Miel van Blitterswijk & Rosen Karadzhov

Financial and Strategic Analysis of
Ford Motor Company and Tata Motors

Program: CBS - M.Sc. Finance and Strategic Management

Date: 22-Sep-2009

Table of Contents:

List of Tables:

List of Figures:

1 | Introduction:

Henry Ford incorporated Ford Motor Company in 1903 at Dearborn, Michigan, USA and is known to have adapted practices that were not popular in those days. The Car Maker is known for their famous "Model T" and the unique innovation of interchangeable parts in moving assembly lines that makes it possible to assemble cars at low cost and high reliability. Ford Motor established an impressive financial track record almost throughout the 20th Century (barring the record loss of $7 billion in 1992) till the Millennium started.

Ford Motor Company incurred a financial loss of about 5.45 billion dollars in 2001 and never really recovered confidently after this slump. It is said that the Ford 2000 initiative of Lord Alex Trotman was the primary reason for financial downturn of Ford Motor Company. The failure of Lord Trotman's Ford 2000 strategy was primarily due to the vision of centralized management that resulted in narrow viewpoints and too much of Americanization thus resulting in ignorance of the local factors of the Global Markets.

As a result, Ford badly lost market share to the competition (especially the Japanese and European companies) that otherwise had a much wiser approach. Probably, Ford survived because of their unique innovations and quality that maintained the respect in consumer's mind about the reliability, performance and quality of the products.

While the company has been surviving for quite some time irrespective of the major financial hits that they suffered intermittently, their real testing times have emerged now when the entire world is reeling under a severe financial crisis.

In March 2008, Ford Motors sold the British motor companies, Jaguar & Land Rover to Tata Motors of India for USD 2 billion amidst a total loss of USD 2 Billion in the two years before the deal thus expecting to break even.

 [http://www.nytimes.com/2008/03/26/business/worldbusiness/26cnd-auto.html; Wright, Natisha and Frailing, Kyle et al. 2005]

Tata Motors was established in 1945 with annual revenues in excess of USD 10 Billion, and they are known to launch the first $2000 car of the world (Tata Nano) which has been in world news very recently.

They are the first Engineering Sector Company from India to be listed on the New York Stock Exchange. They are the no. 1 vehicle manufacturers (especially cars and trucks) of India and have impressive export records as well. In terms of size, they are much smaller compared to Ford Motor Company but have remained in profits throughout their business tenure.

[http://www.tatamotors.com/our_world/profile.php; http://www.timesonline.co.uk/tol/driving/article3164205.ece]

This dissertation is dedicated to Financial and Strategic Analysis techniques of Ford Motor and Tata Motors.

The financial valuation shall be carried out and compared using the known global best practices. Apart from Financial Valuation, the strategic valuations like Michael Porter's Diamond Model, SWOT Analysis, Balanced Score Carding, etc. are of great interest to both internal and external investors.

1.1 - Problem Statement

We study the various Valuation Techniques prevalent in the Financial Markets pertaining to the chosen case studies such that the most appropriate methods and their target audiences can be evaluated.

We propose to study and compare the valuations of Ford Motors and Tata Motors. In 2008, Tata Motors acquired the Land Rover and Jaguar models of Ford Motors in $2.3 Billion on a cash free, debt free basis. Ford Motors contributed $600 Million to the Jaguar Land Rover pension plans.

What competitive advantages of Tata Motors enabled them to acquire two of the world's most popular motor brands that have remained the pride of Great Britain for decades? On the other hand, what went wrong with Ford such that they were compelled to sell such prestigious brands to an Asian company, Tata Motors?

We propose to carry out in depth Strategic and Financial analysis of the two companies based on their financial statements of last five years and a number of past studies and dissertations about both these organizations. Based on the analytics, we propose to work out their future projections for the next five years.

1.1.1 - Research Question

We propose the following Research questions:

Q1.   What are the details various techniques for Financial Analysis of a Company?

Q2.   What are the details of various techniques for Strategic Analysis of a Company?

Q3.   What techniques are suitable for Internal and External Investors and for Mergers & Acquisitions?

Q4.   What does Financial and Strategic analytics reveal about Ford Motors and Tata Motors and how do they compare?

Q5.   What is the future outlook of Ford Motors and Tata Motors for the next five years?

1.1.2 - Significance of the Problem

Company Valuation is carried out to protect the interest of the investors and also to give the big picture view to the Internal Stake Holders such that they can align their strategies towards the positive direction.

The case study of Ford Motors and Tata Motors is expected to bring to table the detailed valuation techniques and also the causes of downfall of Ford Motors and learning from the success of Tata Motors. The significance of this research is that this dissertation would be useful as a reference guide for not only carrying out analysis of the theoretical framework of company valuation but also presenting practical analytics by virtue of the case studies of Ford Motors and Tata Motors using financial statements and analytics that are published on the Internet and Databases.

This document may serve as a first hand guide for researchers to understand and appreciate company valuation techniques and also get a practical viewpoint about analytics of the published data in order to build perceptions about a public listed company. [http://www.tatamotors.com/our_world/press_releases.php?ID=370&action=Pull]

1.1.3 - Hypotheses

In the modern business world, company valuation is not only needed for mergers & acquisitions but also to present the strengths and fundamentals of the company to the stake holders and investors.

The stock markets in many companies use such valuation data to assign ratings to a company – starting from "very risky to invest" to "very safe to invest". These analytics are published after carrying out structured mechanisms of company analysis as would be presented theoretically in the Literature Review.

These mechanisms can be demonstrated by analyzing practical scenarios which shall be carried out by presenting the case studies of Ford Motors & Tata Motors based on the published valuation reports of by these companies as well as multiple third parties.

The reports of the case studies shall be analyzed to present conclusions about the strengths of the company and the risk factor from the perspective of prospective investors in the stocks of the company or potential buyers of the entire company. One such example valuation is presented in the URL:

http://quicktake.morningstar.com/StockNet/Valuation10.aspx?Country=USA&Symbol=F replicated below:

| Current Valuation | 10-Yr Valuation | Forward Valuation | Yields | | | | | | | | |

Price/Earnings   TTM=Trailing 12 Months

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	TTM
Stock's	9.1	6.5	---	62.1	32.0	8.1	6.8	---	---	---	---
S&P 500	28.2	24.0	23.6	19.8	21.1	19.0	17.3	16.8	16.5	10.9	12.6

Price/Book

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	TTM
Stock's	2.2	2.4	3.7	3.1	2.4	1.7	1.1	---	2.5	---	---
S&P 500	5.3	4.2	3.3	2.6	3.2	3.0	2.8	2.9	2.7	1.7	3.1

Price/Sales

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	TTM
Stock's	0.4	0.3	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.0	0.0
S&P 500	2.3	1.9	1.6	1.3	1.6	1.6	1.5	1.6	1.5	0.9	1.7

Price/Cash Flow

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	TTM
Stock's	2.2	1.4	1.3	0.9	1.5	1.1	0.7	1.4	0.8	0.8	0.6
S&P 500	17.1	15.0	12.4	9.7	12.0	11.5	10.8	11.1	11.6	6.8	8.9

Figure 1: Valuation indices of Ford Motors

Source: http://quicktake.morningstar.com/StockNet/Valuation10.aspx?Country=USA&Symbol=F

However the perspective shall be academic and may not be applicable for professional purposes. The outlook of the next five years for the chosen companies shall be done based on academic understanding of Strategic and Financial valuation techniques. It is assumed that all the analytics techniques shall be applicable in excel sheets and no special software tools shall be required.

Not all valuations are of interest to everyone. We assume that Internal Investors may be interested more in DuPont Analysis, Book Value, Replacement Value, Liquidation Value, Replacement Value, etc. while the External Investors may be interested more in Economic Value Addition, Weighted Average Cost of Capital, Discounted Cash Flow, Market Multiplications, etc. Also, Balanced Score Carding and Michael Porter's Diamond Modeling may be of interest of Internal Investors while external investors are interested in SWOT analysis.

1.2 - Choice of Models and Structure (Research Methodology)

We shall use four-step methodology for carrying out the Research:

(a) In depth Literature Review to build the theory on Strategic and Financial Valuation of companies

(b) Application of the theory to the Ford Motor & Tata Motors case based on past published data and analytics

(c) Critical thinking and analytics pertaining to the case studies

(d) Conclusions and Generalizations

The entire method shall have mix of qualitative as well as quantitative analytics based on the data that shall be collected from prior researches, empirical generalizations, discussions and published financial reports and analytics about Ford Motors and Tata Motors. The conclusions shall be a mix of factual presentation and the students' belief. The nature of conclusions (factual or belief) shall be indicated as appropriate.

Following Life-Cycle of the research is proposed to be followed in this project.
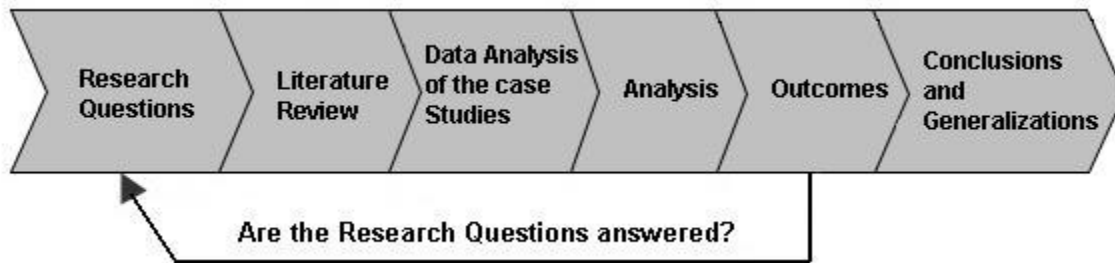
Figure 2: Proposed Research Methodology

Source: own creation

1.2.1 - Scope of the Project

The scope of the research shall be academic and theoretical based on the published data and past professional as well as academic analytics and not as per the practices of industrial practitioners of company valuation techniques.

This is due to the reason that the authors are students and have presented the entire practical framework based on theoretical research by virtue of Literature Review and then applying the outcome to published data of the selected case studies (Ford Motors and Tata Motors).

1.2.2 - Research Design

The proposed Research shall have the following design elements:

Theory Construction: It is recommended the theory of Company Valuation techniques is built with the help of high quality literature available in databases (like Proquest, All Business, etc.) and the Internet.

We will present the world class models on Strategic Company Valuation – like Balanced Score carding, Michael Porter's Diamond Modeling, SWOT Analysis, etc. and Financial Valuation – based on the four categories of valuation methods, viz., Financial Ratios based, Metrics based, Cash Flow based and Markets based. All these models shall be presented with the help of literature review such that the relevant theories can be constructed.

Case Study: As mentioned, the theories shall be applied on Ford Motors & Tata Motors based on their published financial statements of 2004, 2005, 2006, 2007 & 2008 and the various published analytics available in databases and the Internet. Various critical thinking and discussion points shall be evolved in the case study from the students' perspective in addition to application of theory.

Comparisons: The outcome of application of theories on Ford Motors & Tata Motors shall be used to carry out detailed comparison between the performance and future outlook of these companies such that critical discussion points can be addressed and gateways for future research can be opened.

Evaluation: It shall be evaluated whether the answers to the proposed Research Questions have been addressed or not. This evaluation shall be carried out qualitatively as well as quantitatively.

Trend Analysis: It is proposed that the future predictions about the performance of Ford Motors and Tata Motors based on past trend is analyzed at the end of research.

Conclusions and Generalizations: The conclusions shall be drawn pertaining to Ford Motors & Tata Motors whereas the generalizations shall be presented in such a way that they may qualify as empirical.

Recommendations for Future Research: Finally, it is proposed that a broad framework of future research and study is proposed at the end of the Dissertation. [http://www.languages.ait.ac.th/el21meth.htm]

1.2.3 - Data Sources

The proposed data sources are:

(a) Websites of Ford Motors and Tata Motors

(b) Proquest UMI

(c) Financial News Papers and Journals

(d) Currency Analysis Charts (for currency conversion wherever applicable)

(e) Academic Papers written by Students and Professors

(f) Independent companies carrying out Financial Analytics

(g) Books by Michael Porter and Kaplan & Norton

(h) Market reporting sites – like Morning Star, Money Control, etc.

(i) Motor Industry Analytics websites

(j) And other CBS Library resources

1.2.4 - Formats for Presenting

The analysis shall be carried out in Excel Sheets after applying appropriate formulations. The template of these excel sheets are presented in the next section. The outcome shall be pasted in this dissertation after converting into word tables. However, the excel sheets shall be presented along with this paper.

The analysis shall be carried out for the Financial Years of 2004, 2005, 2006, 2007 and 2008. The techniques of Financial Ratios, Metrics Based Analytics, Cash Flow Analytics and Market Analytics shall be applied to the published data of the two organizations. Most of the figures of Tata Motors are in Indian Rupees and hence the conversion shall be applied after studying the average currency conversion from Indian Rupees to US Dollars of the year of analysis.

Although such a need shall arise at very few places because most of the analytics shall comprise of either ratios or percentages. The analytics shall be organized in tables and the comparisons shall be carried out within the same tables. Strategic analytics may not need specific formats for presenting the results.

However, analysis like SWOT and Balanced Score Carding shall be carried out in the recommended formats by industry consultants who use these strategic methodologies in their professional practices. Overall, it is proposed that the dissertation shall possess a substantial number of tables and charts to visualize the analytics.

Every chart and table shall be explained in free text immediately after the positioning of them. The consolidated analysis of multiple charts/tables shall be presented as critical discussions where the comparisons between Ford Motor Company and Tata Motors shall be presented.

1.3 - Limitations

The Research and analytics shall be carried out based on the data and papers published in the recognized business databases and on the Internet. This shall be carried out from a student's perspective for academic purposes and hence the output may not qualify as empirical generalization for professionals looking forward to such an analysis between these two chosen organizations although we shall apply maximum effort in order to arrive at the conclusions that can be applicable in the professional scenarios as well.

2 | About Ford Motor Company and Tata Motors

2.1 - History of Ford Motor Company:

Ford Motor Company was established by a visionary and revolutionary entrepreneur named Henry Ford in 1903. The initial operation of Ford was in Dearborn, Michigan, USA. Henry Ford is popular for his practices that were unique in those days as he believed in revolutionary ideas and building revolutionary leadership.

He practiced worker friendly policies, innovative methods of large scale car manufacturing and management of huge workforces. He designed a unique mechanism of flexible assembly lines with interchangeable parts that ensured that same parts can be fitted in multiple models of the products. In 1911, the first production unit outside the USA was established in the UK by Henry Ford by converting a tram works at Trafford Park south of Manchester.

In the UK itself the famous Dagenham facility was established in 1920 that formed the base for launch of Ford Motor Company Limited (UK) in 1929. The Ford Motor Company Limited, UK served as the hub of the European Ford organization. This organization later developed into Ford Motor Company Europe in 1967.

The Dagenham facility of Ford Motor Company UK served as one of the most productive assembly plants in entire Europe. This plant was closed in 2001 amidst some local damaging factors that reduced the competitive advantages of Ford manufacturing in Britain against Germany and other parts of Europe given that Germany and parts of Europe offered much more peaceful and strike free industrialization proposition.

The primary reasons for closure of Ford Dagenham Manufacturing was the insurgence of shop-floor militants that developed vandalizing power center disrupting production by launching Guerrilla war against Ford management that resulted in a financial loss of about 5.45 billion dollars in 2001. [Wright, Natisha and Frailing, Kyle et al. 2005; www.ford.co.uk]

In 1971 Ford consolidated the operations in entire North America by combining the operations of United States, Canadian and Mexican operations together. Ford has been known for their world famous "Model T" and the innovation of interchangeable parts in moving assembly lines that makes it possible to use same parts in multiple models while assembling cars thus resulting in low cost and high reliability manufacturing.

Ford has been aggressively globalizing by rapidly entering into new markets following the marketing strategy of studying the local requirements and demands of the customers thus focusing on localization of cars with customized features suitable for the choice and affordability of the local customers of a country.

Ford did not attempt to push the models popular in the markets prevailing at USA, UK and Europe. Ford owned the Lincoln, Volvo, Mercury, Mazda and Aston-Martin brands in the US and the world famous British motor brands Jaguar and Land Rover in the UK.

[http://www.duttondirect.com/history/view/make:ford; Owen, Geoffrey Sir. 2002]

The most controversial leader of Ford was Lord Alex Trotman who took over as Chairman and Chief Executive of Ford in 1993, an year after the company made a record loss of $7 billion. He could revive the company to reach $7 billion of profits five years later when the share price of Ford Motor Company on Wall Street rose from $11.45 to $32.25 per share. But he believed in absolute centralization in the globalization strategies of Ford's business.

Lord Trotman established the Ford 2000 initiative to centralize power from several regional groups – North America, Latin America, Europe, Asia Pacific, etc. This centralized system did achieve cost cutting in many ways but narrowed down the focus of Ford to the US and European markets that already were in the process of stagnation.

Some of the Ford's niche excellence like exchanging parts in multiple models kept them ticking. Ford 2000 initiative of Lord Trotman was blamed to result in poor executions in the global markets and an almost collapsed car business by year 2002 and the share prices slumping to less than $10 per share.

Lord Trotman had to finally step down and Jacques Nasser took over as Chairman in 1998 with a mission to revive the reducing revenues and repairing the damage caused by the gross failure of Ford 2000 initiative by Lord Trotman.

Jacques Nasser focused on new business models and carried out critical reviews of the manufacturing plants. He was forced to take many drastic steps and made changes to cut costs and reduce excess capacities like the controversial shutting down of the Dagenham plant that was evaluated to be taking 30% more time and resources in producing a car compared to any other European plants. This plant was retained later to develop engines for the global markets.

The axe didn't fall only on the Dagenham plant given that two more unproductive plants were closed in Poland and Belarus. Jacques Nasser established primary strategies to achieve spreading costs across all models of Ford Motor Company (modularization), building of better supplier relationships and establishing new business partnerships. He didn't get into repeating the same blunder of absolute centralization at the global platter.

[The Economist, 2005; Strategic Direction, 2003; Donelly, Tom and Morris, David. 2003]

2.2 - Strategic Framework of Ford Motor Company:

Ford consolidated their global risk management practices in year 2000 under one single large framework in order to get an integrated view into their global threats and resulting risks such that mitigation strategies can be worked out.

They consolidated their global risks pertaining to market risks, hazard risks, operational risks, counterparty risks, etc. that enabled them to establish their global risk management strategies in a collaborative analytics and learning mode and arrive at strategies that enabled them to fulfill their vision of becoming a globally accepted brand. Freeman Wood, director of Global Risk Management in year 2000, selected "Risk Metrics" to serve as the Global Risk Management system. This system comprised of a global Data Warehouse populated with global risks and mitigation information that presents risk reports in graphical formats to execute trend analytics which in turn can predict future risks based on knowledge of past risks using probabilistic analysis. [Bedell, Denise, 2001]

The innovative concept of "world window of risks" and the corresponding mitigation process and applying the same to enhance global competencies enabled Ford to successfully launch their operations in various countries by carefully selecting franchisees and suppliers. However, experts feel that their supply chain strategies were not industry standard and comprised of huge pitfalls.

Veloso and Kumar (2002) presented a strategy paper about the automotive supply chain strategies of major motor manufacturers and commented that Ford's strategy of mono-supplier strategy comprised of high risks.

Ford chose single vendor strategy to supply large modules of parts and also chose to push the vendors to own the tools in manufacturing them. This resulted in suppliers getting concerned about their amortization schedule getting impacted due to fluctuating volumes and hence quoted higher prices. Also, Ford suffered loss of power over the supply chain by making suppliers like Lear & Magna more powerful and knowledgeable about the supply chain industry although Ford saw clear benefits in terms of cost and quality competitiveness.

It is emphasized that Ford chose such a strategy to realize their dream of "global car" that can be accepted in all the markets of this world. Way back in 1996, Rayport and Sviokla presented Ford's vision of establishing "virtual value chain" in addition to "physical value chain" to realize their dream of the "global car".

Ford developed their "Contour Sedan" in North America that later on was enhanced into the "global car" by assigning best professionals across the world and integrating them through video conferencing and collaborative CAD/CAM.

Veloso and Kumar argue that their concept of single supplier manufacturing large chunks of parts of particular models to be supplied globally is a part of this strategy. Not stating affirmatively, but failure of such aggressive strategies of Ford may have caused the downfall that they witnessed in the past decade and this decade.

Ford's strategy of globalization has been in line with the German big three in automotive industry – BMW, Mercedes Benz and Volkswagen:

- Strategic decisions centralized at the corporate level

- Operational decisions decentralized by empowering local management

- Varying hierarchies and functions among the plants

- R&D functions centralized at a global level although talents hired and placed all over the world for localization of product specifications

- Preference given to local suppliers

- Global Suppliers given additional empowerment although Ford went out of the way in this strategy by choosing the minimum number of suppliers against the German Big Three

- Concentration of capital funds

- Intra and inter-organizational competition of components, products, parts and manufacturing innovation and competencies

- Approximation allowed as per local working standards through the tailoring quality processes for localization of specifications

[Pries, Ludger, 2001]

Ford established a loose connectivity with franchisees. Their strategic framework pertaining to suppliers and franchises have been mix of centralized and decentralized decision making, however their operational framework for supplier and franchise decision making has been completely decentralized. They allowed all their franchise business units to operate as independent profit centers having their own profit and loss accountability such that they can learn and respond to the local economy at their own risks.

Ford believes that the main stake holders of their product development strategies are the end customers and the franchises. Hence, Ford believed in getting the inputs to design enhancements from the ground level where the products are actually tested by franchises and used by the customers.

