.4	7.4	5.0
	Ford	9.6	9.0	10.9	10.1
	GM	21.9	19.2	16.7	15.6
Property/Plant/	Toyota	21.2	22.1	25.5	24.1
	Nissan	33.9	37.8	40.1	38.8
	Ford	12.5	14.1	11.8	10.5
	GM	15.9	13.8	13.7	44.1
Long term Investments	Toyota	18.1	13.6	13.5	17.0
	Nissan	3.6	2.6	2.9	3.8
	Ford	19.3	21.3	21.4	20.8
	GM	4.7	7.3	7.0	2.4
Total Long Term Debt	Toyota	21.6	23.1	21.7	18.4
	Nissan	19.8	23.4	23.4	16.0
	Ford	55.8	63.1	68.5	70.2
	GM	8.1	7.2	4.1	31.9
Total Equity	Toyota	34.7	34.1	34.6	36.6
	Nissan	27.4	26.5	25.7	29.4
	Ford	8.4	-0.4	-4.1	-7.3
	GM	26.4	26.0	20.7	-94.0
Total Assets	All	100	100	100	100

Property, plants and equipment determine the whole production process. Nissan has the highest amount of property, equipment and plants throughout the accounting period considered in this research. Properties, equipment's and plants at Nissan has been well over 35% of their total assets throughout the time series. Ford has the least amount of properties, plants and equipment's, just around one tenth of their total assets. Similarly GM had 44.1 % of assets under this category in 2008 but the global economic crisis of 2008-2009 forced them to sell over two third of their properties. At the end of accounting year 2009 they only had 13.7 % of total assets left in plants, properties and equipment.

Long term investments and long term debts are assets and liabilities respectively which make a longer impact in the company's performance. General Motors had a lot of long term debts in 2008; as a result they failed to successfully cross the recession. Similarly as General Motors had a very bad time in 2008 they could not afford to have long term investments but slowly with a better situation they increased their long term investments. Ford had the highest amount of long term debts throughout the time series, which brings a lot of interest expenses. Although Ford has been gradually decreasing their long term debts, it is still higher than others. Nissan had the least long term investments, around 3% of the total assets because they had invested a lot of their assets in plants, equipment and machinery.

As stated in the theory, equity is calculated by subtracting the total liabilities of the company from the total assets they own. Ford had a negative equity until 2010 as total liabilities was higher than total assets. General Motors also suffered a negative equity of 94 % in 2008, suggesting 94 cents of liabilities for a dollar asset. Japanese automotive companies have been able to have a balanced equity as they did not have much fluctuation in their liabilities throughout the time series.

9 SUMMARY

9.1 Result of the Comparison

Initially the risk of the four companies and their average gain was compared. The result of the comparison is that automotive industry is very risky with very little rate of return. Out of four companies General Motors had the best rate of return basically because they made a lot of profit in 2009 by selling their property valued at 126,966 million US dollar. Meanwhile Ford was found to have a better rate or return and a lower risk compared to its competitor.

Similarly, four companies annual performance was analysed over the period of 2008-2011. Individual performance of the four companies was later on compared with each other´s performance. A cross sectional analysis of 2011 balance sheet was done. Sign of clever management is seen in Toyota Corporation as a balanced approach towards current assets and current liabilities is maintained. Similarly, Toyota had a very low amount of long-term loans obligations, and as a result a minimum amount of financial and leverage risks in the company. On the other hand Nissan Motors had the highest amount of current assets. Even after paying all the current liabilities from current assets Nissan would still have 18.3% of total assets left over; which remained un-invested and as a result very low profit was made by Nissan in 2011. Ford Motors had a very high amount of accounts receivables throughout the studied time series.

Financial ratios of the year 2011 were used to make a comparative study of the four companies. Toyota holds an edge in the liquidity ratio, whereas GM in leverage and turnover ratios. Similarly, Ford was the most profitable. Ford had a very poor average collection period while GM had the best one.

In the trend analysis of the income statement a very interesting fact was revealed. The American companies suffered losses in 2008 but recovered in 2009 onwards whereas the Japanese companies suffered losses in 2009 and recovered in 2010. Similarly, other findings from the trend statement were that revenue went down in

2009 for all the companies, later slow recovery was seen. A similar pattern was also observed in cost of goods sold. Meanwhile, Ford and General Motors were able to cut their selling and administrative costs by a huge margin in 2010 and 2011, which resulted in higher profit for them than for their Japanese counter parts. As a whole comparison showed adverse effects of global economic crisis and a slow recovery in the automotive industry.