In order to develop a better product portfolio in the global markets, Ford Motor Company established key performance indicators with measurable metrics that can be captured and analyzed at global levels such that product competitiveness, customer satisfaction, portfolio freshness and market share can be measured effectively. Ford focused on measurement of these metrics at the commodity level, platform level and full vehicle level as reported by Vasilash (2007) in his paper.

[Vasilash, Gary S, 2007].

Recently in March 2008, Ford Motor Company sold both the globally renowned and prestigious British motor companies, Jaguar and Land Rover to Tata Motors of India against $2 billion amidst a total loss of same value in the two years before the deal in the attempt to achieve a quick break even. This deal was taken as quite controversial and surprising at the global level given that the buyer is an Indian company.

What made Tata Motor value these brands which were not valuable from the perspective of Ford Motor Company that has owned these companies for more than half the century? This is still a debatable context. Looking into the objectives of this dissertation, a similar analysis of Tata Motors is essential that follows as below.

(http://www.nytimes.com/2008/03/26/business/worldbusiness/26cnd-auto.html)

2.3 - History of Tata Motors:

The Tata Group was founded in 1868 when India was under British Empire. The group formed their textile business in 1874 and Steel manufacturing in 1907. In 1945, Tata Sons Limited started the automotive business with manufacturing steam locomotive boilers after purchasing the shops of East Indian Railways from Government of India, which was under the British Government in that year.

After purchasing these shops, the Tata sons decided to establish Tata Engineering and Locomotive Company Limited (TELCO Limited) and establish the primary manufacturing facility in Jamshedpur (an industrial city in Eastern India). This company was managed by J.R.D. Tata from 1945 to 1973 and by Sumand Moolgaokar from 1973 to 1988.

Sumand established the second manufacturing facility in Pune India looking into the boom in the auto market. In 1991 Ratan Tata took over the Tata Empire from his uncle and moved the Tata group out of the sectors where they were not very competitive – like Cement and Textiles. Today, Tata's largest manufacturing businesses are Steel and Motors after the consolidation carried out by Ratan Tata. As on end of financial year 2008, the Tata Group has an annual turnover in excess of $30 Billion out of which more than $9 Billion is contributed by Tata Motors.

TELCO Limited is now widely known as Tata Motors that is among the world's top five manufacturers of medium and heavy trucks and world's second largest manufacturer of medium and heavy busses. Tata possess a strategic engagement with Mercedes Benz for assembling and selling Mercedes Benz commercial vehicles and passenger cars in India.

Another strategic tie up that they possess is with Cummins pertaining to their diesel engines through Tata Holset Limited. In fact, Tata Motors contributed to the Cummins Diesel

engines by adding turbo chargers on them vide their joint manufacturing operations with Tata Holset Limited.

The only partnership of Tata that didn't go well was with Rover Group of Britain that went bankrupt in year 2005. Tata tried entering the European markets through a model named CityRover that faired poorly due to its negative publicity, higher price and poor quality compared to the competition.

Ratan Tata is now 70 years old but still presents the image of a dynamic, innovative and revolutionary entrepreneur. He is known for high aggressive moves for the benefits of Tata Motors customers. In 1997, Tata Motors launched its first indigenously developed car named Indica that currently possesses more than 15% of the car market share in India.

The other car models of Tata Motors that are popular in India and some markets of Asia are Tata Indigo, Tata Sierra, Tata Sumo and Tata Safari. In 2008, Tata achieved a global publicity due to two major activities that made headlines worldwide. In the Geneva Motor show they presented their four-seater small car named "Nano" priced about $2500 which is expected to be the cheapest car of the world.

In March 2008, Tata Motors acquired the two globally prestigious companies – Jaguar and Land Rover from Ford Motor Company. It is assessed that Tata Motors did so to achieve a new image of a global automotive company like Ford Motor Company given that their business span has largely remained indigenous within India for a long time.

[http://seekingalpha.com/article/2486-recent-history-of-tata-motors-ttm;

http://www.coventrytelegraph.net/news/coventry-news/2008/03/26/tata-motors-a-history-92746-20676382]

2.4 - Strategic Framework of Tata Motors:

Tata Motors is certified as ISO 9001:2000 compliant in Quality Management System and as ISO 14001:1996 compliant in Environmental Management System. Hence, they possess global recognition in best practices that strengthens their branding at a global level (http://www.tatamotors.com/our_world/awards.php).

They are known to be very much customer focused and are very conscious about the fitment of their products for customer needs. They believe in continuous innovations as they keep on releasing new innovations in their existing models. Although the indigenous cars of Tata Motors do not compare with the engineering excellence of a global player like Ford Motor Company, they are well suited for Asian conditions where the comfort factor is more important than cruising at high speeds.

Reviews by Indian Motor sites reveal that the Tata Motors Indica & Indigo models possess sluggish performance of engine in terms of speed and performance but are good in terms of fuel efficiency, maintainability, internal space that are more important factors given the road and traffic conditions in India.

This reveals that Tata Motors have focused on the local conditions of the country and have designed cars that are more suitable for customer needs rather than imposing additional but useless engineering on them. Example, there is no point designing a car that can run at 100 miles per hour if the maximum speeds that can be achieved even at best roads is 70 miles an hour. (http://www.automobileindia.com/cars/tata-motors/tata-indigo.html;

http://www.carazoo.com/newcars/carreview/Tata/Indigo).

One of the major success factors of Tata Motors are their supply chain excellence. The entire world is surprised by the launch of Tata Nano that shall be priced at $2500 approximately. An analysis by Fogarty, Justin (2009) reveals that Tata Motors could commit this price to the industry due to their excellent backend supply chain network.

Tata Motors worked very early with their suppliers in arriving at the cost estimate of the car − to the extent that even the functional specifications of the parts were completed much before even talking about the car to the markets.

Tata Motors uses Ariba spend management solution as reported by Business Wire in 2005. Ariba is a software based platform that helps in reducing bottom line costs considerably. Tata Motors is a modest company when it comes to spending because one of their primary objectives has been achieving highest operational efficiencies at lowest costs.

Tata Motors extensively uses Information Technology to support their business objectives. They possess Computer Aided Design and Computer Aided Modeling technologies, Siebel for Customer network management, SAP for supplier relationships and supply chain management, business logistics management, customer relationship management, human resources management and Finance management.

They also use BMC Software for business services management under the ITIL and ISO 20000:2005 framework. The IT systems of Tata Motors limited are outsourced to their group company named Tata Technologies Limited. The BMC tools help them to manage IT services management, IT change management and also to comply with critical statutory laws and best practices like Sarbanes Oxley Act, ITIL, and ISO 20000:2005. [Ogilvy Public Relations Worldwide. 2008; BMC Software. 2008]

Tata Motors do have the fundamentals to play the role of change agent for some of the major changes in the global automobile industry. Historically, Tata Motors have not done well in entering the motor markets in western countries and hence this acquisition presents an excellent opportunity for Tata Motors to establish their presence in UK and European car markets.

Jaguar and Land Rover may not have done well in the recent past but they have remained the pride and heritage of Great Britain and are very close to heart of the native British citizens.

Tata Motors may just have to apply some technical innovations in these cars and re-price them according to the modern economics and these models for sure will again do wonders in the UK markets. One good thing about this acquisition is that the heritages of India and Britain have many common links including the very establishment of Tata Group that was done during the British rule in India.

The fundamentals of Tata Motors possess many best practices of the British industries and hence the employees of Jaguar and Land Rover will be able to easily correlate the culture of Tata Motors with the original British heritage although these organizations have remained under American influence for so long.

The biggest gamble that Tata Motors is currently playing is the Tata Nano targeted at urban middle class that are yet to afford a car and have been moving on Motorcycles. Tata Motors have priced this car at $2500 approximately which itself is a challenge for them to fulfill. They have already made a loss of more than 300 Million Dollars because they had to shift their entire plant for Tata Nano manufacturing from a location called "Singur" in the eastern part of India amidst local disturbances and security problems [http://www.india-server.com/news/tata-motors-pulls-out-of-singur-4172.html].

The current manufacturing capacity of Tata Nano is 50,000 cars per year whereas Brown, Robin (2009) of motortorque.com expects a booking of 500,000 units in the first lot itself. This means that in the current capacity Tata Motors will take 10 years to fulfill the orders of first lot itself.

After the Singur crisis, they are in the process of setting up a new factory such that the combined output of Tata Motors can be 250000 cars per year which again will take two years to fulfill the bookings of the first lot itself. Hence, Tata Nano is going to be a major challenge for Tata Motors whereby they would need to aggressively deploy new plants although they are reeling under cash crunch due to their acquisition of Jaguar and Land Rover in 2008.

Hence, overall it is a "do or die" situation for Tata Motors – if they succeed they will attain the status of no. 1 small car manufacturer of the world; but if they fail they would lose reputation in the global markets permanently.

3 | Strategic Analysis of Ford Motor Company and Tata Motors.

We present the strategic analysis of Ford Motor Company and Tata Motors using SWOT analysis, Porter's Model of Competitive Advantages, Porter's Five Forces Model of competitiveness and Ansoff Matrix.

SWOT Analysis was strategically modeled by Ansoff (1980) to focus on two kinds of prioritization – High prioritization of opportunities and High prioritization of building new competencies. When "opportunities" are prioritized, the organizations tend to develop products that have high demands in the markets and when "development of new competencies" is prioritized then organizations do not look at the current opportunities in anticipation that the new competencies will develop new opportunities for them.

It is difficult to predict which one works better – they may yield different results for different organizations. In case of Ford Motor Company and Tata Motors there seems to be a fundamental difference in prioritization – Ford Motor Company have focused on prioritization of developing competencies and taken aggressive steps for the same in anticipation of developing opportunities whereas Tata Motors have focused on prioritization of availing opportunities and developed competencies to avail them as fast as possible.

3.1 - SWOT Analysis of Ford Motor Company:

Following is the SWOT Analysis of Ford Motor Company:

3.1.1 - Ford Motor Strengths:

- Innovations in Technology and Procedures like virtual assembly line, single supplier model, centralized global risk management framework, etc.

- Commitment to environment protection by developing low emissions technologies

- Repeatability of technologies – like same spares can be used in multiple models in what they termed as virtual assembly lines

- Excellent engineering and production workforce possessing global competencies as well as capabilities of localization of products in respective countries

- Excellent knowledge and analytics of the global markets that helped them to grow into a truly global company

- Capability to reach out to developing countries like Indonesia, India, etc. and adjust to their local demographic conditions

- Excellent Brand Equity with legacy strengths and high levels of dignity of Ford brand heritage at the global level

- Proud owners of some of the best car models of the world

- Excellent leadership and management strengths

- Strong entrepreneurship at global level as well as at local markets level

- Excellent marketing abilities in countries that are still out of reach of many competitors of Ford Motor Company

- Excellent network of suppliers and supply chain management

- Excellent management of global workforce with less unionization except for UK where shop floor militancy led to closure of Dagenham manufacturing plant.

3.1.2 - Ford Motor Weaknesses:

- Not successful in withstanding against Japanese competition like Toyota

- Falling sales and revenues (faced a whopping $5.45 billion in 2001 that improved to $2 Billion loss before the Jaguar and Land Rover companies were sold to Tata Motors India) and Poor financial condition continuing for a number of years

- Not able to tap opportunities in small and medium segments where the motor market is the largest

- Inability to establish sustainable markets in high end car models that led to sale of Land Rover and Jaguar car models

- Losing strengths in local US markets

- High debts but no tangible consolidated efforts of cost management – still believe in paying premiums in the single supplier model (probably to support their core strength of virtual assembly lines with interchangeable parts)

- No diversification – entire business dependent on Automotive manufacturing and supply (except Ford Finance which is not large enough to save the company from turmoil)

- No Parent company – hence all accountability of make or break lies with Ford Motor Company only

3.1.3 - Opportunities for Ford Motor Company:

- Growing motor markets in small and medium segments in the third world countries

- Development of more fuel efficient and green cars to promote them in Europe and US markets

- Development of Hybrid cars and Electric cars

- Growing economies in Asia where Ford is already present or can enter easily due to regional strengths

- Acceptance of American brands in many countries of Asia (Like India and Pakistan)

- Promoting their powerful Volvo vehicles in the Bus and Truck markets of Asia where the local brands like Tata Motors may be very strong but are technically far inferior compared to Ford Volvo

- Collaboration with Asian manufacturers like Tata Motors and localization of manufacturing and workforce in third world countries at much lesser costs – like Mercedes Benz that is doing phenomenally well in India through their joint venture with Tata Motors

- Develop Pseudo brands in Asian markets by combining their name with local names – example, they can form brands like Tata – Ford, Suzuki – Ford, Mitsubishi Ford, etc.

3.1.4 - Threats to Ford Motor Company:

- The western car markets have been hit very badly due to stagnation and the current economic crisis. As reported by Platinum Today, Car sales in US have declined by 36% percent. Car markets in other developed economies like UK and Canada have also witnessed similar plunges – 38% decline in UK car sales in December 2009

(thisismoney.co.uk) and 21% decline in Canada car sales in December 2008. [Platinum Today (2009); Praet (2009); Daily Mail. (2008)]

- Western Economies facing severe economic down turn due to the current Sub-Prime crisis

- Stringent Emission norms in Europe, UK and the US

- Japanese competitors are very aggressive in the western markets resulting in reduced grip of Ford Motor Company on the US car markets

- Indigenous manufacturers in Asian countries like Tata Motors in India and Suzuki and Toyota in Japan having very strong market shares and emotional acceptance locally

- Inadequate infrastructure and poor safety norms in developing countries resulting in significant engineering issues in Asian countries where the local competitors win because they understand the issues much better

- Poor customer service network and supply chain management in Asian countries – Ford's strategy of single supplier at global level conflicting with their supply chain excellence objective in Asian countries.

[Wright, Natisha and Frailing, Kyle et al. 2005; www.ford.co.uk; Chappell, Lindsay, 2005; Palley, Thomas I, 1999]

3.2 - SWOT Analysis of Tata Motors:

Having presented the SWOT analysis of Ford Motor Company, we now analyze the SWOT framework of Tata Motors. As mentioned above, Tata Motors prioritizes opportunities and builds their competencies around them. Their announcement of Tata Nano is an excellent example where they have launched the model and opened bookings much ahead of building their manufacturing competencies to meet the demand not caring about the issue that they will end up accumulating a huge backlog of customer orders [Brown, Robin (2009)].

3.2.1 - Tata Motors Strengths:

- Excellent brand equity and strengths in Indian Market

- Legacy and Dignity of Tata brand heritage which is almost as old as Ford Motor Company

- Sound global recognition in light trucks and buses

- Sound fundamentals in turbo diesel engines that they developed in joint venture with Cummins

- Sound presence in Asian Markets

- Ownership of the heritage of British motor brands – Land Rover and Jaguar

- Strategic tie up with Mercedes Benz which is one of the hottest cars in premium car market segment in India

- World class quality accreditations (ISO 9001, ISO 20000, ISO 14001)

- Excellent cost management framework (Ariba Spend Management)

- Excellent Supply Chain Management using the SAP framework

- Experienced, high quality, productive and low cost work force

- Ownership of some of the largest automobile manufacturing plants of the world

- Diversification strengths due to other large businesses of Tata Group

- Excellent financial strengths – close to $10 Billion of annual revenues

- Sound Parent Group support – Tata Group annual turnover is in excess of $30 Billion

3.2.2 - Tata Motors Weaknesses:

- Never done well in US, UK and European car markets (although done reasonably well in light trucks and buses) – as presented earlier, they failed miserably in their City Rover launch in Europe

- Not yet prepared fundamentally to handle the global markets of Land Rover and Jaguar

- Weak technical competencies when compared to companies like Ford Motor Company

- Current Manufacturing capacities not adequate to meet the demands of Nano – already taken a risk of over commitment and under delivery pertaining to the Tata Nano economy-car.

- Perceived as too Indianized – it will take them a long time to establish a global branding

- Do not possess localization skills outside India markets – this is one of the primary reasons for their failure in the City Rover venture

- Focus is more on cost – thus their car models lack advanced features that are common in western markets

3.2.3 - Opportunities for Tata Motors:

- Gain control over UK and Europe markets by re-enforcing the heritage of Jaguar and Land Rover

- Deep roots of British style manufacturing processes given their own heritage of the British rule in India – can help them do better with Jaguar and Land Rover

- Introduce Asian variants of Jaguar and Land Rover by promoting their "Power Icon" branding – this may work very well with Asian politicians, Capitalists and Bureaucrats

- Develop more joint ventures like Tata – Mercedes Benz and introduce their cars in the Asian markets

- Tata Nano has taken the world by surprise whereby many economy car manufacturers of the world are yet to even think of such a cheap car

- Excellent test drives and experience reports of Tata Nano can invite attention of urban middle class at global level – if they build their manufacturing and supply chain effectively, they have the opportunity to virtually capture the market segment which doesn't even exist in the world – a market of $2500 cars (many bikes are more expensive than this car which is spacious enough to accommodate four six feet tall people)

3.2.4 - Threats for Tata Motors:

- Jaguar and Land Rover requires lot of funds initially which may strip down the company to cashless levels.

- The Singur crisis has already hit their manufacturing backbone for Tata Nano cars – the company has not yet come out of the draining down of cash in excess of $300 Million.

- Urgency in shifting the Singur plant to alternate place has hit their supply chain very badly – a large number of suppliers had established plants in Singur to support Tata Motors – many of them may not be having enough cash to shift to new location of Tata Motors Nano plant.

- Many companies across the world are busy developing their own models of Economy Cars – they may launch in competition with Tata Motors giving them tough time in the market that currently seem to be monopolistic in favor of Tata Motors.

3.3 - Strategic Analysis of Ford Motor Company and Tata Motors as per Michael Porter Diamond Model of Competitive Advantages.

Michael E Porter developed the Diamond Model to analyze the competitive advantages of nations to analyze how some countries gain competitive advantages in certain industrial sectors by developing their respective indigenous industries. This model and the five forces model of firm competitiveness have become empirical generalizations in strategic analysis of companies. We hereby present the analysis of Ford Motor Company and Tata Motors using these models. The Michael Porter's Diamond Model is presented in the following figure:
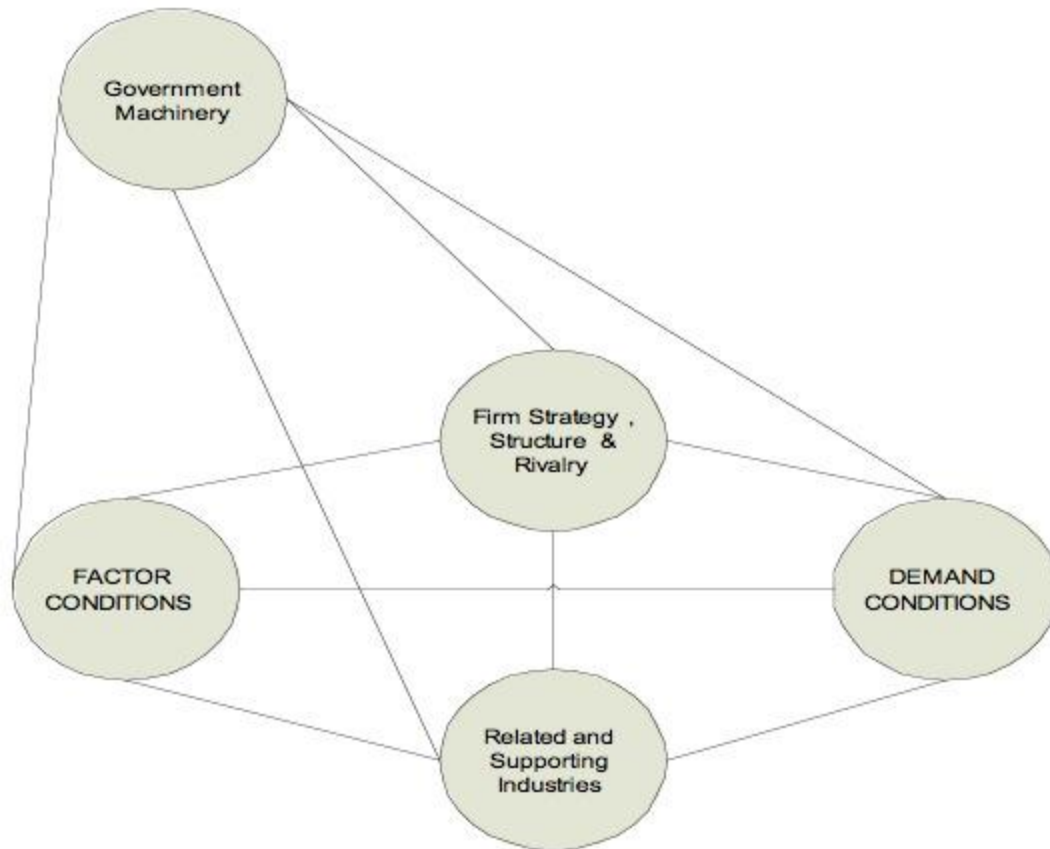
Figure 3: Michael Porter's Diamond Model

Source: Porter, Michael E. 1990

Organizations that have achieved competitive advantages across the world have carried out innovations in their product offerings, in the services, in the way they do business and in the way they compete in the marketplace. The innovations of all companies appear to be their own but are actually based on some strong fundamentals of factors that interact with each other considerably (Porter, Michael E. 1990. pp75). The diamond model presents a strong correlation of the four underlying influencing factors governing the success of an organization at National as well as International level with the help of the controls of the local Government on these influencing factors acting as the Catalyst.

3.3.1 - Firm Strategy and Rivalry**:**

Michael Porter defined this factor as an imposed urgency on organizations to "Innovate" in order to compete with companies in direct competition in the Local Markets. This influencing factor is governed by the overall business system in the country controlled by the local Government, in which companies are formed, organized, governed and managed through structured legal and statutory framework (like Company Law, Companies Act, Corporate Governance Act, etc). [Porter, Michael E. 1990. pp78, 83]

3.3.1.1 - Firm Strategy and Rivalry of Ford Motor Company:

Henry Ford developed the foundation of the culture of doing things differently – that is, prioritizing competency building preferred over prioritization of opportunities. The first innovation of the virtual assembly lines with interchangeable parts was developed in their Michigan Plant at the Highland Park.

This innovation caused major waves in the market enhancing the competitive advantages of Ford Motor Company and thereafter Ford made innovation as the way of doing business. Acquisition of multiple popular car brands across the globe and supply chain centralization has been the key business strategies of Ford that has contributed considerably to the competitiveness of Ford in the respective regions/countries of operations.

Ford Motor Company has been using advanced computer aided design methodology to ensure better visibility and innovation in the vehicle design in line with the consumer expectations – safety, fuel efficiency, engine efficiency, exteriors and high end vehicle features.

Ford's focus has always been to produce adequate number of cars in the respective countries such that they are always able to cater to the local demands with a appropriate acceptable inventory overheads.

3.3.1.2 - Firm Strategy and Rivalry of Tata Motors:

Tata Motors strategy has been different compared to Ford Motors. They defeated their rivals by capturing the opportunities much ahead of competition even before they are prepared to deliver against orders. Their strategy has been to reserve customers by charging booking amounts such that they first secure the customer base and then start manufacturing.

They are very cost conscious about overheads or extra inventory and hence manufacture strictly against orders. Their strategy in the launch of Tata Nano is the same whereby they first intend to secure the customers by charging nominal booking amounts and then deliver the cars gradually as and when they are launched. Given that their Nano concept is not yet challenged by any competition, it would be easier for them to reserve the bookings such that even if they face a competition, their customers of first lot will remain untouched. [MotorTorque.com UK. 2009]

3.3.2 - Demand Conditions**:**

Michael Porter's concept of demand conditions is related to the domestic demands laid on the company by end customers, suppliers, government, etc. thus exposing the company to the challenge of managing demand-supply ratio.

The demand conditions also get internationalized if the Government Machinery supports a system that helps companies to achieve this. It is important to note that not all companies having strong local strengths can get into the International Markets (Porter, Michael E. 1990).

3.3.2.1 - Demand Conditions of Ford Motor Company:

Ford has demonstrated immense analytical and adaptive strengths in absorbing and delivering against the demands of the local economies wherever they have established their business. They never try to push their established products of United States, the UK and European markets in the newly formed markets of developing countries.

They have established knowledge bases of market, economical, statutory and engineering issues of different countries. They have proactively focused on developing and manufacturing indigenous products in their respective markets taking into account local demands, maintainability, affordability, demographic and economic conditions, mean time between failures, accident rates, road and traffic conditions, and environment related laws. This is one of the reasons why Ford Motor Company is known in different countries for different models whereby the customers of one country may not have experienced the models prevailing in other countries.

In every market of operation, they have deployed local spares stocks with the help of local service franchisees such that they can extend high quality services in lower costs. Their innovation of exchangeable parts supplied by centralized supply chain system has helped them to maintain mobile spares stock across the world. [Wright, Natisha and Frailing, Kyle et al. 2005]

3.3.2.2 - Demand Conditions of Tata Motors:

Unlike Ford Motor Company, Tata Motors have not developed the competency of localization of products and services as per local demands. In India, they have decades of experience in developing products against local demands and hence are very successful.

The government machinery of India has already helped them to stretch their legs beyond the country limits (like the legal and statutory framework of India has allowed them to acquire British companies and launch Nano worldwide through Geneva).

But they have not mastered the art of localization of products as per the regional demands in countries of their operations. Example, they failed in City Rover miserably because they tried to push cars fit for Indian conditions into Europe which is considered as a blunder today. Hence, overall it will take a long time for them to establish global branding. [Brown, Robin. 2009; Fogarty, Justin.2009]

3.3.3 - Related and Supporting Industries:

Porter suggested that the domestic Industry in a country grows substantially if the local government is successful in creating and administering the framework of competition among players and suppliers that support the industries. In such a national framework, a strong network of competitors, suppliers and service providers is created that collectively influence a healthy growth of business, increase demands and boost supplies.

Such competition when stretch their legs in the global markets leave a positive impact on the local strengths of the country due to inflow of money, global best practices, innovations, ideas, and patents (Porter, Michael E. 1990).

3.3.3.1 - Related and Supporting Industries of Ford Motor Company:

Ford Motor Company is a true global company. They used the system of centralized supply chain but distributed services and support network. They have appointed competent franchisees in every marketing region for sales and marketing, services and customer engagement. They possess countrywide Customer Databases for Customer Relationship Management using their global computing platforms.

Ford Motor Company follows a well established model to start their operations in a new country that follows well established procedures to establish operations in minimum time, establish spares units, establish services units and establish sales outlets. The company has support partners that follow this model for communication with local suppliers and customers, local brand licensing and promotion and local product/services promotion in order to quickly attain the business as usual state in a new country of operation. [Wright, Natisha and Frailing, Kyle et al. 2005; Chappell, Lindsay, 2005]

3.3.3.2 - Related and Supporting Industries of Tata Motors:

The related and supported industries of Tata Motors are largely Indian based whereby many of them do not have the competencies to support global expansion of Tata Motors. In the current context, Tata Motors is expanding their global operations using their internal teams that establish dealership networks in the countries of their operation. Currently, they have operations run by internal employees in many countries outside India.

In many countries, they are solely dependent upon the orders booked by customers through their local dealers and service providers that operate with their own local competencies. This is the reason that some of their models like Tata Sierra has good acceptance in UK markets.

3.3.4 - Factor Conditions:

Lastly, the factor conditions in Porter's diamond model complete the framework. Factor conditions are related to business support framework to the business that includes skilled manpower, basic infrastructure, supply channels, funds transfer channels (like a nationwide payment system), availability of loans from banks and venture capitalists.

3.3.4.1 - Factor Conditions of Ford Motor Company:

Ford Motor Company possesses experienced Human Resources Management team managing employee and worker relationships in respective countries. Their primary goal is to acquire, train and retain employees and skilled workers as per the needs of the company. Ford Motor Company offers excellent healthcare and retirement benefits to their employees in all countries thus are able to achieve high levels of employee satisfaction.

Moreover, they have a flexible global strategic system that helps them to adjust their business model in line with the local factor conditions like infrastructure, transportation, government policies, statutory acts and regulations, salary/wages, medical facilities, provident funds or union funds, emission standards, relationship with local banks, etc.

[Wright, Natisha and Frailing, Kyle et al. 2005; Connelly, Mary. 2001; Stoffer, Harry, 2001]

3.3.4.1 - Factor Conditions of Tata Motors:

Tata Motor Company again has well established and experienced Human Resources Management team. They manage employee and worker relationships very effectively and as per local laws and regulations of a country. Overall, their competencies in this area are comparable with the competencies of Ford Motor Company.

3.4 - Analysis of Ford Motor Company and Tata Motors as per Michael Porter's Five Forces Model that shape Industry Competition.

In 1980, Michael Porter presented the five forces that shape competition in the industry for any business organization as – Rivalry among existing competitors, threats of new entrants, bargaining power of suppliers, bargaining power of buyers, and threat of substitute products or services. These forces determine the competitive position of organizations in the markets of their operations.

We hereby introduce a brief introduction about this model and then determine the competitive positioning of Ford Motor Company and Tata Motors with the help of this model.

The Five Forces That Shape Industry Competition
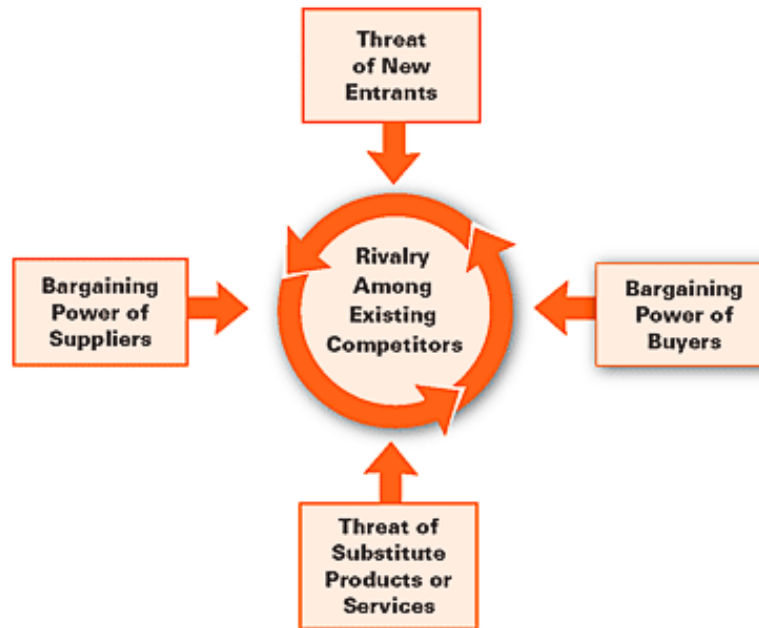
Figure 4: Porter's Five Forces Strategy that Shape Competition

Source: Harvard Business Review. 2008

One important observation that Michael E Porter made about these forces is that if these forces are intense then almost no company gains distinct competitive advantages and earns attractive returns on investments.

The threats of new entrants and substitute products and services are prevalent in industries where major innovations are underway that can potentially cause creative destruction of the existing products and services. New entrants always enter the markets with a desire to capture market shares quickly and hence tend to put lot of pressure on product pricing thus capping the profit potential of the market.

Hence, the existing players in the market benefit out of the barriers to entry of new players that essentially comprise of – supply and demand economies of scale, supplier switching costs to customers (especially when the customers have invested heavily in solutions compliant with supplier's technology or are very much used to the same), capital requirements, access to distribution channels, restrictive government policies, etc.

The other two balancing forces are bargaining power of suppliers and buyers. The bargaining power of buyers shall be lesser if competition is less given that customers will not have many choices for purchasing products. However, the bargaining power of suppliers is higher in case of lesser competition given that lesser competition will not develop the supplier network (and their mutual competition) and hence they will tend to have more bargaining power. (Harvard Business Review. 2008; Ankli. 1992)

Ferrier and Smith et al (1999) stated that companies that pose complacency in their approach tend to lose market shares to their more aggressive and active counterparts. They observed that some industry leaders tend to erode their own market shares through new innovations that carry out a typical Schumpeter's creative destruction of their existing product market shares.

This is carried out to ensure that they reinforce their market shares with new innovations and improved customer value before new entrants tend to do so. Ferrier and Smith et al (1999) quoted Lord Alex Trotman of Ford Motor Company to be actively following this strategy his vision to acquire no. 1 global position of Ford Motor Company in the world.

However, what Ford has not managed effectively well is reduction of the bargaining power of their supplier which has been centralized largely to support their concept of interchangeable parts in flexible assembly lines. It appears that the age old innovation concept of Ford Motor Company is no longer working for them given that their supply chain strategy has become very expensive for them (discussed above in this dissertation).

Mapping the global market landscape of motor industry, the threat of new entrants is extremely high because there are a large number of high quality regional motor manufacturers across the world that are working towards entering new markets across the globe. The phenomenon of Japanese companies entering US markets and giving tough times to native players like Ford Motor Company is witnessed by people all across the world.

The Japanese companies like Toyota have introduced substitute products in the US, UK and European markets and have eroded market shares of Ford Motor Company given that they (probably) were more aggressive and innovative than Ford Motor Company in these markets. Tata Motors is one such company that is all set to enter global markets and pose threats to the local market players with their new innovations (like Tata Nano). Their Nano models can kill local competition of low cost cars in many countries if they are able to maintain the engineering excellence that they have been able to demonstrate in the test drives.

They have largely been able to control the bargaining power of suppliers by virtue of excellent supply chain management in the backend and hence are able to offer unbelievable prices to their customers not letting any room for them to bargain. Currently, Tata Motors are facing some barriers to their entry in many markets – like the emission norms of European Union – but they are gradually working on the remedies without comprising much on their local cost advantages. (Fogarty, Justin. 2009)

3.5 - Ansoff Analysis of Ford Motor Company and Tata Motors.

Ansoff, H I (1958) developed a matrix to analyze the product marketing strategy of an organization when designing a model for diversification. Following is the image of original sketch of the matrix drawn by Ansoff himself:

Figure 5: Ansoff Matrix

Source: Original sketch drawn by Ansoff published in his paper "A Model for Diversification" in 1958

A simpler form of Ansoff product marketing strategy is presented below:
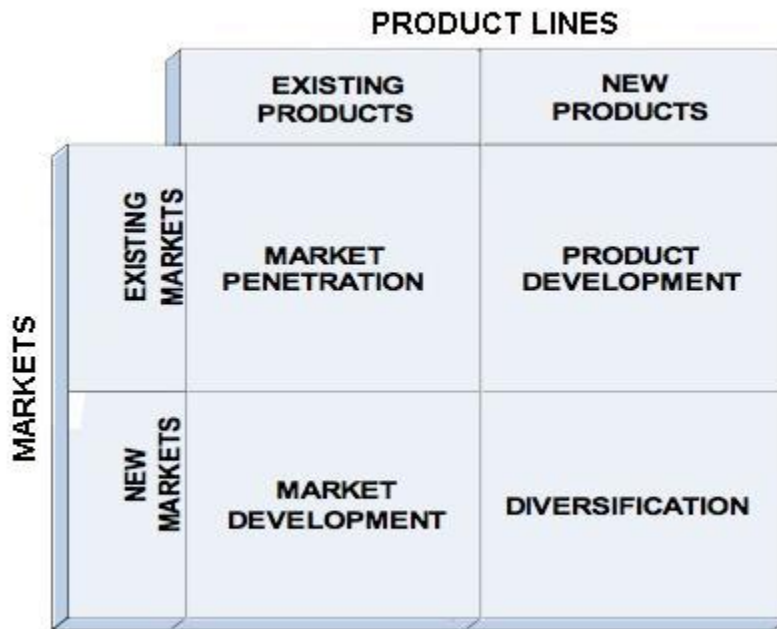
Figure 6: Simplified view of Ansoff Model

Source: own creation

Each of these quadrants describes a specific product marketing strategy as detailed below:

- Existing products to be marketed in existing markets – market penetration strategy

- New products to be marketed in existing markets – product development strategy

- Existing products to be marketed in new markets – market development strategy

- New products to be marketed in new markets – diversification strategy

In order of risks, the strategy based on existing value chains of organizations possesses lowest risks while the strategy requiring deployment of altogether new value chains by organizations possesses highest risk.

Thus market penetration strategies possess lowest risks associated with the implementation but diversification possesses highest risks associated with the implementation. If we take a closer look at the strategies of Ford Motor Company and Tata Motors and map with Ansoff matrix, we can easily conclude that the Ford Motor Company is applying strategies having lowest risk although they are paying highest price for the same whereas Tata Motors is applying strategies with highest risks and hence is in a make or break mode. We present the following analysis for justifying this conclusion:

3.5.1 - Ford Motor Company:

Ford Motor Company possesses the empirically tested primary competitive advantage of flexible assembly lines with interchangeable parts that has worked very well in the past. They have developed a globally centralized supply chain system that has supported their primary competitive advantage effectively.

The current market downturn has definitely affected their revenues and the higher cost of supply chain is hurting them. But with the relatively safer strategy of targeting new markets for existing product lines has kept the interest of their investors alive irrespective of their dismal financial performance. Moreover they have sold off the non-performing assets like Jaguar and Land Rover companies to reduce the burden of operating costs. It is due to their confidence on their low risk strategies that they have refused to avail aid from government and are expecting to break even by 2011 (Barry. 2009).

3.5.2 - Tata Motors:

Tata Motors is currently implementing high risk strategies given that they have attempted to enter two new markets where they do not possess any expertise – UK and European premium car markets with the help of Jaguar and Land Rover and the $2500 Nano car that may altogether develop a new car market globally. If things favor them, they have the potential to become the next Ford of the world but if the happenings do not favor them (like the Singur crisis witnessed by them), then they can suffer losses that will take decades for them to repair.

3.6 - Balanced Score Card Analysis of Ford Motor Company and Tata Motors.

Kaplan and Norton (1996) developed the balanced score card strategy to assess the performance of businesses by virtue of their internal competencies measured through key performance indicators (KPIs). The balanced scorecard is presented in the figure below:
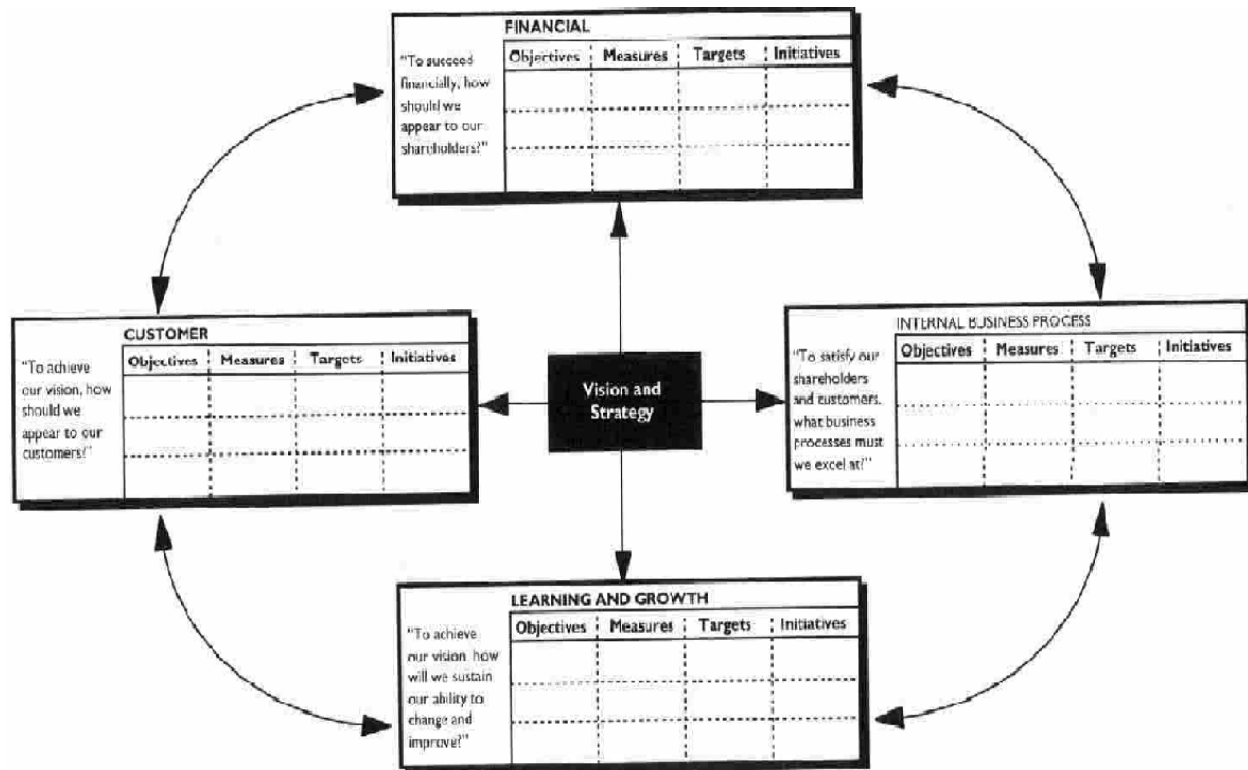
Figure 7: The Balanced Score Card System for Vision and Strategy

Source: Kaplan and Norton. 1996

The strategy is based on four primary factors that balance each other in a strategic framework – Customer, Financial, Internal Business Process and Learning and Growth. The Customer and Financial perspective is the way the company appears to the customers and the Stake Holders whereas the Internal Business Processes and Learning and Growth perspective is the way the company appears to the internal employees and managers.

This dissertation will result in detailed financial perspective of Financials and Customers and hence we will revisit the Balanced Score Card later in the dissertation.

The internal business processes and learning and growth perspective has been quite sound in both Ford Motor Company and Tata Motors but the perspectives have been entirely different. Ford Motor Company has focused on localization of products at a global platter whereby they keep their parts supply chain centralized and assemble cars as per the local requirements of a region after studying the needs.

This has resulted in they able to deliver different variants of cars as per the requirements of different countries using the same spares supplied by their centralized supply chain vendor. Hence, the internal learning and growth of Ford Motors has been very comprehensive with localized knowledge captured from various countries and the benefits of global knowledge and experience effectively mixed with the localized knowledge.

Tata Motors appear to be far behind this strategy as compared to Ford Motors but they appear to be taking the same path towards globalization. They have developed Nano as per Indian conditions to start with but are ready to match the localized conditions required at the global level – like the stringent emission norms of Europe.

They already have their small trucks (Tata Sierra) operating in UK which must have developed their knowledge on UK and European market requirements. Moreover, after the acquisition of Jaguar and Land Rover their knowledge will be strengthened further. They already have the basics in place to apply the knowledge in Nano and it may be just a matter of time that they will be able to achieve compliance for Nano against the regulations of Europe and other countries that they are targeting.

4 | Accounting Principles and Key Ratios

4.1 - The DuPont Analysis.