9.2 Conclusion

The main objective of the thesis was to be able to invest in the capital market by rating the different company's performances. The purpose has been achieved by analyzing the financial performances of the different companies. The other major outcome of this thesis has been the assessment of risk and gain of an investment. Finally, after the completion of the thesis I think this thesis can act as a guide to these investors who don't have adequate knowledge to rate the performances of companies.

Several comparison models used in this thesis can be adopted by anyone to rate a company's performance with the other companies. Although, the four automotive companies have been used for the research, the aim of the research is not to choose among them the best one for the purpose of investment. The selection of these companies is an example to show how the company's performances can be rated or how a company's individual performance can be compared with other companies' performance. Prediction of the future trends of the different companies can also be done by using the time series technique. The risk and return assessment is another technique demonstrated in the thesis, which offers a lot of information when making an investment decision.

The several risk factors of an investment were discussed in the theory and later on calculated and compared with the average rate of return in the empirical framework. The basic financial statements were briefly introduced and later on analyzed with a qualitative and quantitate method. Similarly the time series and cross sectional analysis of the financial statements were debated. Different components of the financial statement were discussed individually. The impact of

an individual component of the financial statement in the company's overall performance has also been revealed in the empirical frame work. Another feature of this thesis is the ratio analysis of the companies. The impact of financial ratio over the company's overall performance was also discussed and verified in the thesis.

In my opinion, financial statement analysis is just a tool to access a company's performance. There are several other factors like economy, competition, technology etc. which play a decisive role in the fluctuation of the future stock price. After analyzing the financial statement it is the investors decision where to invest. Factors like the readiness of the investor in taking risk, the amount of capital they have with them, their special interest in certain brands, and their desired rate of return, location and several other factors diversify the investors as well.

9.3 Suggestions for Further Research

There have been a lot of financial data and ratio comparisons throughout the 19th century (Horrigon, 1968). Meanwhile I did not find any research done to compare the performances of the automobile industry. It would be interesting if someone would go deeper into the study that I did. Automobile industry has a huge market for investors, so I recommend further research in the field. From my research the profitability and stability of the automotive industry does not seem so promising. I took annual data of 2008, 2009, 2010 and 2011 for the research. The impact of the global economic crisis was clearly visible in the empirical part of this research study. Further research excluding the recession period can be done to shed light on the long term risk and return of the industry.

While calculating the risk and the average gain of the four companies the lack of long term data affected the result. If someone would like to do further research in this subject matter I suggest them to take long term data to calculate the risk and gains of the companies. Similarly, improvements while comparing the financial ratios and statements can be done by comparing the result of the particular company with the industry average.

REFERENCES

Printed Books

Barauch lev. 1974. Financial Statement Analysis. Alfred Rappaport. Englewood Cliffs, New Jersey. Prentice Hall.

Charles H. Gibson & Patricia A. Frishkoff. 1983. 2´nd Edition. Kent Publishing Company. Boston, Massachusetts, United States of America.

Charles T. Horngren, Walter T.Harrison , Jr & Linda Smith Bamber. 1999. Accounting. 4th Edition. Prentice Hall International.

Chisnall, Peter M. 1997. Marketing Research. In the United States of America. McCraw-Hill Publishing Company.

Frank K. Reilly.1989. Investment Analysis and Portfolio Management. 3rd Edition. The Dryden Press.

Gummesson Evert 2000. Qualitative Methods in Management Research. Sage publications.

Kent. R. 2007. Marketing Research: Approaches, Methods and Applications in Europe. London, England. Thomson Learning.

Lewis Mandell & Thomas J. O´Brien, 1992. Investments. Macmillan Publishing Company. New York.

Patrick R. Delaney, Ralph Nach , Barry J.Epstein & Susan Weiss Budak. 2002. Interpretation and Application of Generally Accepted Accounting Principles. John Wiley & Sons, Inc. New York.