An end to end strategic analysis technique of a company should be carried out to focus on the following primary perspectives of the business:

(a) Operations Management

(b) Asset Management

(c) Capital Management

The industry standard method for financial performance monitoring of an organization is to keeping a close look on the primary ratios of the company:

Profit Margin

$$= PM = \frac{\text{Net Income}}{\text{Sales (Total Revenues)}}$$

$$\text{Total Asset Turnover} = TAT = \frac{\text{Sales (Total Revenues)}}{\text{Total Assets}}$$

Return on Investment = ROI = Profit Margin X Total Asset Turnover

$$= \frac{\text{Net Income}}{\text{Sales (Total Revenues)}} \quad X \quad \frac{\text{Sales (Total Revenues)}}{\text{Total Assets}}$$

$$= \frac{\text{Net Income}}{\text{Total Assets}}$$

$$\text{Equity Multiplier} = \text{EM} = \frac{\text{Total Assets}}{\text{Total Equity}}$$

Return on Equity = Profit Margin X Total Asset Turnover X Equity Multiplier

= Return on Investment X Equity Multiplier

$$= \frac{\text{Net Income}}{\text{Total Assets}} \quad X \quad \frac{\text{Total Assets}}{\text{Total Equity}}$$

$$= \frac{\text{Net Income}}{\text{Total Equity}}$$

These five critical ratios are collectively analyzed in the DuPont model which is widely used by Finance Managers and Consultants worldwide. The final output of DuPont analysis is the Return on Equity.

The flow chart for the DuPont Analysis of an organization is presented in Figure 1:
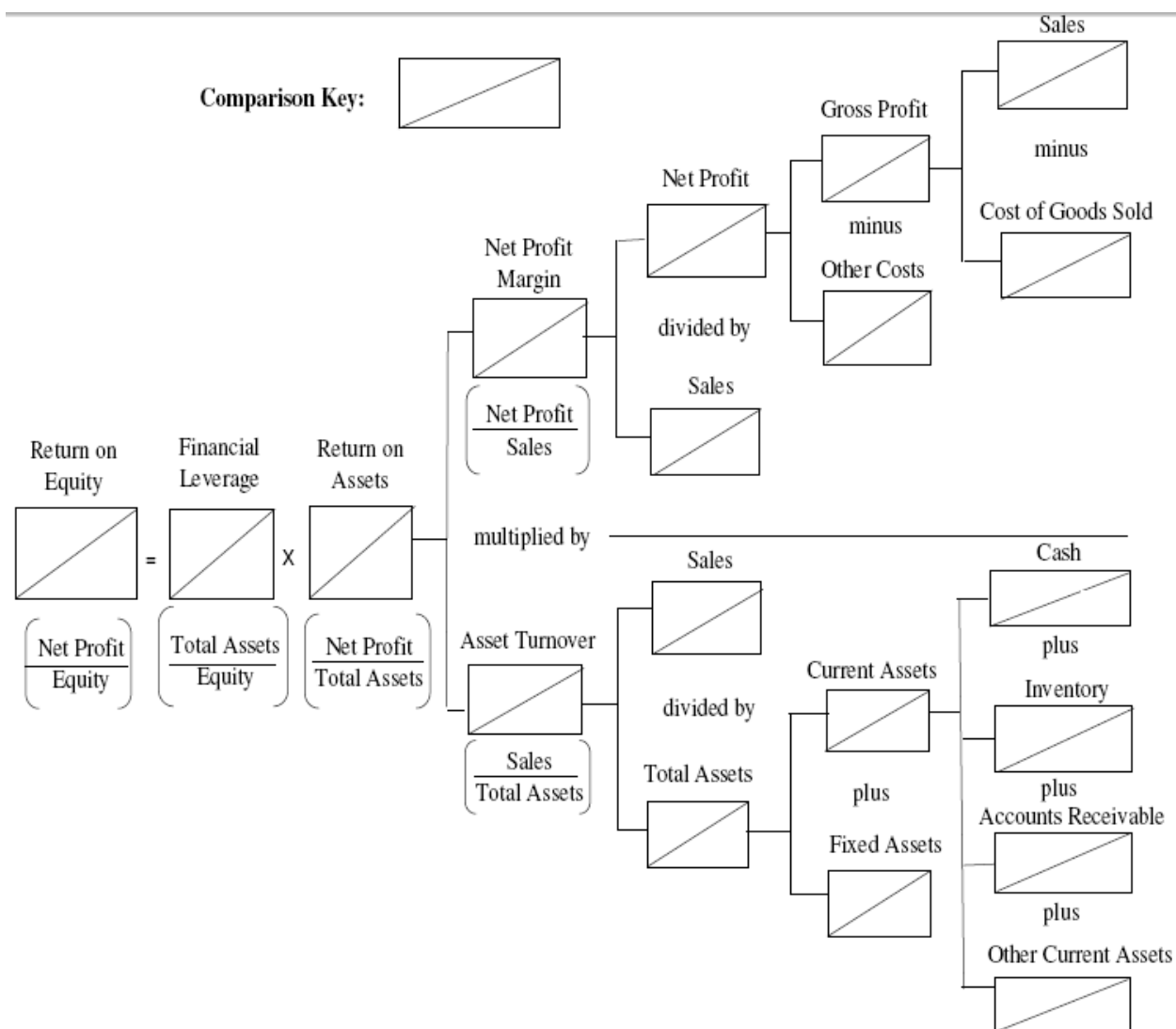
Figure 8: DuPont Analysis – The Return on Equity Flow Chart

Source: Hull and Avey, 2007

4.2 - Valuation Metrics

There are other metrics that are calculated in valuation of a company:

Net Operating Working Capital = NOWC = Net Cash and Equivalents possessed by the company as on last date of the financial year + Accounts Receivables (Receivables pending as on the last date of the valuation year) + Inventories as on the last date of valuation − Account Payables (Payables pending as on the last date of the valuation year) − Accrued Expenses of the entire financial year

Operating Long Term Assets = OLTA = the net property possessed by the company in the form of Land, Assets, Plant, Equipment and Machinery, etc.

Total Operating Capital (also called Invested Capital) = TOC = Net Operating Working Capital + Operating Long Term Assets

Net Operating Profit After Tax = NOPAT

= EBIT X (1 − T)

= Operating Income X (1 − Corporate Tax)

$$\text{Return on Invested Capital} = \text{ROIC} = \frac{\text{Net Operating Profit After Tax}}{\text{Total Operating Capital of previous Year}}$$

Economic Value Added = EVA = Net Operating Profit After Tax − [Weighted Average Cost of Capital X Total Operating Capital of previous Year]

Where, Weighted Average Cost of Capital is a complex calculation presented by the following formula (for just vanilla understanding):

$$= \text{Post Tax Cost of Equity} \times \frac{\text{Firm's Equity value}}{\text{Firm's Debt Value} + \text{Firm's Equity Value}} + \text{Gross Cost of Debt} \times \frac{\text{Firm's Debt Value}}{\text{Firm's Debt Value} + \text{Firm's Equity Value}}$$

Post Tax Cost of Equity = Post Tax rate of return available on alternative equity investments of comparable risk

Gross Cost of Debt = Risk Free Rate = Corporate Debt Premium available to debt providers for alternative debt opportunities of comparable risk

The Weighted Average Cost of Capital is calculated Pre-tax as well as post tax. The Pre-Tax formula is given by:

$$= \frac{\text{Post Tax Cost of Equity}}{1 - T} \times \frac{\text{Firm's Equity value}}{\text{Firm's Debt Value} + \text{Firm's Equity Value}} + \text{Gross Cost of Debt} \times \frac{\text{Firm's Debt Value}}{\text{Firm's Debt Value} + \text{Firm's Equity Value}}$$

The Post-Tax formula is given by:

$$= \text{Post Tax Cost of Equity} \times \frac{\text{Firm's Equity value}}{\text{Firm's Debt Value} + \text{Firm's Equity Value}} + [\text{Gross Cost of Debt} \times \ 1 - T] \ \frac{\text{Firm's Debt Value}}{\text{Firm's Debt Value} + \text{Firm's Equity Value}}$$

Where, T = Corporate Tax

[http://www.financescholar.com/wacc.html;   http://moneyterms.co.uk/wacc/;   Cambridge Economic Policy Associates. 2006]

The other metric based valuation comprises of Book Value, Replacement Value and Liquidation Value, whereby

Book Value = Value of an asset as per the Balance Sheet "Account Balance"

Replacement Value = Cost of replacement of an Asset

Liquidation Value = Value of an asset if to be sold in a finite time period (say one week)

Financial Reports Method and Metrics Value based methodology are the most popular ways of Company Valuation. The other valuation techniques used by experts are – Cash Flow Method and Market Method.

The Cash flow method comprises of calculation of the following variables:

Free Cash Flow = Net Operating Profit After Tax – [Current Year's Total Operating Capital – Previous Year's Total Operating Capital]

Discounted Cash Flow = The cash flow summary that has been discounted to arrive at the "time value of money". It is based on the "Present Value" concept which is evaluated as:

$$\text{Present Value} = \text{Future Value} / [1.0 + \text{Interest Rate}]^n$$

Where n = period of calculation (mostly in number of years)

In this way, the future value is discounted to provide the present value. Example, if $100 is expected in three years and the interest rate taken is 10% then the present value is

$= \$100 / [1.0 + 0.1]^3 = \$75.13$. [http://www.solutionmatrix.com/discounted-cash-flow.html]

There are following steps to calculate the Discounted Cash Flow:

Step 1: The Free Cash Flow is calculated

Step 2: The Weighted Average Cost of Capital is Calculated

Step 3: Free Cash Flow is used to discount Weighted Average Cost of Capital

Step 4: Residual Value is estimated (this is also known as Terminal Value]

Step 5: Residual Value is discounted as well using Weighted Average Cost of Capital

Step 6: Total Present Value of Free Cash Flow is estimated

Step 7: Value of Non-Operating Assets are added

Step 8: Value of Liabilities assumed are subtracted

Step 9: Value of Common Stock is calculated

[http://www.financialmodelingguide.com/valuation-concepts/discounted-cash-flow/]

Other calculations under "Cash Flow Techniques" are Discounted Dividends, Internal Rate of Interest, Profitability Index, Cash Value Added, and Cash Flow Return on Investment. The Market Value method comprises of Dividend Capitalization, Earnings Capitalization, Exceeded Profit Calculation, Relational Value and the Market Multiplications that are the following:

Price to Earnings Ratio = P/E; Where, P is the price of the company share and E = Company's

Earnings per share = Net Earnings of the Company / No. of Shares issued

Price to Revenue Ratio = P/R; Where, P is the price of the company share and E = Company's

Net Revenues per share = Net Revenue of the Company / No. of Shares issued

Earning Ratios: Price to EBIT Ratio and Price to EBITDA Ratio

Enterprise Value/EBITDA Ratio: Where Enterprise Value = Market Capitalization (Total Value of Shares of the company) + Value of Debts Financing (like Bonds and Bank Loans) + Value of Other Liabilities – Value of Liquid Assets (Cash and Investments)

Enterprise Value to Revenue Ratio

Return on Assets: Net Income / Total Assets

Return on Invested Capital: Net Income / Net Invested Capital;

Where, Net Invested Capital = Total Assets – Net Cash – Non-interest bearing current liabilities

Return on Equity: Net Income / Net Shareholder's Equity

Quick Ratio:- [Accounts Receivables + Cash + Cash Equivalents] / Current Liabilities

Current Ratio:- Current Assets / Current Liabilities

Assets Turnover:- Net Revenues / Total Assets

Cash Flow to Revenues Ratio

Enterprise Value to Cash Flow Ratio

[http://moneyterms.co.uk; Dagiliene and Kovaliov. 2006]

4.3 - Financial Analysis of Ford Motor Company and Tata Motors.

As presented earlier, the output of DuPont analysis is the Net Income/(Loss) per share experienced by the investors. In the following table, we presents the Net Income (Loss) per share of Ford Motor Company and Tata Motor as taken from the NYSE data published by money.cnn.com.

The figures presented here of Ford Motor Company are about 99% matching with the ones published in the annual reports of Ford Motor Company. The figures presented here of Tata Motor company have not been matched with their annual statements because the US Dollars to Indian Rupees fluctuations of all the five years may have to be taken into account which may impact the accuracy. Therefore, the figures published by New York Stock Exchange have been incorporated here for analysis:

Year	2004	2005	2006	2007	2008
Ford Motor Company					
Net Income/(Loss) Figures in Millions	3487	1440	(12613)	(2723)	(14672)
Net Income per Share Ratio	1.73	0.88	(6.73)	(1.38)	(6.46)
Dividend Per Share	0.40	0.40	0.25	0.00	0.00
Tata Motors					
Net Income/(Loss) Figures in Millions	368	304	337.4	420.3	355.1
Net Income per Share Ratio	Listed on NYSE for part of year only	0.8	0.9	1.1	0.9
Dividend Per Share	Listed on NYSE for part of year only	0.00	0.29	0.28	0.00

Table 1: Earnings per Share and Dividend per share comparison of Ford Motor Company and Tata Motors

Source: money.cnn.com

The above analysis shows dismal performance of Ford Motor Company after 2005 but consistent performance of Tata Motors in the last five years. Investors have been losing money considerably in Ford Motor Company while Tata Motors has been consistently ensuring returns to investors although the magnitude not growing.

In the table below, we present the key ratios of Ford Motor Company and Tata Motors:

Year	2004	2005	2006	2007	2008
Ford Motor Company					
Price to Earnings Ratio	8.1	6.8	(1.1)	(4.8)	(3.71)
Enterprise Value to Revenue Ratio	1.0	0.7	0.8	0.8	_
Return on Assets	2.70%	2.50%	(2.56%)	1.59%	1.43%
Return on Invested Capital	4.23%	3.90%	(4.09%)	2.54%	2.03%
Return on Equity (Global)	25.18%	13.96%	(252.84%)	(251.78%)	_
Quick Ratio	1.0	1.1	0.5	1.1	1.1
Current Ratio	1.2	1.2	0.7	1.2	1.1
Assets Turnover	0.6	0.7	0.6	0.6	0.6
Cash Flow to Revenues	16.32	13.16	5.01	6.25	_
Enterprise Value by Cash Flow Ratio	6.0	5.4	15.9	12.4	_

Year	2004	2005	2006	2007	2008
Tata Motors					
Price to Earnings Ratio	Listed on NYSE for part of year only	160	10	8	0
Return on Assets	11.22%	11.93%	11.74%	11.56%	8.67%%
Return on Invested Capital	22.47%	24.79%	23.20%	20.06%	14.63%
Return on Equity (Global)	31.16%	34.41%	32.83%	31.33%	26.40%
Quick Ratio	0.48	0.78	0.89	0.92	0.74
Current Ratio	0.86	1.16	1.34	1.33	1.05
Assets Turnover	1.23	1.28	1.26	1.26	0.97
Cash Flow to Revenues	13.14	9.74	9.84	9.47	8.04

Table 2: Key Ratio comparison of Ford Motor Company and Tata Motors

Sources: Thomson Ratios and Worldscope Ratios retrieved from CBS Library; Annual Statements of Ford Motor Company and Tata Motors; money.cnn.com

Ford Motor Company analysis indicate terribly bad return on equities but the return on assets and invested capital have been somehow in positive (except 2006). This means that while Ford Motor Company has exhibited terribly bad performance for investors in 2007 and 2008, they have been able to cut their costs substantially to save the company from bankruptcy. The current ratio went bad in 2006 otherwise is maintained effectively.

The management has been successful in maintaining more assets than liabilities thus indicating that somewhere the foundations are still very strong and the management has been proactive enough to reduce their liabilities amidst the financial turmoil that they have been facing. Except 2006, the organization has been successful in maintaining quick ratio above 1.0 thus ensuring that Cash, Cash Equivalents and Account Receivables are more than liabilities at the end of financial year.

Assets turnover of Ford Motor Company has been disappointing because the net revenues have been lesser than the total assets. The management has overall not been able to capitalize returns against the assets available to them.

The return on assets have been very disappointing as such and hence it seems that Ford Motor Company has somehow survived by reducing their liabilities very aggressively – elimination of excess manufacturing capacity, closing plants, reducing workforce, etc.

The sale of Jaguar and Land Rover to Tata Motors may again be viewed as aggressive attempts to reduce liabilities to keep assets more than liabilities. The shareholder return has shown dismal performance as shown in the figure below:
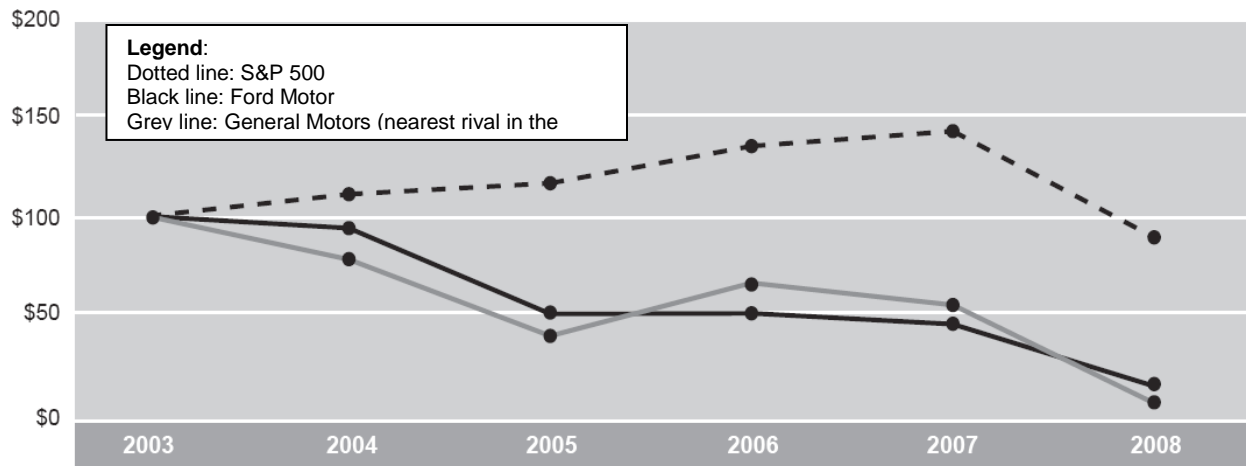
Figure 9: Stock Price of Ford Motor Company in last five years

Source: Ford Motor Company Annual Report 2008

Tata Motors started trading in NYSE from 2004 onwards. They opened with a scintillating performance and showed a boom in 2005 and 2006 but started to decline after that. In 2008, their share prices crashed like a pyramid of cards as shown in the chart below. Hence, the company that exhibited scintillating performance after their launch on NYSE ended up burning shareholder's wealth in 2008. However, this seems to be the result of systematic risks on the NYSE which suffered a systematic crash after 2007.
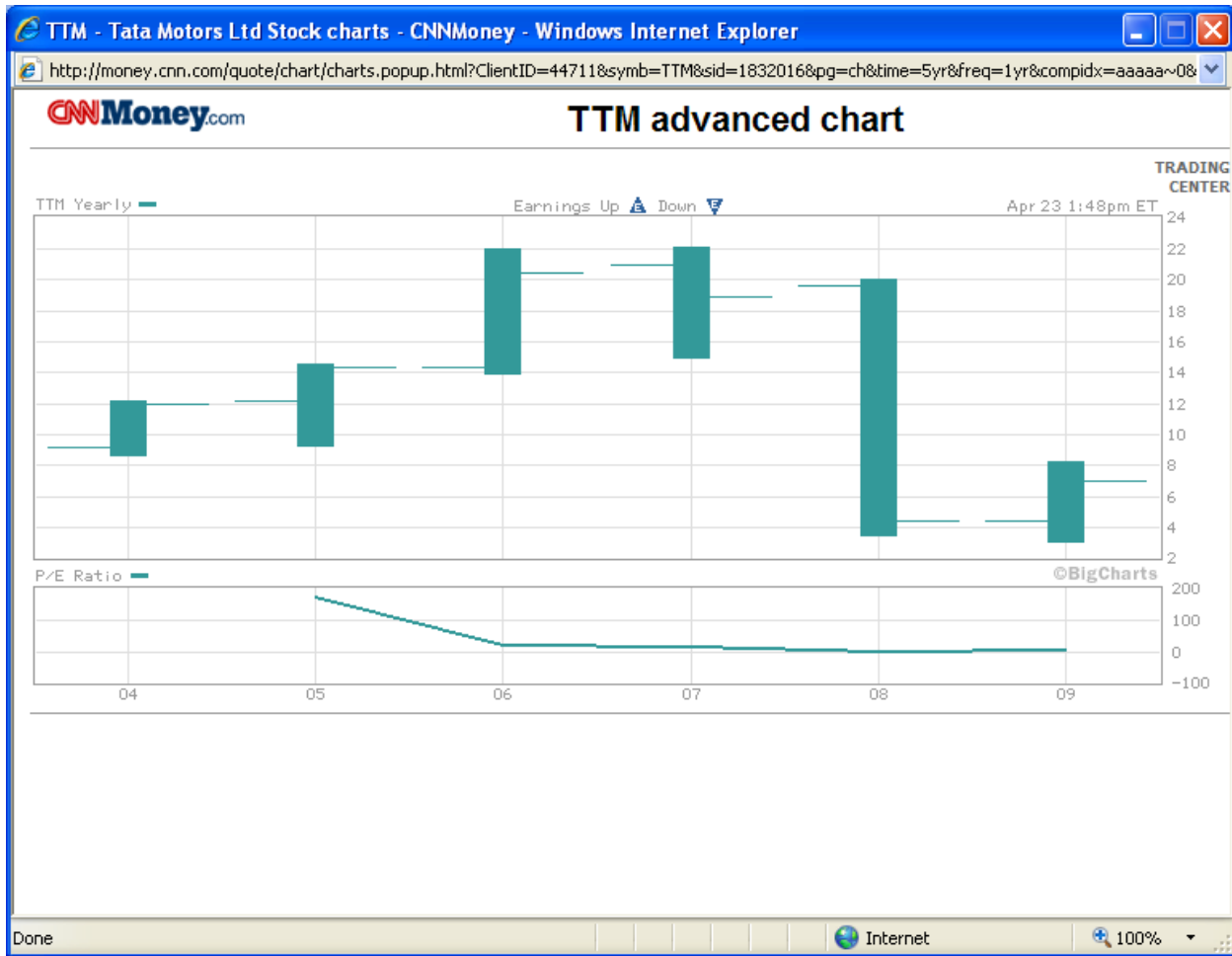
Figure 10: Stock prices of Tata Motors in last five years

Source: CNN Money charts

But overall at a global scale, Tata Motors didn't perform that badly. The rest part of the ratios is from their global performance as reported by Thomson Ratios and Worldscope Ratios (Retrieved from CBS Library). Tata Motors consistently achieved return on assets and return on invested capital that is five times that of Ford Motor Company.

In addition, Tata Motors achieved substantial return on equity that has been more than 30% throughout except 2008 at global level (although in NYSE, their equity value crashed probably due to the systematic risks faced by NYSE which led to an overall crash of the entire stock market).

Tata Motors current ratio is healthy given that they have been able to maintain more assets than liabilities, but their quick ratio is a cause of concern as their liabilities have throughout remained more than their cash balance, cash equivalents and receivables put together. This indicates a high risk appetite of Tata Motors, which is evident by their worldwide launch of Tata Nano and their acquisition of Jaguar and Land Rover from Ford Motors which again is a large acquisition for them given their current size.

Perhaps, they possess such high risk appetite because of the strong support by their parent group (Tata Group) that is diversified into multiple profit earning industries. The assets turnover is much more than Ford Motors which shows the management capabilities of effectively utilizing their assets to generate revenues.

Both companies possess a sound liquidity foundation as their cash flow to revenue ratio has remained positive in past five years. This indicates that both the companies are sitting on a fat cushion of cash and are not expected to face liquidity issues in the near future. This is one of the reasons that in-spite of such a strong financial turmoil, Ford Motor Company didn't accept any aid from the government (Bunkley, Nick. 2009).

5 | Budgets and Forecasts.

The future of an organization is carried out by carrying out capital budgeting and discounted cash flow forecasts. Capital budgeting is carried out to analyze the returns on investments within a specified time period from a project such that the same can be accepted or rejected by the stakeholders. Capital Budgeting decisions have always been a major challenge for corporate management and investors from the perspective of the most appropriate method for carrying out the ROI forecasting and measurements.

In fact the widely accepted decision criteria use an old empirical generalization of "Accept-Reject" criteria established by Beranek in 1975 whereby the project is either accepted or rejected based on its value addition to the firm, the investors and to the shareholder wealth. Beranek showed that the cost of capital of a project is marginalized to maximize the investors' money and shareholders' wealth by including rate of interest, the required rate of return to stock holders, corporate marginal income tax rate, debt to equity ratio and lifetime of the proposed project and the weighted average cost of capital.

In another paper written by Beranek in 1980, he claimed that the Net Present Value rankings of the investment opportunities do not match equity market value unless the projects are of one period duration or are solely financed by equity only. He established the widely used criteria by financial analysts that a project should be accepted only if its Present Value is greater than zero and recommended that the project among multiple mutually exclusive projects having highest Present Value should be chosen for best ROI.

However, Beranek warned of some practical challenges in implementing the Present Value technique in capital budgeting whenever there are uneven cash flows, non-straight line income tax and other depreciations, varying methods of repaying the debts, different treatment of shareholders between capital gains and dividends, or errors in calculation of weighted average cost of capital in finite lived projects.

Overall, the Net Present Value has remained the most trusted method to evaluate capital budgeting decisions due to its advantage of evolving the time value of money (the fluctuations in value of money as time passes). It is globally accepted as the most effective technique to evaluate the true value of capital budget when evaluating the returns from a project.. More than 80% of strategic business expansions, replacement decisions, new operations, etc. are based on NPV technique as reported by Sun and Queyranne (2002).

NPV does has some limitations especially when the systematic risk inputs to the NPV calculations (like interest rates, risk perceptions, etc.) vary considerably. In such cases it may not give a complete picture of returns from an accepted project and hence the IRR (Internal Rate of Return) technique should be used along with the NPV technique.

5.1 - Systematic and Unsystematic Risks.

The capital budgeting technique is largely influenced by systematic risks in the markets. Systematic risks are related to factors that are prevalent in a country, region or at global level and are external to the control of an organization. Examples of Systematic risks are – market risks, political risks, currency fluctuation risks, oil prices fluctuation risks, etc.

Systematic risk assessment is important for the listed companies to effectively price the equities, determining the cost of capital and effective evaluation returns from projects. Unsystematic risks are related to internal threats and vulnerabilities of a company – like attrition, loss of major customers, frauds and scams (like inflated accounting statements), agency issues, sudden obsolescence, fire/special perils, etc. [Chatterjee and Lubatkin et al. 1992; Aaker and Jacobson. 1987]. The following presents a brief on valuation of Systematic Risks when evaluating the return on investments.

The systematic risks are closely correlated with the capital asset pricing when evaluating the prospect. The relationship between systematic risks and returns on investments has been formulated in the Capital Asset Pricing Model popularly called CAPM (Linter, 1965 and Sharpe, 1964 quoted in Aaker and Jacobson. 1987. pp278-279) which is the most accepted technique to calculate return on investments dependent upon time variable. The CAPM is represented by the following equation:

Expected Return on Investments at a time = Return on Risk Free asset at the time + Systematic Risk of investments at the time X (Return on a market portfolio at the time – Return on Risk Free asset at the time)

CAPM is the most accepted technique for valuation of capital assets given its simplicity and underlying economics. The key factor of this equation is the "systematic risk of investments at the time of ROI valuation" which is popularly known as "β-Coefficient".

The "β-Coefficient" is calculated using market linked "news" about the assets presented by the following formula:

Market Beta of asset "i" (β_{im}) = Market beta of news about future cash flows of asset "i" (β_{ic}) –

Market beta of news about future real interest rates (βr) – Market beta of news about future

access returns of asset "i" (β_{ie})

[Campbell and Mei. 1993]

The systematic risks of common stocks of an organization can be evaluated using variance in multiple factors that are closely observed by market experts. Thompson (1976) enumerated the variance in the following factors that market experts observe to evaluate the systematic risks pertaining to the common stocks of a firm:

(a) variance in Dividends

(b) variance in Earnings

(c) variance in Earnings Multiple

(d) variance in Earnings Yield

(e) variance in Operating Income

(f) variance in Sales

(g) variance in Total Debt to Total Assets ratio

(h) variance in Cash Flow to Total Debt ratio

(i) variance in Pretax interest coverage

(j) variance in Current ratio

(k) variance in Working Capital to Total Assets ratio

(l) variance in Cash and Receivables to Expenditures ratio

These Variances are measured as systematic relationships between accounting values of the firm and the aggregated corresponding accounting values of all firms put together. The management of an organization try to smoothen different inputs and outputs to reduce environmental risks which are reflected in these variance analysis and hence they can be logical indicators of systematic risks pertaining to the common stocks of an organization.

To analyze the systematic risks more analytically, Thompson (1976) presented the following mean and trend forms to explain the Systematic Risks to Common Stocks:

(a) Dividend payout by companies – measured as mean of annual dividends to earnings ratios

(b) Dividend payout by companies – measured as the ratio of nine year sum of dividends to the nine year sum of earnings

(c) Analyzing growth in assets

(d) Analyzing growth in earnings

(e) Analyzing growth in Sales

(f) Growth measured as the mean of the asset growth, earnings growth and sales growth

(g) Investments to Earnings ratio – measured as the ratio of the nine year change in assets to the nine year sum of earnings

(h) Return on Investments – measured as the ratio of the nine year change in earnings to the nine year change in assets

(i) Market Volume that is measured as the mean of the natural logs of the market value of annual traded common stocks (in Million US Dollars)

(j) Mean of Annual Ratios of the total debts to the total assets

(k) Mean of Annual Ratios to the cash flow to the total debt

(l) Mean of Annual pretax interest coverage ratios

(m) Mean of Annual current ratios

(n) Mean of annual ratios of the Working Capital to Total Assets

(o) Mean of annual ratios of the Cash and Receivables to the Expenditures for operations

(p) The size measured as mean of natural logs of the total assets (in multiple of $10 Millions)

(q) The size measured as mean of natural logs of the total earnings (in multiple of $10 Millions)

(r) The size measured as mean of natural logs of the total sales (in multiple of $10 Millions)

The unsystematic risks are normally termed as residual risks which are kept out of the modeling but are reported in internal financial analytics. These risks are hard to predict because they depend upon the factors that are internal to the organization and are not linked with the market risks.

The market beta analysis is not a static one time analysis but is a continuous process because the variance in current means compared to the means of past few weeks changes continuously. The market beta analysis requires very complex beta analysis tools for data capturing and analysis. The authors, being students are keeping the process of in-depth analysis out of the scope of this dissertation. However, the authors hereby present forecast reports by money analysis sites pertaining to Ford Motor Company and Tata Motors.

5.2 - Forecast of Ford Motors.

The chart in figure 11 shows the estimates of Ford Motor Company till FY 2010 published by Yahoo Finance as on 24th April 2009. The Earning Per Share estimate continues to be in negative in 2010 but the company outlook looks positive as the growth projections are moving in positive direction as can be seen from the EPS trends in past 90 days.

It appears that the 2010 estimates of EPS are gradually moving in the positive direction which is a good sign for Ford Motor Company. Year 2010 may witness a sales growth in positive as indicated herewith. The next five year industry growth is estimated as more than 10% PA although Ford Motor Company may witness 3% growth PA given dismal performance in the past.

Revenue Est	Current Qtr Mar-09	Next Qtr Jun-09	Current Year Dec-09	Next Year Dec-10
Avg. Estimate	22.01B	25.82B	104.29B	112.26B
No. of Analysts	8	7	9	8
Low Estimate	18.73B	22.97B	89.91B	102.66B
High Estimate	27.30B	31.82B	123.93B	126.50B
Year Ago Sales	39.40B	38.60B	139.30B	104.29B
Sales Growth (year/est)	-44.1%	-33.1%	-25.1%	7.6%

Earnings History	Mar-08	Jun-08	Sep-08	Dec-08
EPS Est	-0.16	-0.27	-0.94	-1.30
EPS Actual	0.20	-0.62	-1.31	-1.37
Difference	0.36	-0.35	-0.37	-0.07
Surprise %	225.0%	-129.6%	-39.4%	-5.4%

EPS Trends	Current Qtr Mar-09	Next Qtr Jun-09	Current Year Dec-09	Next Year Dec-10
Current Estimate	-1.23	-0.77	-2.90	-0.68
7 Days Ago	-1.22	-0.80	-3.07	-0.82
30 Days Ago	-1.15	-0.82	-3.19	-1.03
60 Days Ago	-1.11	-0.78	-3.18	-0.80
90 Days Ago	-0.67	-0.53	-2.40	-0.63

Growth Est	F	Industry	Sector	S&P 500
Current Qtr.	-715.0%	N/A	-9.2%	N/A
Next Qtr.	-24.2%	N/A	30.2%	N/A
This Year	7.3%	N/A	0.5%	N/A
Next Year	76.6%	N/A	71.4%	N/A
Past 5 Years (per annum)	-26.009%	N/A	N/A	N/A
Next 5 Years (per annum)	3%	12.26%	9.51%	N/A
Price/Earnings (avg. for comparison categories)	N/A	N/A	23.14	N/A
PEG Ratio (avg. for comparison categories)	N/A	N/A	2.43	N/A

Figure 11: Market Analysis of Ford Motor Company

Source: Finance.Yahoo.com

The following figure shows CAPM analysis of Ford Motor Company by Thomson One. The Thomson analysis again indicates positive EPS of Ford Motor Company by year 2011 given their spurt of recoveries recently. The market Beta is very high at 2.473, which means that the stock of Ford Motor Company is more than twice riskier than the stock market (https://www.folioinvesting.com/content/help/help_analyzingfolio_beta.jsp).

Ford Motor Company Symbol: F-N (C000001880)

CUSIP	345370860	Qtr1 Mean(Mar09)	-1.114	Price 2/20/2009	1.58
Country	USA	Next EPS Date	4/27/2009	Price Target (12mo.)	2.11
Industry	AUTOMOTIVE MFG	Actual Annual EPS	-3.130	Analyst Rating	
Exchange	NYSE	Last Rptd Qtr (Dec08)	-1.370		
Native Currency	USD	Qtr-1 Rptd (Sep08)	-1.310	Sell ▇▇▇▇ Strong Buy	
BETA	2.473	Qtr-2 Rptd (Jun08)	-0.620		
Indicated Annual Div	n/a	Qtr-3 Rptd (Mar08)	0.200		
*Data Above Shown In USD					

EPS Summary

Period	Current # of Estimates	Current Mean	Mean 4 Wks Ago	% Change	Current High	Current Low	Current Median	Coefficient of Variation	Flash # Est	Flash Mean
FYR1 Dec09	12	-3.177	-2.403	1.322	-1.890	-4.390	-3.250	-23.167	9	-3.170
FYR2 Dec10	12	-0.799	-0.625	1.278	0.500	-2.110	-0.655	-103.630	9	-0.854
FYR3 Dec11	4	-0.108	n/a	n/a	0.200	-0.770	0.070	-416.667	4	-0.108
QTR1 Mar09	9	-1.114	-0.674	1.653	-0.810	-1.420	-1.180	-17.056	8	-1.135
QTR2 Jun09	6	-0.783	-0.528	1.483	-0.250	-1.330	-0.685	-55.172	6	-0.783
QTR3 Sep09	6	-0.615	-0.475	1.295	-0.210	-1.160	-0.570	-53.008	6	-0.615
QTR4 Dec09	6	-0.463	-0.230	2.013	-0.130	-0.990	-0.385	-73.218	6	-0.463
LTG	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Source: First Call - USD

Figure 12: EPS Analysis of Ford Motor Company

Source: Thomson One analysis as on 20th February 2009 from CBS Library

This is the cause of concern and combined with the information that the EPS is going to break even only in the year 2011, the investments in Ford Motor Company appear to be risky affair for at least two to three years. The chart below shows that the EPS from Ford Motor Company may reach break even by 2011.
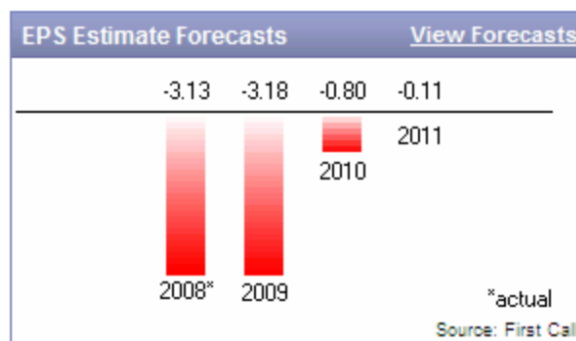
Figure 13: Ford Motor Company EPS may break even in 2011

Source: Thomson One analysis as on 20th February 2009 from CBS Library

The EPS estimates by moneycentral.msn.com also predicts similar results projecting Ford EPS to breakeven by end of FY2010.

Earnings Estimates	Qtr(3/09)	Qtr(6/09)	FY(12/09)	FY(12/10)
Average Estimate	-1.27	-0.83	-2.99	-0.58
Number of Analysts	11	10	12	10
High Estimate	-0.90	-0.49	-1.93	0.10
Low Estimate	-1.60	-1.15	-3.50	-1.50
Year Ago EPS	0.20	-0.62	-3.13	-2.99
Growth Rate	-733.18%	-34.03%	+4.50%	+80.53%

Figure 14: EPS of Ford Motor Company to break even by Year 2010

Source: moneycentral.msn.com

5.3 - Forecast of Tata Motors.

The Market analysis of Tata Motors is not as in-depth as Ford Motors because they are new to the NYSE. The Beta is also not yet published due to lack of adequate historical data. Hence, the estimates do not show too much of variations as such. For example, the EPS for last 60 days is consistently projected as 0.11 for 2009 and 0.2 for 2010. On the NYSE, the company opened with a huge big bang with PE ratio about 160 but has crashed substantially after that. Tata Motors was one such stock that crashed heavily due to the economic turmoil largely because of lack of information about its systematic risks. However, at a global level and especially in the stock markets of India, they have been performing well. Hence, the overall projection of Tata Motors is presented on a positive side with growth projected at 81.8% next year and overall 10% in the next five years.

Earnings Est	Current Qtr Dec-69	Next Qtr Dec-69	Current Year Mar-09	Next Year Mar-10
Avg. Estimate	N/A	N/A	0.11	0.20
No. of Analysts	N/A	N/A	1	1
Low Estimate	N/A	N/A	0.11	0.20
High Estimate	N/A	N/A	0.11	0.20
Year Ago EPS	N/A	N/A	1.28	0.11

Revenue Est	Current Qtr Dec-69	Next Qtr Dec-69	Current Year Mar-09	Next Year Mar-10
Avg. Estimate	8.72B	8.72B	8.72B	11.05B
No. of Analysts	1	1	1	1
Low Estimate	8.72B	8.72B	8.72B	11.05B
High Estimate	8.72B	8.72B	8.72B	11.05B
Year Ago Sales	8.85B	8.85B	8.85B	8.72B
Sales Growth (year/est)	-1.5%	-1.5%	-1.5%	26.8%

EPS Trends	Current Qtr Dec-69	Next Qtr Dec-69	Current Year Mar-09	Next Year Mar-10
Current Estimate			0.11	0.20
7 Days Ago			0.11	0.20
30 Days Ago			0.11	0.20
60 Days Ago			0.11	0.20
90 Days Ago			0.40	0.30

Growth Est	TTM	Industry	Sector	S&P 500
Current Qtr.	N/A	N/A	N/A	N/A
Next Qtr.	N/A	N/A	N/A	N/A
This Year	-91.4%	N/A	N/A	N/A
Next Year	81.8%	N/A	N/A	N/A
Past 5 Years (per annum)	-7.849%	N/A	N/A	N/A
Next 5 Years (per annum)	10%	N/A	N/A	N/A
Price/Earnings (avg. for comparison categories)	69	N/A	N/A	N/A
PEG Ratio (avg. for comparison categories)	6.9	N/A	N/A	N/A

Figure 15: Market Analysis of Tata Motors

Source: Finance.Yahoo.com

The figure below presents the CAPM analysis of Tata Motors by Thomson One retrieved from the CBS Library.

Tata Motors Limited Symbol: TATAMOTORS-BY (C000009240)   ADR: TTM-N

SEDOL	6101509	Qtr1 Mean(Mar09)	17.224	Price 2/20/2009	133.75
Country	IND	Next EPS Date	5/26/2009	Price Target (12mo.)	269.52
Industry	EAFE TRANSPORTATION R&R	Actual Annual EPS	54.465	Analyst Rating	
Exchange	BOM	Last Rptd Qtr (Dec08)	n/a	Sell ▮▮▮▮ Strong Buy	
Native Currency	INR	Qtr-1 Rptd (Sep08)	n/a		
BETA	n/a	Qtr-2 Rptd (Jun08)	n/a		
Indicated Annual Div	15.000	Qtr-3 Rptd (Mar08)	11.126		

*Data Above Shown In INR

EPS Summary

Period	Current # of Estimates	Current Mean	Mean 4 Wks Ago	% Change	Current High	Current Low	Current Median	Coefficient of Variation	Flash # Est	Flash Mean
FYR1 Mar09	8	21.667	25.201	0.860	26.200	15.800	22.100	17.294	6	21.890
FYR2 Mar10	8	22.164	23.771	0.932	29.131	16.900	21.250	19.049	6	22.618
FYR3 Mar11	3	26.147	28.746	0.910	30.467	21.267	26.707	17.688	3	26.147
QTR1 Mar09	1	17.224	17.224	1.000	17.224	17.224	17.224	n/a	n/a	n/a
QTR2 n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
QTR3 n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
QTR4 n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
LTG	2	4.000	6.000	0.667	5.000	3.000	4.000	35.350	1	3.000

Source: First Call - INR

Figure 16: EPS Analysis of Tata Motors

Source: Thomson One analysis as on 20th February 2009 from CBS Library

Please note that Thomson One has not used the data of New York Stock Exchange but rather has used the data of Bombay Stock Exchange. The stocks of Tata Motors in India have been consistently performing with high EPS rating. The overall EPS rating has never gone into negative irrespective of the financial crisis which did hit India as well. Compared to the performance of Tata Motors stocks on the New York Stock Exchange, the performance has been substantially better on their domestic stock exchange in India.

Hence, referring to Michael Porter's competitive advantages theory (presented earlier), Tata Motors do have sound fundamentals for the future because they are strong in their home country unlike Ford Motor Company that has lost ground in their domestic country as well. Tata Motors EPS from 2008 to 2009, however, reduced drastically as shown in the figure below:
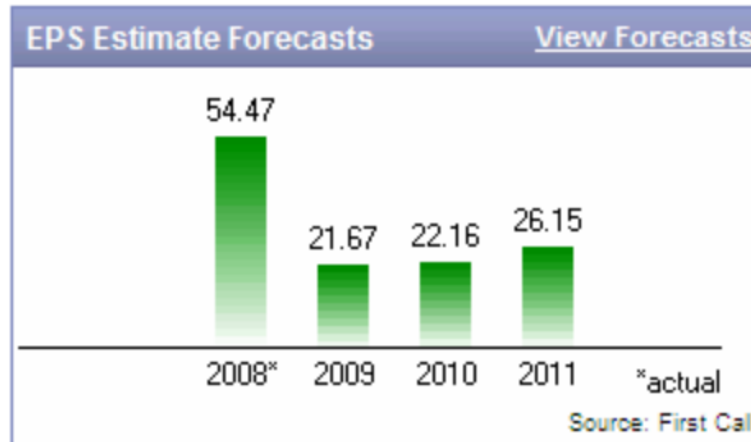
Figure 17: Tata Motors has been consistently ensuring positive EPS against trading at the Bombay Stock Exchange

Source: Thomson One analysis as on 20th February 2009 from CBS Library

The Earning per Share of Tata Motors in 2009 is less than half of that of the previous year. However, most of the year is still to pass and the overall positive lookout by the global markets may ensure that Tata Motors will be able to reach the usual levels. The current projection, however, reveals that Tata Motors may reach about 50% of the levels of EPS that it achieved in year 2008.