Salkind, Neil J. (2003). Exploring Research. 5´th Edition. Prentice Hall

Timothy J. Gallagher & Joseph D. Andrew. 2003. Financial Management Principles & Practice. 3´rd Edition. Prentice Hall

White Brian 2000. Dissertation Skills for Business and Management Students. The United Kingdom

Electronic Publications

Australian Accounting Research Foundation. 1987. Definition and Recognition of Liabilities. Exposure draft 42 D.AARF, Melbourne.

Bhaskaran Swaminathan & Tarun Chordia.2000. Trading Volume and Cross-Autocorrelations in Stock Return. The Journal of Finance. Vol 55 , No 2, 913-935.

David Goldman. 2012. CNN Money. Apple shares top $600. (Online) Accessed 20.03.2012. Available in URL form:
<http://money.cnn.com/2012/03/15/technology/apple-stock/index.html>

David Shapiro. 2009. The Delicate Balance between Account Payables and Receivables. Open Forum. Accessed 25.02.2012. Available in URL form:
<http://www.openforum.com/idea-hub/topics/money/article/the-delicate-balance-between-account-payables-and-receivables-david-shapiro>

James O. Horrigan. 1968. A Short History of Financial Ratio Analysis. The Accounting review. Vol 43, No 2, 284-294

K.K.Sureshkumar and Dr.N.M.Elango. 2011. An Efficient Approach to Forecast Indian Stock Market Price and their Performance Analysis. International Journal of Computer Applications. Vol 34, Number 5, 44-49. Foundation of Computer Science, New York, US

Md. Mahmudul Alam, Md. Gazi Salah Uddin.2009. Relationship between Interest Rate and Stock Price: Empirical Evidence from Developed and Developing Countries. International Journal of Business and Management. Vol 4, No 3, 43-51

Tarun Chordia, Asani Sarkar & Avanidhar Subrahmayam. 2005. An Emprical Analysis of stock and Bond Market liquidity. The Review of Financial Studies. Vol. 18, No. 1, 86-129

Todd Wasserman. 2012. Apple Stock Up 50% Since Steve Jobs's Death. Mashable Business. (Online)Accessed 20.03.2012. Available in URL form:
<http://mashable.com/2012/03/14/apple-stock-steve-jobs-death/>

Woo Gon Kim & Baker Ayoun. 2005. Ratio Analysis for the Hospitality Industry: A cross Sector Comparison of Financial Trends in the Lodging, Restaurant, Airline and Amusement Sectors. Journal of Hospitality Financial Management. Volume 13, Issue 1, 1-12

Electronic Publications without Authors

2008. Business Tools. Northwest Farm Credit Services, Spokane, WA. (Online) Accessed 15.02.1012. Available in URL form: < http://www.farm-credit.com/uploads/BT.UnderstandingKeyRatios%28F%29.pdf>

Toyota Motor Company. (Online)   Accessed 10.3.2012. Available in URL form: < http://www.toyota-global.com/compay/>

General Motors. (Online). Accessed 10.03.2012 . Available in URL form: <http://www.gm.com/company/historyAndHeritage.html >

Ford Motor Company. (Online) Accessed 10.03.2012. Available in URL form: <http://corporate.ford.com/ >

Nissan Motors. (Online) Accessed 10.03.2012. Available in URL form: <http://www.nissan-global.com/EN/index.html>

Toyota Motor Corp. (TM) | Analysis of Inventory. Stock Analysis on Net. (Online). Accessed 10.03.2012. Available in URL form: <http://www.stock-analysis-on.net/NYSE/Company/Toyota-Motor-Corp/Analysis/Inventory>

Income Statement of General Motors 2011

General Motors	In Million(US $)
Revenue	150276
Cost of Revenue, Total	131171
Gross Profit	19105
Selling/General/Administrative Expenses, Total	12105
Unusual Expense (Income)	1268
Other Operating Expenses, Total	58
Operating Income	5674
interest expense or income(- decrease, + increase)	-311
Income Before Tax	5985
Income Tax - Total	-110
Income After Tax	6095
Minority Interest	-97
Equity In Affiliates	3192
Net Income Before Extra. Items	9190
Net Income	9190
Total Adjustments to Net Income	-1605
Interest Expense, Supplemental	540
Normalized EBITDA	11483
operating expenses	6141
Normalized EBIT	5342
interest expenses	311
Normalized Income Before Tax	5653
Normalized Income After Taxes	5879,2