Earnings Estimates	Qtr(3/09)	Qtr(6/09)	FY(3/09)	FY(3/10)
Average Estimate	NA	NA	0.12	0.15
Number of Analysts	0	0	3	3
High Estimate	NA	NA	0.16	0.23
Low Estimate	NA	NA	0.09	0.03
Year Ago EPS	0.40	0.18	NA	0.12
Growth Rate	NA	NA	NA	+27.78%

Figure 18: EPS of Tata Motors to increase by 28% in 2010

Source: moneycentral.msn.com

MSN Money is again very optimistic about the future of Tata Motors in 2010 projecting the growth of EPS to about 28%.

5.4 - Cash Flow Analysis.

In an old empirical theory, Bodenhorn (1964) established the importance of cash flow in valuation of stock. He took three primary factors in analyzing cash flows – cash transactions involving goods and services, financial obligations and cash balances. The transactions of goods and services are recorded as capital expenses and recurring expenses when purchasing them and revenues are recorded if the same are sold against cash transactions.

If a credit is extended, and cash has not been received or disbursed against the transaction as on the date of financial statement, the transactions are recorded in the form of obligations. These obligations include receivables and payables pending as on the date of statement. In the firm's own obligation, the debt and equity obligations are considered whereby due to uncertainties in the cash flow, discount rates applied to equity obligations are higher than those applied to debt obligations.

In the world of certainty a company would like to lend all cash balances to earn interest rates. However, the uncertainties always haunt the businesses in many forms and hence they hold cash balances o provide liquidity in crisis situations. Bodenhorn defined an increase in cash balance as "purchase of liquidity" and reduction in cash balance as "sale of liquidity". The management of a firm should project the future cash receivables and payables, subtract payables from receivables to find out the cash flow and then apply the discount level that keeps the present value of the net cash flows greater than zero.

The net cash flows evaluated during the period valuation is the difference between the cash received by the firm from the banks, debtors, customers, etc. and the cash used by the firm to increase the cash balances, make payments for goods/services, pay interests, repay debt, or lend. Bodenhorn (1964) established that such flows should be associated with equity obligations – a positive net cash flow representing the cash payments to stockholders by the firm in the form of dividend payments or stock repurchase and a negative cash flow representing the cash payments to the firm by the stockholders in the form of new stock subscription.

Thus, the value of stock is represented by the present value of the future net cash flows which represents the projected wealth of the stock holders during the period in which the present value has been calculated. However, the actual wealth can differ from projected wealth if the cash flow of the period is different from what has been projected, cash flows projections have changed from the ones that were carried out at the beginning of the period, or if the discount rate has changed from the what was assessed at the beginning of the period. What Bodenhorn didn't explain was the impact of depreciation and amortization on the cash flows.

Kaplan and Ruback (1995) presented two equations for calculating the Capital Cash flow of a company as presented below:

Capital Cash Flow = Net Income + Depreciation + Amortization – Change in Net Working Capital + Interest (Cash and Non-Cash) – Capital Expenditures + After Tax Asset Sales

Capital Cash Flow = Earnings before Interests and Taxes (EBIT) – Corporate Tax [this is calculated as (EBIT – Interest rate) X Tax Rate] + Depreciation + Amortization – Change in Net Working Capital – Capital Expenditures + After Tax Asset Sales

Barth and Cram et al. (2001) argued that the ability of a firm to generate cash flows with positive present values results in positive valuation of its equities. They developed an analytics of predicting future cash flows revealed from various accrual components of earnings that captures delayed cash flows related to past transactions as well as future cash flows as an outcome of the future operating and investing activity of the management.

The model couldn't be build further because it couldn't predict future cash flows based on long term accruals more than one year ahead. However, they could successfully demonstrate the role of six major accrual components – change in accounts receivables, change in inventory, change in accounts payable, depreciation, amortization and miscellaneous accruals in enhancement of predictive ability of earnings.

They have left this methodology to be developed further by future researchers. The discounted cash flow and present value techniques remained two of the most preferred valuation tools for future cash flow predictions.

The Discounted Cash Flow (DCF) is already introduced earlier in this dissertation. Dulman in 1989 presented that Discounted Cash Flow is the sole technique for Capital Budgeting that is adopted by US. However the researchers predicted that the Present Value technique (already introduced earlier) will be globally accepted as the de facto method for capital budgeting to look into the future of an organization.

The discounted cash flow technique is very useful when the cash flow is expected to be uneven, and the project may not behave like a single duration project. For projects anticipating even flow of cash and exhibiting behavior of project in the mode of a single duration project, the present value technique is more suitable.

The discounted cash flow depends upon the cash flow forecasts (that relate directly to the firm being valued) and the historical systematic risks associated with the firm and its entire industry as determined by market analysts. Hence the discounted cash flow method largely depends upon the accuracy of risk assessments, cash flow projections, and the overall assumptions incorporated in calculating the cost of capital. Hence, this methodology largely depends upon the accuracy of the perceptions by analysts which unfortunately is prone to inherent estimation errors (Kaplan and Ruback. 1995). The industry experts, actually, use comparable firm statistics to make their perceptions as accurate as possible.

This is the primary reason that Net Present Value analysis became more popular for cash flow forecasts because it correlates money with time more effectively and is dependent upon the expected return and interest rate. The investment in a project is feasible if the Net Present Value is greater than zero otherwise it can be a loss making affair.

We hereby evaluate the outlook of Ford Motor Company and Tata Motors using Present Value technique. The formula for Present Value is rewritten as below:

$$Present\ Value = Future\ Value\ /\ [1.0 + Interest\ Rate]^{n}$$

We shall carry out the future outlook for the next ten years for both the companies. To begin with, we first look at the cash flow statistics of Ford Motor Company from their capital financing activities assuming it to be a single duration project of next ten years:

	2008	2007	2006	2005
Cash at Beginning of Period	35283	28896	28391	22806
Cash at End of Period	22049	35283	28896	28391
Net Change in Cash and Cash Equivalents	-13234	6387	505	5585

Table 3: Cash Flow Data of Ford Motor Company with values in Million Dollars

Source: money.cnn.com

We begin with the cash at the end of 2008 and assume that $5585 Million is the cash flow per year (change in cash or cash equivalent of 2005 is taken).

Hence, initial cost is taken as – $22049 Million and life of project is taken as 10 years.

The cash flow is taken as $5585 Million per year.

$$Present\ Value = Future\ Value\ /\ [1.0 + Discount\ Rate]^{no.\ of\ years}$$

For example, for discount rate of 5% the formula will look like the following:

For Year, T=0, The formula used is: $- \$22049 / [1.0 + 0.05]^0$ (The first year is taken as Minus sign because this is the initial lot of money getting burnt whereas no returns have yet been realized).

For Year, T=1, the formula used is: $\$5585 / [1.0 + 0.05]^1$

For Year, T=2, the formula used is: $\$5585 / [1.0 + 0.05]^2$

For Year, T=3, the formula used is: $\$5585 / [1.0 + 0.05]^3$

And so on…and finally the values from T=0 to T=9 are summed up to calculate the Net Present Value.

[http://moneyterms.co.uk; Dagiliene and Kovaliov. 2006]

The NPV is calculated for four values of discount rates: 5%, 10%, 15% and 20%.

	Discount rate 5%	Discount rate 10%	Discount rate 15%	Discount rate 20%
Net Present Value (Million US Dollars)	21076	12268	5980	1365

Table 4: NPV of Ford Motor Company if their 2005 cash flow is maintained

It is observed that it is only at 22% discount rate the NPV becomes negative at − $138 Million.

Hence, if for the next 10 years the cash flow status of 2005 is maintained, the company is an excellent venture for investments.

Now let us calculate the NPV keeping the cash flow of 2006 in consideration. We arrive at the following table:

	Discount rate 5%	Discount rate 10%	Discount rate 15%	Discount rate 20%
Net Present Value (Million US Dollars)	− 18149	− 18945	− 19514	− 19931

Table 5: NPV of Ford Motor Company if their 2006 cash flow is maintained

In fact even at 1% discounting, the company will lose all cash in 12 to 14 years time.

Hence, what should be the minimum cash flow for the company to just reach positive minuscule net present value even at a nominal discount level of 5%? The answer is $2860 Million in which the company will achieve a nominal $35.16 Million dollars of NPV. Hence, it is a tough task for Ford Motor Company in the coming years given that they have lost $13234 Million dollars of cash in 2008.

Now, we shall carry out similar analysis of Tata Motors. We take the cash flow statistics of Tata Motors from their capital financing activities assuming it to be a single duration project of next ten years. The financing activities of Tata Motors is currently thinner on the NYSE compared to their size but will provide a good insight of the company about their performance on the NYSE.

	2008	2007	2006	2005
Cash at Beginning of Period	190.90	146.50	109.60	149.20
Cash at End of Period	284.70	177.50	142	111.70
Net Change in Cash and Cash Equivalents	93.80	31.00	32.40	-37.50

Table 6: Cash Flow Data of Tata Motors with values in Million Dollars

Source: money.cnn.com

We begin with the cash at the end of 2008 and take the yearly cash flow as $32 Million. The NPV calculation for the different discount levels is presented in the table below:

	Discount rate 5%	*Discount rate 10%*	*Discount rate 15%*	*Discount rate 20%*
Net Present Value (Million US Dollars)	-$37.6	-$88.07	-$124.10	-$150.54

Table 7: NPV of Tata Motors if their 2006 and 2007 levels of cash flow are maintained

This reveals that if Tata Motors maintain the cash flow levels of 2006 and 2007, they will be a loss making entity even at discount rates of 5%. Now let us take the cash flow achieved at the end of year 2008 as the flow for the next ten years. The results are shown in the following table:

	Discount rate 5%	Discount rate 10%	Discount rate 15%	Discount rate 20%
Net Present Value (Million US Dollars)	$439.60	$291.66	$186.06	$108.55

Table 8: NPV of Tata Motors if their 2008 level of cash flow is maintained

Hence, if the 2008 level of cash flow is maintained by Tata Motors, they will ensure a positive outlook to the investors even at discount level of 20%. In fact, Tata Motors will even sustain a discount level of 30.6% to achieve NPV of $0.60 Million Dollars if 2008 level of cash flow is maintained in the next ten years. It is only at a discount level of 30.7% that the NPV will go in negative at a value of − $0.17 Million dollars.

Hence, what should be the minimum cash flow for the company to just reach positive minuscule net present value even at a nominal discount level of 5%? The answer is $36.9 Million in which the company will achieve nominal $0.23 Million dollars of NPV. Hence, it is a tough task for Tata Motors in the coming years given that they have been consistently generating less than this cash flow and first time in 2008 have exceeded this value.

5.5 - Capital Structure Analysis.

A firm's capital structure primarily comprises of two components, the Debt and the Equity. The overall valuation of the firm is a function of these two components of capital structure. The decision of how much a firm should be financed by debt or equities is very complex whereby an optimal choice depends upon many factors specific to the internal and external environment of the firm.

The overall value of the firm is defined by Ross, et al as the sum of the overall market value of equities and the overall market value of debt. Most companies have maximization of shareholder wealth as one of their primary goals. To achieve this, the firm management tries to decide on the most appropriate debt to equity ratio such that the overall value becomes as large as possible – a company may be totally financed by equity or totally by debt or somewhere in between. Managers are accountable to choose the optimal capital structure that they believe will have the highest firm value and shall be most beneficial to the firm stakeholders.

An old theory on Capital Financing developed by Modigilani and Miller is that the cost of the capital of a firm is independent of its dept to equity ratio commonly known as leverage ratio (Modigilani and Miller, 1958).

Stiglitz (1969) made an observation that all the firms classified under the same risk class may have similar value but with different debt to equity ratios because the focus of financial controllers of the firms has been to maximize shareholder value irrespective of what debt-equity structure they are following. In this context, Modigilani and Miller argued that the valuation of a company improves if they are able to maximize their debt and borrow at lower rates of interest than the dividend payouts of their investors in the equities.

Given that interest rates in debt financing are tax deductible, from their perspective the optimum Capital Structure is the one having debt only. However, Stiglitz proved that if debt is traded in separate market where investors are more pessimistic about the firm than the equity holder and imply their own terms of lending then the overall value of firm decreases on increase of debt.

Kochar (1996) related agency theory with capital structure and argued that agency costs keep a control on the capital structure. If a firm is completely financed by debt and controlled by shareholders, they will tend to take high risks given lower liabilities for maximization of their wealth and hence even may risk the net present value becoming negative.

On the other hand, the managers are bound to take cautious steps to save their jobs and enhance the value of the firm and hence they shall tend to use debts only in case of contingencies. Whether the same is true for this reason or another, it is widely found that firms controlled by shareholders tend to rely more on debt whereas firms controlled by managers rely more on equities.

Sharp (1990) argued that it is more to do with optimal agency control rather than optimal capital structure. From his perspective, a practical generalized model of optimal capital structure may not be feasible; however, existence of more equity may indicate more power to the managers as they tend to use debts more for contingencies during crisis situation to mitigate solvency risks.

In a recent theory Brav (2009) added a new dimension to debt-equity optimization proving that the sensitivity of the controllers of the firm defines how much they allow equity finance compared to debt finance. Traditionally, debt financing has been considered to be safe but curtailing the growth of the firm. Brav (2009) argued that private companies tend to stay away from equity markets and prefer to be more debt financed than equity financed due to high sensitivity to fluctuations in performance. They also argued that the structure of management plays a major role in choosing debt versus equity. Shareholders in family owned businesses that do not like too many fluctuations in performance tend to select debt financing whereas high risk averse managers tend to select equity financing.

O'Brien (2003. pp420) proved an empirical generalization that firms having higher emphasis on innovations (R&D investments) possess lower debt to equity ratios. This is because Research and Development creates substantial amount of intangible assets that cannot serve as an effective collateral in debt financing and hence do not support high levels of debt. Their research proved that all listed companies investing heavily in R&D tend to be more equity financed than debt financed.

In fact, companies having high initial costs of plant and machineries may also try to avoid debt due to large burden of long term interests. Typical examples may be telecommunications industry where global companies are heavily investing in large infrastructures in developing countries. The recent example of Vodafone taking over Essar in India proves this fact that such global giants are seriously interested in large capital investments in developing countries (Vodafone Annual Report. 2008).

However, most of the big giants in telecom industry (like Vodafone, Essar, Verizon, etc) are largely equity financed as evident from their reports on CNN money. This might be because of two major reasons – the limits set by creditors are much lesser than the overall capital structure of such companies or the company management doesn't wish to take long term interest rate burden given the huge capital investments in developing countries.

Shareholders and Creditors normally have conflict of interest pertaining to management policies in capital structure. High performing firms that are able to exceed the value of initial capital by adding earnings pay dividends to shareholders from the excess earning over the initial capital. Hence, Shareholders will try to maximize this "excess earning" to get dividend payments as fast as possible.

But this is against the interest of creditors and hence they will try that the dividends are postponed as much as possible such that they receive prolonged interest payments. Hence, creditors tend to set forth their own terms related to decisions on management policy before disbursing the loan (like applying limits, disbursement schedule, etc.) in such a way that the terms may indirectly constraint the management of the firm on the excess earning and hence impacting the overall growth.

This theory has been taken from the literature of Borch (1969). In such a condition, the Shareholders need to play smart and try to manage an optimum arrangement given such terms of creditors are honored as well as the shareholder wealth can also be improved. This theory somehow proves that lower debt to equity ratio tend to enhance the shareholder wealth given that the management is equipped with more financial freedom (but large obligations) thus helping them to apply more innovations in business growth.

Example, a creditor might not have allowed Vodafone to invest so heavily in developing countries because they would have viewed very high risks in such investments. However, there can be one factor that can bend any management towards debt financing – Financial distress. The investors tend to lose interest in the equities of a company undergoing financial distress whereas the creditors will enjoy their own terms of loans given that they are taking a calculated risk of lending the distressed company. Probably, this is one of the reasons of the global problem of inflated accounting statements to keep interest of equity investors alive.

Hence, to summarize the above jargons, the optimal structure is decided by the firm management from the perspective of – terms of creditors, financial policies and goals, capacity to take interest burden, the rate of interest, the limits and disbursement schedule of financing, vision of shareholder wealth growth, etc.

Now let us compare the capital structures of both Ford Motor Company and Tata Motors:

Ford Motor Company:

Year	2008	2007	2006	2005
Equity	17311	5628	3465	13442
Debt	154196	168530	171832	153278
Debt to Equity Ratio	**8.91**	**29.94**	**49.59**	**11.40**

Table 9: Debt to equity ratio of Ford Motor Company

Source: CNN Money

Tata Motors:

Year	2008	2007	2006	2005
Equity	2630.3	2119.9	1821.5	1293.1
Debt	3193.6	1836.1	823.8	653.3
Debt to Equity Ratio	**1.21**	**0.87**	**0.45**	**0.51**

Table 10: Debt to equity ratio of Tata Motors

Source: CNN Money

Ford Motor Company has been largely debt financed for past four years whereas Tata Motors has been largely equity financed in the past four years. We hereby attempt to apply the theories studied above to evaluate the possible root causes:

5.5.1 - Ford Motor Company:

The company has been under financial distress for quite some time as it has faced huge bottom line losses in the past. Moreover, the automobile sector doesn't seem to be promising as has been detailed in the systematic risk assessment in the dissertation. Hence, in such circumstances, the investors in equity have lost their interest in the company equities. Moreover, the company has not paid cash dividends in 2007 and 2008 as reported by CNN Money.

Hence, the company had to bend towards debt financing to run their operating expenses. In fact, the sale of Jaguar and Land Rover again has been used to generate cash to run operations. The company has not invested in new ventures for a long time and has been busy closing manufacturing units and firing people. Hence, the company will not be stuck with large amount of mortgaged assets as such. Hence, overall by choice or by circumstances, the company has been bent towards debt financing.

5.5.2 - Tata Motors:

Tata Motors have been consistently paying dividends and hence keeping shareholder interests alive. Moreover, they have been busy establishing new plants to meet their commitment of Nano. The development of Nano itself must have forced them to incur heavy expenses in R&D.

Hence, overall the situation for Tata Motors is not in favor of Debt financing given that mortgage charges against such huge plant and machinery equipment plus the long term interest rates may add large burdens on their already "not so promising" fundamentals. But, Purchase of Jaguar and Land Rover again has happened at more than 20% of their annual revenues which already must have put them into liquidity troubles. Hence, they may end up bending towards debt financing if they undergo financial distress in the near future. Also, interest rates of debt financing from 2006 onwards have not been attractive.

They have been performing quite well on the NYSE and the Bombay Stock Exchange (it is called SENSEX). However, their performance in 2009 will determine how much they can continue with equity financing. As per theories discussed above, increase in debt financing will affect their dividend payments as well which may lead to further reduction in equity component. Hence, they have to plan their capital budgeting carefully to achieve optimum financial efficiency.

6 | Different Valuation Methods.

In this section we present details of various valuation techniques and their merits under different scenarios of valuation. The valuation of a company is not absolute such that every market expert may arrive at identical results. It depends upon the perceptions of risks, the opportunities that the company can avail, the nature of financials of the company, the overall organizational strategy for running operations and doing business, the time horizon in which the analytics is being carried out, comparison with other companies, etc.

Hence, the valuations largely differs with the purpose of valuation – tax calculations, raise capital from investors, management buyout, parting ways among shareholders, estate planning, merger or acquisition, financial reporting, employee stock holder ship, etc. An industry expert says – "Change the question and you change the value of the company" (Lamb, David. 2007). Example, the valuation is lower for the purpose of parting ways or tax planning but is higher for the purpose of raising additional capital from investors or selling the company.

Lamb, David (2007), a business valuation consultant, argues that the valuation of a company is analogous to the valuation of real estate property. The value of a house is not calculated based on the overall cost of materials (bricks, mortar, cement, steel, etc) used to construct the house. The only way to find out its value is put the house on sale and find a buyer. The amount of money that buyers are willing to pay for the house becomes its market value.

Many factors heavily contribute to its market value – location of the house, schools, hospitals, markets, transportation, etc. in the vicinity of the house, scenic quality of surroundings (say lake facing or river facing), etc. Most of these factors cannot be measured accurately and hence are valued by virtue of perceptions of the potential buyers.

Likewise, the valuation of a company is not completely based on the cost of buildings, plant and machineries, furnishings, inventory, etc. rather is based on many market driven factors, like the market beta introduced earlier in this dissertation. In fact assessment of tangible assets of a business can better be termed as "appraisal" rather than "valuation".

The valuation will include tangible as well as non-tangible assets whereby the intangible assets may include customer databases, telephone numbers, operating history, brand equity and heritage, files and records both in paper formats and computerized formats, intellectual properties, designs, documentations, knowledge base, etc.

6.1 - Overview of Valuation Techniques.

Dagiliene and Kovaliov et al. (2006) carried out an investigation into the correlations between accounting data and company valuation to discover that they are getting more and more distant with the increased complexity of modern valuation techniques. The traditional method of company valuation is to look into the size of earnings. However, in the modern context there are many factors that contribute to the insufficiency of accounting information in deciding the value of a company.

Some of the factors are:–

- R&D expenditures: The R&D expenditures directly reduce the size of profit although the company's overall value might be increasing.

- Valuation of intangible assets: A substantial part of intangible assets of a company cannot be accounted for and included in the balanced sheet due to limitations or lack of accounting rules and principles pertaining to them.

- Recognition of expenditures: many expenditures like reorganization and restructuring during mergers and acquisitions have many non-quantifiable components (like the efforts of executives, special task forces, etc.) that cannot be taken in the overall valuation. One may like to call them – cost to process an acquisition.

- Analysis of profitability factors: Accounting information is static and depends upon history; complex calculations like time value of cash cannot be incorporated in the profitability factors of accounting statements.

- Qualitative Parameters: Many qualitative parameters of an organization like – loyalty of customers and employees, internal competencies and knowledge, creativity of the organization, culture, motivation, encouragement, etc. also contribute to the value creation. For example, an organization with high profitability but poor employee satisfaction and internal disputes may lose marks in overall valuation. Such factors cannot be reflected in the accounting statements.

- External Environment: Legal environment, compliance, technological developments, industry forecasts, etc. going in the favor of the organization are also included in the valuation.

There are four broad methodologies of company valuation:– Asset valuation, Income based valuation, Cash Flow based valuation and Market based valuation. Following are the techniques that are used under these valuation methodologies:

(a) Asset Based Valuation:

    i. Adjusted Book Value

    ii. Book Value

    iii. Liquidation Value

    iv. Substantial Value

    v. Intellectual Property Valuation

(b) Income Based Valuation:

    i. Value of Earnings

    ii. Value of Dividends

    iii. Sales Multiples

    iv. Other Miscellaneous Multiples

(c) Cash Flow Based Valuation:

     i.   Free Cash Flow

     ii.   Equity Cash Flow

     iii.   Capital Cash Flow

     iv.   Net Present Value

     v.   Economic Value Added

     vi.   Market Value Added

(d) Market Based Valuation:

     i.   Dividend Paying Capacity

     ii.   Price to Earning Ratios

     iii.   Earning Per Share

     iv.   Price to Book Value

[Shelton, Fred. 2001]

6.2 - Asset Based Valuation.

Asset based approach is also called cost based approach in which the valuation of the company is carried out by accumulating the costs that would be required for replacing or selling off the assets. The fundamental approach to this approach is that an investor would not like to pay the cost price of the asset but would rather like to pay the replacement cost of the asset as per the market valuation.

This approach is not a seller friendly approach because certain assets devaluate in the market very rapidly due to technological changes, currency fluctuations or reduction of inflation. Examples of such assets are computers, cars, mobile phones, etc. However buyers do like this valuation because asset based valuation may end up achieving the lowest value of a company assuming that it is a startup. Some assets like buildings and land do result in larger valuations. The primary advantages of asset based valuation are:

a. Measure of security in valuation of company shares

b. Measure of added value when comparing with other similar firms

c. Measure of the baseline cost of a company before outcomes of other valuations are added

The primary disadvantages of asset based valuation are:

(a) Lack of professional valuation experts that specialize in a particular asset type

(b) Very much speculation driven

(c) Realization of true value of assets is a difficult task

(d) No definite market for assets that can guide on their market valuation – example, commercial land, buildings, cars, etc. are all driven by availability of interested buyers which may not happen during the valuation process.

[Fernandez. 2004]

The primary methods of asset valuation are – Book Value, Adjusted Book Value, Liquidation Value and Substantial Value; these values are defined below:

Book Value: Book Value is also called Net Worth. It is defined as the value of shareholders' equities stated in the balanced sheet that includes capital and reserves. This is purely based on accounting statements and hence is unlikely to be realistic.

Adjusted Book Value: This is the Book Value on the balanced sheet of a company that includes the values of assets and liabilities adjusted to market values.

Liquidation Value: The term liquidation is directly related to cash. The liquidation value is thus the immediate cash that can be generated after all assets on the balanced sheet is sold quickly and the debts and liquidation expenses (like layoff compensation to employees, taxes, duties, etc.) are paid off. Such a valuation is carried out to plan for an unforeseen event of bankruptcy.

Substantial Value: Substantial valuation can be carried out to establish an investment required to form an identical company to the one being valued. It is also called "Asset Replacement Valuation".

[Fernandez. 2004]

<u>Intellectual Property Valuation</u>: This section shall be presented in considerable depth given the complexity of the subject. Intellectual Property Valuation can result in higher market valuation of a company if the tangibility factor can be assessed, demonstrated, documented and approved by experts. Intangible assets are of two types – Identifiable intangible assets and Unidentifiable intangible assets.

The identifiable intangible assets are the intellectual property assets like Patents, Designs, Know How, Trade Secrets, Copyrights, Brand Names, Trademarks, etc. Intellectual Property Assets can be easily identified due to its "legal existence".

Unidentifiable intangible assets are Reputation, Goodwill, Management Team, Customer Base, Distribution Networks, Trained Workforce, etc. which are critical components of the company itself. The unidentifiable intangible assets normally form the residual part of the company value after all other assets including the Intellectual Property assets have been included in the valuation statements.

In order that the intellectual property can be included in the asset list, they need to be identifiable as discrete legal entities (like copyrights, having ISSN numbers, patented, etc.), should be justified to be value adding to the ongoing business, should be adequately protected and not available to general public (like sound access controls on the IT systems) and should be transferable to the buyer.

The IP assets need to be grouped adequately to ensure that they are packaged with all the required information that is essential for the buyer to make use of it. For example, a product patent is of no use without the underlying know-how, recipes, manufacturing methodology, etc. The financial valuation of Intellectual Properties is more complex than valuing tangible assets. In order to arrive at appropriate costing of the IP asset, the following parameters should be considered:

(a) What is the type of IP being valued – Copyright, Design, Trade Secrets, Patents, Brand Names, Trademarks, Know How etc.?

(b) For whom the valuation is being carried out?

(c) What is the overall purpose (or purposes) of the valuation?

(d) On which date the valuation is being carried out (important to assess obsolescence of the asset)?

(e) What valuation method should be chosen to value the asset? The valuation methods for Intellectual Properties are Market Value (if similar assets have been sold recently), Cost based (historical costs attached), Projected Economic benefits that the asset can ensure for the buyer, etc.

[Turner. 2000]

6.3 - Income Based Valuation.

Income based earnings are essentially based on the income statements of the firm. The valuation carried out here is based on sales, earnings and such other performance indicators. The primary factors that this valuation technique takes into account are – Status of the Industry, Status of the firm in the said industry, Marketability, Asset backing and liquidity and dividends paid. The primary advantages of asset based valuation are:

(a) Provides perfect information of valuation

(b) Perfect valuation method for the sellers

(c) Value of Dividends is known to the shareholders

(d) Companies consistently paying dividends achieve higher values

(e) Company's true market standing is visualized in the said industry

(f) Future of the industry (where the company is operating) is also visible

[Fernandez. 2004]

The primary disadvantages of this valuation technique are:

(a) Companies not paying dividends are not necessarily at lower values – it can be due to certain invisible impending factors like terms of the creditors

(b) Companies need to tangibly demonstrate enough profitable projects to claim that they can maintain the dividends (sometimes, companies increase debt to pay outstanding dividends)

(c) Dividend policies can be changed after takeover in case the valuation is carried out for an M&A thus giving wrong picture to the investors

(d) Taxation and Issuance expenses do not get exposed adequately

The primary methods of income based valuations are – value of earnings; derived from price to earnings ratio, value of dividends, sales multiples, and some other miscellaneous multiples.

Value of Earnings: In this method, the value of the equity is calculated by multiplying the net annual income with the PE ratio (introduced before in this dissertation).

Value of Dividends: As introduced earlier, dividends are parts of the earnings that are paid out to the shareholders. In this valuation method, the net present value of the dividends is evaluated. The valuation formula used is:

Equity Value = Dividend Per Share distributed in the last year / required return on equity

However, if Dividend is expected to grow indefinitely at a constant annual rate then the equity value is obtained as:

Equity Value = Dividend Per Share for the next year / [required return on equity – constant annual rate of growth of the dividend]

Empirically, it has been observed that the growth rate of equities of a company reduces if the company tends to pay more dividends to shareholders. This is because majority of profits are distributed to shareholders thus resulting in lesser money for funding the growth.

Sales Multiple: In this valuation method, the company's value is calculated by multiplying its sales by a number. The number is determined by market analysis of an industry and is normally fixed for certain industries in an year.

Other Multiples (introduced earlier):

Price to Sales Ratio = Price / Earnings (PE) X Earnings / Sales

[The earnings / sales is normally referred to as return on sales.]

Equity Value to Book value ratio

Working Capital to Earnings before interest and taxes (EBIT)

Working Capital to Earnings before interests, taxes, depreciation and amortization (EBITDA)

[Fernandez. 2004]

6.3 - Cash Flow Based Valuation.

This is the most widely used valuation technique from seller's perspective and normally gives seller friendly results when carried out in conjunction with income based valuations. In fact, given the shear complexity of the methods, the sellers can achieve higher valuation if they play with the numbers smartly.

In this method, the company valuation is carried out first estimating the future cash flows and then discounting the same at a discounted rate commensurate with the risks. There are not too many advantages of this method because it is largely based on speculations and some kind of "numbers" (like market beta, discount rates, etc) that come out very complex systems that are hardly understood by vanilla investors. The primary advantages of cash flow based valuation are:

(a) If done properly, the real underlying picture of the company can be exposed

(b) It is completely seller friendly because the buyer shall hardly have strong arguments against the forecasts. At the most they can increase the discounting rates but will have to justify them.

(c) The method is friendly to accountants who can use the inputs from the accounting statements.

(d) Although outcomes may not be reliable, it is the only conceptually correct valuation method.

The primary disadvantages of this method are:

(a) Largely based on market driven speculations

(b) It is very difficult to select appropriate cost and structure of the Capital

(c) Estimates of future cash flows are largely unreliable when the company is largely equity financed; however it is more reliable when the company is largely debt financed

(d) Not best understood by minority investors

(e) Valuations can be volatile that are subject to market beta fluctuations due to impending factors like interest rate fluctuations, inflation fluctuations, currency conversion fluctuations, etc.

(f) Not reliable to assess return on investment for the investors; hence projects having NPVs marginally above zero should not be considered.

[Fernandez. 2004]

The primary techniques for cash flow based valuations are – Free Cash Flow, Capital Cash Flow, Net Present Value, Economic Value Added, and Market Value Added.

Free Cash Flow: The free cash flow projection of a company is the after tax operating cash flow projection of a company without taking into account the debt. The free cash flow can be used to calculate projections in debt cash flow and equity cash flow. The debt cash flow is very easy to calculate; it is the sum of principal repayments and interest payments. In case of fully debt financed companies (like private firms) the debt's market value is equal to the book value. The equity cash flow however is complex and is normally treated separately.

Equity Cash Flow: The equity cash flow projection is normally calculated from given free cash flow and debt cash flow. This is the easiest way of its calculation given its complexity as such. The formula for Equity cash Flow is as presented below:

Equity Cash Flow = Free Cash Flow – [interest payments X (1 – Tax Rate)] – Principal Repayments + New Debt

This equation may have simplified the projection of Equity Cash Flow but the dividends and other expected payments to shareholders must be factored into the equity cash flows.

The cash flow projections assume that the capital structure will remain unchanged during the valuation period. Change in capital structure may change in internal components of the cash flow keeping the overall cash flow projection constant.

Capital Cash Flow: Capital cash flow projection is the sum of the debt cash flow projection and the equity cash flow projection.

Net Present Value: Already introduced earlier

Economic Value Added: Commonly known as EVA, it is presented by the following simple equation:

EVA = Net Operating Profit After Tax (NOPAT) – Weighted Average Cost of Capital (WACC)

X Firm Capital

Hence, the key parameter that defines the EVA is the WACC that is already introduced earlier in this dissertation. However, let us analyze the significance of WACC and EVA. As analyzed earlier, any business capital is financed by a combination of Debt and Equity.

However, the stakeholders of debt and equity are different and most of the times have conflicting interests. But the finance managers of a company should choose an optimum combination of debt and equity such that the company is efficiently financed keeping in view the taxation treatments of interest of debt and of profit.

Hence, to determine the WACC of the capital the cost of debt, cost of equity and proportions of both need to be determined for optimum efficiency in capital finance of a company. The correct cost of debt should be assessed after analyzing the systematic risks and arriving at optimum efficiency of the financed company.

Most companies do so by assessing the risk free rate and then assessing the debt risk premium expected to be incurred over a period by a comparable company having similar business and regulatory risks.

The correct cost of equity is analyzed using the CAPM method presented earlier in this dissertation. The Equity Risk premium however is not as straight forward as debt risk premium. By vanilla definition, equity risk premium is defined as the extra return over and above risk free rate. (Cambridge Economic Policy Associates. 2006)

Hence, EVA essentially is the true return on capital (true economic profit) after making the adjustments pertaining to WACC.

Market Value Added (MVA): The market value added is equal to the market value of the firm (value of firm's debt and equity) subtracted by the capital invested in the firm. Essentially, MVA is equivalent to PV for all the future expected EVAs. Negative MVA reveals destruction of company wealth and positive MVA means construction of company wealth over and above the invested capital. (http://www.valuebasedmanagement.net/methods_mva.html)

[Fernandez. 2004]

6.4 - Market Based Valuation.

Market based valuation is an external perspective of valuation of a company. The ratios are already discussed earlier in this dissertation. This valuation technique essentially requires the values to be compared with comparable companies operating in the market. There is a lot of emphasis on market based valuation especially in the context of fair valuation regulation of SFAS 157. The next section presents a brief on the fair valuation code presented by SFAS 157 and 159.

6.5 - A Note on Fair Value.

In an interview with Mr. Robert H Herz, FASB Chairman, he emphasized that the SFAS 157 was not the first introduction of the concept of Fair Value measurements in the accounting world. Fair Value has appeared in many standards in the last few decades and hence is not a new concept by any chance.

However, a consolidated standard of fair value from GAAP perspective was needed for quite some time and hence SFAS 157 was introduced to fulfill this criteria. The emphasis of fair value is to provide accurate information to those individuals that study financial statements and then take decisions on investments and credits based on such statements in the debt and equity markets.

Fair value is not essentially a replacement of historical costs but is an additional projection to the users of the accounting statements about the current market valuation of assets whereby cash assets and cash equivalents should be presented separately showing different perspectives.

Mr. Herz insisted that accounting professionals have all the rights to accommodate both fair value and historical costing in one accounting model but fair value is mandatory from GAAP perspective. He informed that prior to working on SFAS statement 157 they interviewed some of portfolio managers and financial analysts from the industry that work upon analytics of companies that handle energy trading regarding feasibility of fair value.

These portfolio managers and financial analysts preferred "fair value with additional disclosure" taking the learning from Enron meltdown that largely occurred due to scam against fair valuation. [Kranacher, Mary-Jo and Morris, Tom. 2007]

Now here is the point presented – why should people learn and adopt best practices only after major scandals, scams or crisis has occurred and billions of dollars and future of millions of people have been drained down? There is lot of opposition against fair value norms of FASB 157.

However, If FASB has concluded that fair value measurement should be the way of life of the accounting professionals in the industry, they must have gone through loads of analysis before making this mandatory for all companies.

The accounting professionals are accountable to develop detailed methodologies of implementing fair value norms in accounting statements by coming out of their comfort zones because the accountability of such professionals is to protect the interest of investors in the publicly listed companies and overall protect the nations from financial crisis that causes enormous embarrassment, loss of money, unemployment, and an overall reputational loss of the nation in front of the world.

The SFAS statement no. 157 defines the fair value, establishes a framework for measuring fair value as per GAAP norms and elaborates the disclosure requirements for fair value measurements. As per SFAS 157, fair value is the "exit price" of an asset that would be realized on making its sale or else transferring the liabilities between market participants via an orderly transaction from sellers to buyers.

Fair value is not measured as the "entry price" which is the price at which the asset can be acquired on the measurement date. The valuation techniques required by SFAS 157 are market Approach, Income Approach as well as Cost Approach as introduced earlier in this chapter. The approach or combination of approaches for fair value measurements depends on case to case basis in various organizations.

However, it is expected from the reporting entities that all the valuation techniques should be used to measure fair value of the company as such. In the market approach, comparison with identical or comparable assets prevailing in the market is required to be carried out. In income approach, the assumptions by market participants on the future cash equivalent value of the asset (like discounted cash flow and present value) needs to be worked out. The cost approach takes into account the replacement cost of the asset as per market data. [Fuglister, Jayne and Bloom, Robert. 2008; Zacharski, Anthony. H. and Rosenblat, Alan et al. 2007]

The SFAS statement 157 also requires three levels of valuation in the "fair value hierarchy" whereby the first level has highest priority and the third level has lowest priority in the valuation process. The first level corresponds to "quoted prices" in the active markets for identical or equivalent assets/liabilities that the reporting entity has access to on the day of measurement.

The second level corresponds to observable quoted prices of identical or equivalent assets in the active and inactive markets or the market inputs on the asset/liability such as interest rates, yield curves, etc.; or the market inputs not directly observable but from some observable inputs that can be useful in deriving the value of identical assets or equivalents on the measurement date. Active markets are those where the transactions pertaining to the asset or liability occurs at sufficient frequency or volumes.

The third Level corresponds to unobservable inputs based on self made assumptions by the reporting entity as such. For inputs based on bid-ask prices, the statement requires that the best price within the bid-ask spread should be used irrespective of the hierarchical position (first, second or third level positions) of the inputs.

For restricted stock prices, the statement requires that the pricing of an identical unrestricted security from the issuer traded in the public market should be adjusted to facilitate the market participants in taking into account the restrictions in pricing of the restricted asset.

In the section of disclosures, the statement has defined that the reporting entities should not only disclose the accounting statements with fair value estimates but also disclose the inputs and hierarchical levels in arriving at the estimates as such.

If fair value estimations have been carried out using too many unobservable inputs (third level), then the reporting entity is supposed to disclose gains and losses within the estimation period and the purchases, sales, issuances, settlements and transfers of all assets. [Zacharski, Anthony. H. and Rosenblat, Alan et al. 2007]

A complete view of Fair Value Hierarchy is presented in following Figure:

EXHIBIT 1
Fair Value Hierarchy

"Valuation techniques used to measure fair value shall maximize the use of observable inputs and minimize the use of unobservable inputs." (SFAS 157, para. 21)

Inputs are observable (highest in the hierarchy) ←→ Inputs are nonobservable (lowest in the hierarchy)

Level 1: Inputs are quoted prices for identical items in active markets.	Level 2: Inputs are based on independent market data.	Level 3: Inputs are unobservable and reflect company assumptions.
1. The entity uses quoted active market prices for identical items that are accessible at the balance sheet date.	1. The entity adjusts quoted active market prices for similar items.	1. No market price of an identical or similar item exists, but an exit or market price is still necessary.
2. Fair value is the quoted price times the quantity held with no adjustment for block size.	2. The entity may adjust quoted prices of identical or similar items in markets that are not active.	2. The entity develops its own risk-adjusted model, which must include the risk of the model itself. The pricing model reflects assumptions that market participants would make.
3. If items are not accessible, the entity uses an alternative pricing model. However, the measure would be at a lower level, depending upon the inputs.	3. If no identical or similar items exist, the entity may use pricing models having independent inputs, such as yield curves, interest rates, and volatilities.	3. The entity develops its own input data, such as cash flow forecasts, but only as long as there is no other independent information available at a reasonable cost.
4. If the quoted price does not reflect fair value, the entity is required to make adjustments. However, the measure would be at a lower level, depending upon the inputs.	4. The entity may use inputs from correlations with the market.	4. If the entity uses an input from Level 1 or 2, the item still falls to Level 3 if the model includes significant data inputs that are not corroborated or observable.

Figure 19: The three levels of the Fair Value Hierarchy

Source: Fuglister, Jayne and Bloom, Robert. 2008. pp2

Miller and Bahnson (2007) reinforced the statement of Mr. Robert Hetz that "fair value estimates have been introduced in GAAP through a number of standards in the past decades" by further stating that after introduction of SFAS 157 and 159, the fair value accounting is no longer the theoretical abstraction of some kind of some philosophy but has now become a practically executable accounting practice possessing clear cut guidelines and accountabilities.

It should be in the interest of CPAs to quickly practice this new system within their professional frameworks and get ready to publish SFAS 157 compliant accounting statements. The fair value hierarchy as defined by SFAS 157 clearly sets the requirement of "precision of valuation" by the reporting entities.

Ratcliffe, Thomas A. (2007) argues that companies and auditors should target to achieve substantial improvement in financial reporting by making use of compliance to SFAS 157 and 159 rather than just producing compliant accounting statements. This statement has definitely raised the bar of disclosure but also has provided an opportunity for improvement in the legacy accounting system that has too many flaws as such with respect to market valuation of organizational assets.

S&P rating services argued that accounting for assets and liabilities based on market inputs can hide the detailed economics of certain businesses when markets are facing volatility and uncertainty. In such cases, as per S&P, the reporting entities should be disclosing much more information for the benefits of the users like valuation methodologies, underlying risks, volatility witnessed, assumptions made, market adjustments and sensitivities and such other factors in order to provide the bigger picture amidst the uncertain and volatile situations.

[Anonymous Author report in CPA journal in Vol.78. No.7. 2008]

6.6 - Which Valuation methods are most suitable for Ford Motor Company and Tata Motors?

After carrying out a comprehensive assessments of the popular company valuation techniques and analyzing their advantages and disadvantages, the following conclusions can be drawn:

First of all, from the perspective of accounting departments of both the companies, it may be easy to value the assets given that they have the purchase details and depreciations on their accounting statements historically.