Balance Sheet of General Motors 2011

General Motors	In Million(US $)
Assets	
Cash and Short Term Investments	31 647,00
Total Receivables, Net	9 949,00
Total Inventory	14 324,00
Other Current Assets, Total	4 327,00
Total Current Assets	60 247,00
Property/Plant/Equipment	22 957,00
Goodwill, Net	29 019,00
Intangibles, Net	10 013,00
Long Term Investments	6 790,00
Note Receivable - Long Term	9 162,00
Other Long Term Assets, Total	6 415,00
Total Assets	144 603,00
Accounts Payable	24 494,00
Accrued Expenses	22 756,00
Notes Payable/Short Term Debt	1 682,00
Total Current Liabilities	48 932,00
Total Long Term Debt	11 650,00
Other Liabilities, Total	45 030,00
Total Liabilities	106 483,00
Preferred Stock - Non Redeemable, Net	10 391,00
Common Stock	16
Additional Paid-In Capital	26 391,00
Retained Earnings (Accumulated Deficit)	7 183,00
Other Equity, Total	-5 861,00
Total Equity	38 120,00

Cash Flow of General Motors 2011

General Motors	In Million(US $)
Net Income/Starting Line	8,850.0
Depreciation/Depletion	7,344.0
Non-Cash Items	-4,431.0
Changes in Working Capital	-3,597.0
Cash from Operating Activities	8,166.0
Capital Expenditures	-7,078.0
Other Investing Cash Flow Items, Total	-5,662.0
Cash from Investing Activities	-12,740.0
Financing Cash Flow Items	-150
Total Cash Dividends Paid	-916
Issuance (Retirement) of Stock, Net	11
Issuance (Retirement) of Debt, Net	697
Cash from Financing Activities	-358
Foreign Exchange Effects	-250
Net Change in Cash	-5,182.0
Net Cash - Beginning Balance	21,253.0
Net Cash - Ending Balance	16,071.0

Formula to Calculate Financial Ratios

1 Liquidity Ratio

$$\text{Current Ratios} = \frac{\text{Current Assets}}{\text{Current liabilities}}$$

$$\text{Quick Ratio} = \frac{\text{Quick assets (Current assets} - \text{Inventories)}}{\text{current liabilities}}$$

2 Leverage Ratios

$$\text{Long term debt to equity ratio} = \frac{\text{long term debt}}{\text{shareholders equity}}$$

$$\text{Total debt to equity ratio} = \frac{\text{Current liabilities} + \text{long term debt}}{\text{Shareholders Equity}}$$

3 Profitability Ratios

$$\text{Return on total assets} = \frac{\text{Net income after tax}}{\text{total assets}}$$

$$\text{Return on equity} = \frac{\text{Net income available to common}}{\text{Common share holder's equity}}$$

$$\text{Return on revenue} = \frac{\text{operating expenses}}{\text{Sales}}$$

3   Turnover Ratios

$$\text{Total assets turnover} = \frac{\text{Sales}}{\text{Total Assets}}$$

$$\text{Account receivable turnover} = \frac{\text{Sales}}{\text{Accounts Receivable}}$$

$$\text{Inventory turnover sales} = \frac{\text{Cost of Goods Sold}}{\text{Average inventory}}$$

Formula to Calculate Risk

1. Standard deviation of sales= $\sqrt{\dfrac{\sum_{i=1}^{n}(S_t-\bar{S})^2}{N}}$

2. CO-efficient of variation (CV) $= \dfrac{Standard\ Deviation(\sigma)}{Mean}$

3. Sales Volatility $= f(Coefficient\ of\ variation\ of\ Sales)$

$$= \dfrac{Standard\ Deviation\ of\ Sales(S)}{Mean\ Sales}$$

$$= \dfrac{\sqrt{\dfrac{\sum_{i=1}^{n}(S_t-\bar{S})^2}{N}}}{\sum_{i=1}^{n}\dfrac{S_t}{N}}$$

4. Business Risk

$$= f(Coefficient\ of\ variation\ of\ operating\ Earnming)$$

$$= \dfrac{Standard\ Deviation\ of\ operating\ Earnings(OE)}{Mean\ Operating\ Earnings}$$

$$= \dfrac{\sqrt{\dfrac{\sum_{i=1}^{n}(OE_t-\overline{OE})^2}{N}}}{\sum_{i=1}^{n}\dfrac{OE_t}{N}}$$