However, whatever they will arrive shall be the book value of the assets. They must have applied their analysis taking into account the market valuation data and must have arrived at a market value of assets. However, from a buyer's perspective it is a nightmare to arrive at true market value of the assets of these two companies.

The buyers will end up paying consulting fees for months to asset analysts but still may not achieve the fair valuation. Hence, from an outsider's perspective, Income Method and Cash Flow Method are more suitable for these companies.

Applicability of income method and cash flow method on both companies are evaluated below:

6.6.1 - Ford Motor Company:

As we have seen that Ford Motor Company has been largely debt financed in the past. Hence, the cash flow technique shall have minimal errors because debt forecasts are relatively easier due to clarity in their market values.

However, in valuation of Net Present value, the applicable discount rates shall be higher because the company has been doing pretty bad in the past few years and also have not paid dividends in 2007 and 2008. For this reason, the income valuation of Ford Motor company shall fair very badly. It would not be easy to predict the dividend payouts of the company in coming years. The forecasts on EPS have already been predicted earlier in this dissertation which states that Ford Motor Company may break even in 2011 (partially in 2010).

It is very difficult to suggest that Ford Motor Company is having an optimal capital budget structure at present. Given that they are largely debt financed, the old empirical theories tend to point that they have a better capital structure at present. But this structure appears to be more due to circumstances than choice because the trading volumes on the stock markets have reduced considerably for them.

Ford Motor definitely has a strong brand equity given its heritage and legacy. In addition, although not reported publicly, one can imagine that the know how behind the interchangeable parts model of flexible assembly lines, that has done wonders in the good days of Ford Motor Company is a priceless asset that they have. It is not easy to determine what shall be the overall valuation of the intellectual properties of Ford Motor Company but it is for sure that the prices can only be afforded by some of the richest entities of the world.

Lastly, is market valuation the right technique for Ford Motor? The answer is yes but comparison with a company having similar size, risk premium, business potential, market spread etc. will be a difficult task.

For example, the current comparison between Ford Motor Company and Tata Motors is not feasible from market valuation perspectives. Although they may be sharing similar systematic risks of the automobile market, their individual risk premiums shall differ substantially.

Moreover, size of Tata Motors is only a fraction of the size of Ford Motor Company. They possess different competencies, different markets, different market segments, different attitudes, different prices, different technologies, and so on. One good comparison between the two is that they both have roots of British style of motor manufacturing and also they have their roots that started in 19th Century. Hence, both the companies carry forward an old heritage although in different countries and markets.

Overall, the best companies to be compared with Ford Motor Company might be General Motors, Mercedes Benz, Toyota Motors, Mitsubishi.

<u>6.6.2 - Tata Motors</u>:

Tata Motors have completely different capital structure compared with Ford Motor Company. They have been largely equity financed in the past four years. Hence, the cash flow analysis for Tata Motors will require more of market valuation of equity than market value of debt thus making the valuation relatively more difficult.

Moreover, Tata Motors is not very old on the NYSE and hence the market largely lacks historical data about them to evaluate correct market beta. Combining data from Bombay Stock Exchange and NYSE is not feasible due to different mode of operations and numerous technical

difficulties. This has been seen in the market valuation of Tata Motors earlier in this dissertation. Hence, arriving at the right discount level for Tata Motors is difficult given these scenarios.

It may be more feasible to carry out Income based valuation of Tata Motors than cash flow based valuation at least in 2009. If cash flow analysis is preferred, they should be discounted at higher rates currently to play safe in their net present value calculations.

Income based valuation of Tata Motors have many positive signs – they have been paying dividends, they have remained profitable in past four years, they have developed a sizeable market capital on NYSE and hence overall, Tata Motors appears to be a good investment opportunity for investors.

However, the investors should be cautious about there current systematic risks – their purchase of Jaguar and Land Rover at a cost that is more than 20% of their net revenues and the recent Singur crisis that reeled them into a $400 million losses and more importantly opportunity losses because they shall be more than an year late in the delivery of Tata Nano cars.

In terms of market valuation, again it doesn't seem to be suitable at present because there aren't many competitive companies listed on NYSE. For time being, their comparison with smaller local players in US may sound OK but fair valuation will remain a challenge.

6.7 - Revisiting Balanced Score Carding of Ford Motor Company and Tata Motors.

It was emphasized in the Balanced Score Card section under the strategic analysis section that the balanced score carding of Ford Motor Company and Tata Motors shall be revisited after completion of their valuation. The Balanced Score card of Ford Motor company is presented in the table below.

The points mentioned under Vision and Strategy, Financial, Customer, Internal Business Processes and Learning and Growth are outcomes of the strategic analysis and valuation in this dissertation and are totally our own viewpoint.

	Financial: To improve financial performance in coming years To overcome from the cash loss in 2008 and maintain a cash flow that shall result in positive Net Present Value. To Break Even by 2011 To re-pay principal components of debts as fast as possible To start paying dividends to investors To downsize to such an extent that the company achieves "right size" as per the future outlook of the global automobile markets To increase equity component in the Capital Structure To achieve shareholder satisfaction as fast as possible	
Customer: To continue to provide high quality products to customers with localized customizations. To develop new customer friendly technologies like low emission cars, hybrid cars, etc. To develop new markets in developing countries more aggressively.	**Vision and Strategy:** To become the number one Motor Company of the world. To become profitable by 2011. To drive new innovations to delight the customers. To manage risks more effectively. To find out gaps in internal processes and bridge them gradually.	**Internal Business Process:** To improve the Supply Chain by using more than one supplier. To empower the local country heads to operate as independent profit center heads. To enhance country level technical competencies by decentralizing the R&D function.
	Learning and Growth: To manage the systematic risks of the company more effectively by learning from the past. To develop new product innovations and using them to diversify into new markets. To learn from the success factors of competitors like Toyota and adopt their practices. To develop and open and receptive culture of innovativeness.	

Table 11: Balanced Score Carding of Ford Motor Company

The following table presents the balanced score carding of Tata Motors. The points mentioned herewith are again an outcome of the strategic analysis and valuation and are based solely on the viewpoints of the authors:

	Financial: To improve financial performance in coming years To improve cash flow in coming years to ensure positive present value of cash flow even at high discount rates. To re-pay principal components of debts as fast as possible To consistently pay dividends to investors To improve market capitalization on NYSE and establish as a powerful global player.	
Customer: To continue to provide high quality products to customers with localized customizations. To develop Tata Nano to meet global standards etc. To develop new small car markets in developed as well as developing countries more aggressively.	**Vision and Strategy:** To become the number one small car supplier of the world with the help of innovations and timely delivery of Tata Nano. To meet the European emission and safety norms in Tata Nano. To continue to delight the domestic customers of India. To drive new innovations to delight the global customers. To manage risks more effectively. To find out gaps in internal processes and bridge them gradually. To improve quality and knowledge management practices. To continue to nurture Jaguar and Land Rover to achieve better big car markets in UK and Europe.	**Internal Business Process:** To improve the Supply Chain by using global suppliers as well. To get the best out of Jaguar and Land Rover. To enhance the customer delivery and support processes specifically to meet the commitments of Tata Nano.
	Learning and Growth: To manage the systematic risks of the company more effectively by learning from the past. To develop multiple variants of Tata Nano as per global needs by applying suitable innovations. To learn from the mistakes of Singur and develop internal practices to avoid such mistakes in future. To establish as many plants possible in quickest possible time to meet the delivery commitments of Tata Nano. To develop and open and receptive culture of innovativeness.	

Table 12: Balanced Score Carding of Tata Motors

7 | Conclusions.

After a long spell of analysis, it is now time to conclude the dissertation. As indicated in the beginning, the objective of this dissertation was to evaluate various strategic analysis techniques and company valuation techniques and then apply them on the case studies of Ford Motor Company and Tata Motors.

The analysis started with history of both the companies and thereafter the strategic analytics based on SWOT analysis, Ansoff matrix, Michael Porter's Five Forces Model, Michael Porter's Diamond Model, and Balanced Scorecard Strategic framework have been carried out. The strategic framework helped in viewing in-depth strategic & management framework of both the companies. This analysis helped in arriving at an analytics that presented the broad perspective of their internal and external factors in the company.

Thereafter, the various valuation techniques have been presented in this dissertation. First the valuation metrics have been presented without going in depth into the valuation techniques and then an analysis of various theoretical analysis based on empirical generalizations have been carried out.

The theoretical analytics have been carried out to arrive at arguments on the capital structure of both the companies, their financial ratio valuations, their net present value analytics and some conclusions on the cash related challenges of both the companies in the next few years.

After these analytics, the various valuation techniques have been introduced and a general argument presented on which technique is suitable for both the companies given their current scenarios, their standing in the market and the market dynamics.

The theoretical literature help substantially in establishing a sound theoretical foundation of a dissertation which can be later used to fine tune the though process in the data collection, analysis of case studies, presentation of results, critical discussions and conclusions. Moreover, the empirical generalizations apply very well in theoretical foundation of the entire analysis.

They have been elementary in reaching logical conclusions against the strategic analysis as well as valuations. In this research, the selection of the two companies was done based on some headlines that had rocked the UK and the entire world largely – the sale of Jaguar & Land Rover by Ford Motor Company to Tata Motors. This news actually gave us a clue that there shall be multiple links between these two organizations which shall be evident once the strategic analytics are carried out effectively.

The dissertation started with thought process with no clarity in the beginning but finally leading to an end to end document which is theoretically an optimum document that a student can arrive at academically based on market published data about the two companies. This reveals that a systematic structured process can unleash a number of secrets that can build the structure of a complex dissertation of this kind.

Strategic Analysis and Company Valuation are not easy tasks for a student given that they are very complex even for seasoned practitioners. The task became even more complex as the two companies chosen are altogether from different geographies with completely different business models and target markets.

Ford Motor Company is known for their global innovations capability with competencies of building local products compatible with environments of practically every country of this world. On the contrary, Tata Motors have largely developed products as per Indian conditions and have not done very well in their attempt to enter European markets although they have been doing well in small sized trucks (Tata Sierra) in the UK markets.

Comparisons of strategic analysis and valuations of these two companies faired to be very difficult given that multiple data sources needed to be consolidated to reach standardized information framework. It finally has been successful only because of support from databases, money sites, third party independent analytics and past scholarly articles, researches & dissertations from the university library.

To conclude the dissertation, following are the outcomes about Ford Motor Company and Tata Motors:

Ford Motor Company:

Ford Motor Company has been the King of innovations in the automobile industry. Ford R&D and their all time proven innovation of interchangeable parts in moving assembly lines resulted in phenomenal global expansion for them. They are an old heritage that once ruled the global automobile markets of the world. In fact some of the most prestigious motor brands of the world have been owned by Ford Motor Company.

They have witnessed some of the best times in terms of revenues and profitability and enjoy a large customer base even today. However, some of the mistakes like the Ford 2000 initiative caused irreparable damages for which Ford Motor Company is still paying the price and in this context they completely went the wrong way and hence could not withstand Japanese competitors that were quick to grab Ford's own home market in USA.

As presented earlier in terms of mapping with Michael Porter's five forces theory, Ford Motor Company was badly hit by new entrants in the market. They indulged deep into debt financing due to financial crisis and hence have today become largely debt financed company. They had to sell Jaguar and Land Rover companies to Tata Motors to build some cash which, however are peanuts because bad times are continuing. Moreover, they haven't paid dividends for past two years and hence are losing shareholder confidence.

They have not been able to manage their cash flows and have lost substantial cash in 2008 and are rapidly closing extra plant capacities and laying off people to downsize as per their current market standing. We carried out net present value analysis and concluded that to keep NPV positive for next five years for Ford Motor Company is challenging task given that they would be discounted at higher rates. However, the current financial outlook by expert analysts project that they shall break even in 2011.

Tata Motors:

Tata Motors is relatively new to vehicle manufacturing business and also has been recently listed on NYSE. They are not yet known for global innovations but possess a strong indigenous market in India that they are trying to use as a foundation to establish themselves into the global markets.

They possess a strong, efficient & low cost supply chain network localized in India but practically no supply chain at global levels. Just like For Motor Company, Tata Motors also possess brand heritage in the form of Tata Group which is one of the oldest & most successful industrial house in India. Very recently, Tata Motors made headlines by acquiring Jaguar and Land Rover from Ford Motor Company and launching the world's cheapest car called Tata Nano.

However, in their local Indian market they faced a major setback due to political disturbances when their Tata Nano manufacturing plant at Singur (a place in West Bengal which is an eastern state of India) was shut down. This setback has raised questions on the delivery commitments of Tata Motors against the orders that they have booked indigenously and globally.

Currently they are at least one year late in meeting commitment of delivery of Tata Nano and hence have already opened room for new entrants in this business which may prove to be disastrous for them. Their financial outlook is appearing to be strong with profits made every year and dividend payments made regularly.

However, their cash flow forecast places them at slightly riskier position even at nominal discount rates although they are bound to be discounted at higher rates for time being due to lesser information available on their market beta analysis. Overall, they are largely equity financed but 2009 needs to be watched closely to analyze changes in their Capital Structure.

One of their major challenges is to meet European safety & emission standards on Tata Nano because they have already failed once in the European market and are not yet known for developing global cars and hence have not yet built a sound global brand equity. Hence, currently they appear to be an overambitious company whereby an effective market campaigning of Tata Nano has brought them at a global platter but it appears that end of the day they may just end up capturing their local Indian market.

Reference list.

Aaker, David A & Jacobson, Robert. The Role of Risk in Explaining Differences in Profitability. The Academy of Management Journal. 1987. Vol. 30, No. 2. pp278-279.

Allen, Terry and Rigby, Jim. Every Software Company Owner wants to know – How much is my company worth?. Southern California Software Council's Scribe Newsletter. 2003. pp1-4

Ankli, Robert. E. Michael Porter's Competitive Advantages and Business History. Business and Economic History. 2nd Series, Volume 21. 1992. pp230.

Anonymous Author. (2008). Fair Value Accounting works well but is not perfect. The CPA Journal. Vol.78. No.7. ABI/INFORM Global. pp9.

Ansoff, H. Igor. A Model for Diversification. Management Science. Vol. 4. No. 4. INFORMS. 1958. pp394-395.

Ansoff, H. Igor. Strategic Issue Management. Strategic Management Journal. Vol. 1. No. 2. John Wiley and Sons. 1980. pp137-139.

Barry, Sion. 'Extraordinary slowdown' in sales brings pounds 10.2bn loss; But Ford 'is set to break even in 2011'. Western Mail. Cardiff UK. 2009. pp31-32.

Barth, Mary. E. and Cram, Donald P. et al. Accruals and the Prediction of Future Cash Flows. The Accounting Review. 2001. Vol. 76, No. 1. pp54-57.

Bedell, Denise. Ford Counters Global Risk. Corporate Finance, London. Iss.197. 2001. pp1-2

Beranek, William. The Cost of Capital, Capital Budgeting, and the Maximization of Shareholder Wealth. The Journal of Financial and Quantitative Analysis. 1975. Vol. 10, No. 1. pp2-3, 17.

Beranek, William. The AB Procedure and Capital Budgeting. The Journal of Financial and Quantitative Analysis. 1980. Vol. 15, No. 2. pp404-405.

Bodenhorn, Diran. A Cash-Flow concept of profit. The Journal of Finance. 1964. Vol. 19, No. 1. pp18-28.

Brown, Robin. Half a million orders predicted as Tata Nano finally launches. MotorTorque.com UK. 2009.

Bunkley, Nick. Record Loss at Ford but no request for aid. International Herald Tribune. Paris. 2009. pp14.

Business: A Hard Lesson in Globalization – Lord Trotman and Ford. The Economist, London. Vol. 375, Iss. 8424. 2005. pp1-4

Chappell, Lindsay. Engineering Issues Vary by Global Market. Automotive News. Detroit. Vol. 79. Iss. 6141. 2005. pp1-2

Chatterjee, Sayan & Lubatkin, Michael et al. Vertical Strategies and Market Structure: A Systematic Risk Analysis. Organization Science. 1992. Vol. 3, No. 1. pp139.

Campbell, John Y. and Mei, Jianping. Where do Betas Come From? Asset Price Dynamics and the Sources of Systematic Risk. The Review of Financial Studies. 1993 Vol. 6, No. 3. pp571.

Connelly, Mary. Ford's Formula to cut incentives: Make cars that people want to buy. Automotive news. Detroit. Vol.75. Iss.5912. 2001.

Dagiliene, Lina and Kovaliov, Ruslan et al. The Applications of Financial Valuation Methods in Investment Decisions. Vadyba Management Journal. Vol. 2 Issue 11. 2006. pp1-8

Donelly, Tom and Morris, David. Restructuring Ford Europe. European Business Review. Vol. 15, Iss.2. ABI/INFORM Global. 2003.

Dulman, Scott P. The Development of Discounted Cash Flow Techniques in U.S. Industry. The Business History Review, Vol. 63, No. 3. 1989. pp555-557.

Ferrier, Walter J. and Smith, Ken G. et al. The role of competitive action in market Share Erosion and Industry Dethronement: A Study of Industry Leaders and Challengers. The Academy of Management Journal. Vol. 42. No. 4. Academy of Management. pp384-386.

Fogarty, Justin. Tata Motor's Nano – Its Real. Supply Chain Excellence. 2009. Retrieved on 4 April 2009. Available at http://www.supplyexcellence.com/blog/2009/03/24/tata-motors-nano-its-realso-how-did-they-do-it/

Grooming your business for sale. Vantis Corporate Finance Limited. 2007. pp1-3.

History of Ford. Luxury On-Line. Duttondirect.com International. Retrieved on 23 March 2009. Available at http://www.duttondirect.com/history/view/make:ford.

History of Ford in Britain – 1900 to World War II. Ford Motor Company, UK. Retrieved on 23 March 2009. Available at http://www.ford.co.uk.

Hull, Robert M. and Avey, Nicholas. The Big Three of the Auto Industry – Analyzing and Predicting Performance. Mountain Plains Journal of Business and Economics. Pedagogy. Vol. 8. 2007. pp1-8

Kaplan, Robert S. and Norton, David. P. Linking the Balanced Scorecard to Strategy. California Management Review. Vol. 39. No.1. reprinted by permission of Harvard Business School Press. 1996. pp54

Kaplan, Steven N. and Ruback, Richard S. The Valuation of Cash Flow Forecasts: An Empirical Analysis. The Journal of Finance. 1995. Vol. 50, No. 4. pp1063, 1067.

Kranacher, Mary-Jo and Morris, Tom. (2007). An Exclusive Interview with FASB Chairman Robert H Herz. The CPA Journal. Vol. 77. No. 11. ABI/INFORM Global. pp20-26.

Lamb, David F. Private Company Valuation and the Prospect Researcher. Blackbaud Analytics. Blackbaud Inc. 2007. pp1-2.

Ma, Sindi and MacNamara, Andrew. (2009). When Fair Value is Not Fair. The CPA Journal. Vol. 79. No.1. ABI/INFORM Global. pp10-11.

New car sales plunged 38% last month. Daily Mail (2008). Thisismoney.co.uk. part of the Part of the Daily Mail, The Mail on Sunday, Evening Standard & Metro Media Group. UK.

Owen, Geoffrey Sir. Don't Shed too many Tears when the last Ford rolls out of Dagenham. The Independent. 2002.

Palley, Thomas I. The Economics of Globalization: A Labour View. 24th Annual AAAS Colloquium on Science and Technology Policy. Washington D.C. 1999.

Pries, Ludger. The dialectics of automobile assemblers and suppliers restructuring and globalization of the German "Big Three". Universitat Des Saarlangdes. Allemagne. 2001.

Placing a value on Business. The Center for Financial, legal and Tax Planning, Inc. Retrieved on 13 February 2009. Available at http://www.allbusiness.com/print/6254992-1-22eeq.html. 2004.

Porter, Michael E. The Competitive Advantages of Nations. Harvard Business Review. 1990.

Porter, Michael E. The Five Competitive Forces that Shape Strategy. Harvard Business Review. 1979.

Rayport, Jeffry F. and Sviokla, John J. Exploiting the virtual value chain. The Mckinsey Quarterly. No. 1. 1996. pp26-28.

Re-Shaping Ford Europe – How a Flabby giant got fit and lean. Strategic Direction. Vol.19. Iss. 8. ABI/INFORM Global. 2003

Shelton, Fred. Construction Company Valuation Primer. Journal of Construction Accounting and Taxation. 2001. pp1-7.

Sun, Daning & Queyranne, Maurice. Production and Inventory Model Using Net Present Value. Operations Research, 2002. Vol. 50, No. 3. pp528. INFORMS.

Tata Motors extends outsourcing partnership with Ariba. Business Publications. Business Wire. 2006. Retrieved on 4 April 2009. Available at http://findarticles.com/p/articles/mi_m0EIN/is_2005_June_6/ai_n13797040/.

Tata Motors Transforms IT Organization with BMC Software and Business Service Management. Ogilvy Public Relations Worldwide. PRLog.org. 2008.

Thomson, Donald J. Sources of Systematic Risk in Common Stocks. The Journal of Business, Vol. 49, No. 2. pp178-180.

US sales decline by 36% in December to round off tough 2008. Platinum Today (2009). Johnson Matthey. US.

Vasilash, Gary S. Ford: The way beyond 2000. Automotive Design and Production. Vol.119. Iss.3. ABI/INFORM Global. 2007.

Veloso, Francisco and Kumar, Rajiv. The Automotive Supply Chain: Global Trends and Asian Perspectives. Economics and Research Department. Working paper series No. 3. Asian Development Bank. 2002. pp8-11.

Wright, Natisha and Frailing, Kyle et al. Going deep inside Ford Motor Company. Western Michigan University, HCOB. 2005. pp1-14