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The "Big Three" Of The Auto Industry: Analyzing And Predicting Performance

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ABSTRACT

This paper analyzes the financial performance of three leading automobile manufacturers (referred to as the "Big Three"). The analysis incorporates the use of (1) traditional and newer financial ratio methods and (2) prominent finance websites. The end result of the analysis is to assess the future profitability of the "Big Three." From a pedagogical standpoint, the paper offers instructors a skill that will enable them to impart knowledge of an analytical technique for evaluating firm performance. This technique can be used by business students and practitioners alike. As a byproduct, this paper includes a class exercise that goes beyond just the "X's and O's" of financial ratio analysis by requiring students to integrate their financial ratio findings with online sources offering economic and industrial analysis and analysts' predictions.

I. INTRODUCTION

This paper analyzes firm performance by using information found in (1) traditional and newer methods of financial ratio analysis and (2) major finance websites. Firms analyzed are the "Big Three" of the auto industry. These three firms are Ford Motor Company (Ford), General Motors Corporation (GM), and DaimlerChrysler Corporation (DC).

A major focus of the analysis of firm performance involves financial ratio analysis. This focus is justified because investors make decisions based on what financial ratios indicate. All parties concerned with investment decisions need to know how financial statement data can be used to evaluate firm performance. A key tool used in this paper's financial ratio analysis is the DuPont Model. By using this model, analysts can focus on how three areas of management (profit margin, asset turnover and leverage) impact a firm's return on equity separately and interactively. A healthy rate of return is what an investor desires. Even from a book standpoint, if

returns are not healthy for long periods of time, then an investor's asset is underperforming.

Within the paper is a pedagogical application designed to provide business students with a professional tool useful in evaluating firm performance. The significance of the application relates to this statement from the National Board for Professional Teaching Standards (1998):

> "Content pedagogy refers to the pedagogical (teaching) skills teachers use to impart the specialized knowledge/content of their subject area(s). Effective teachers display a wide range of skills and abilities that lead to creating a learning environment where all students feel comfortable and are sure that they can succeed both academically and personally. This complex combination of skills and abilities is integrated in the professional teaching standards that also include essential knowledge, dispositions, and commitments that allow educators to practice at a high level."

This paper's application provides a skill that teachers can use to impart knowledge in the context of analyzing a firm's performance through economic, industrial and financial ratio analyses and the use of finance websites. A consequence is that educators can practice their profession at a higher level consistent with excellence in university teaching (Johnson, 1991; McKeachie, 1994).

Teaching outcomes from the application include: (1) students will delve deeper into financial ratio analysis by examining and comparing accounting variables drawn from financial statements; (2) students will apply the DuPont Model and other valuation metrics in conjunction with economic and industrial indicators to assess future investment possibilities; and, (3) students will become familiar with prominent finance websites including those that feature analysts' predictions.

The remainder of this paper is organized as follows. Section II provides an analysis of the economic and industrial factors influencing investment in the auto industry. Section III presents financial ratio methodologies used to analyze financial data. In particular, this section will illustrate how the return on equity is impacted through changes in variables encompassing margin management, asset management and debt management. Section IV offers a class exercise with questions and solutions. Section V gives summary statements.

II. ANALYSIS OF THE ECONOMY AND INDUSTRY

Leading economic indicators help investors forecast the economic outlook. Two leading indicators to assess the growth and vitality of the economy are the Consumer Confidence Index (CCI) and Gross Domestic Product (GDP). The auto industry is one of the last industries to follow the growth of the economy as consumers wait until their incomes have increased from the growth. Two leading indicators used to analyze the automotive industry are the Durable Orders Index (DOI) and Automotive Sales Index (ASI). Results (as of early April 2006) for the four above leading indicators are given below.

The CCI tends to go up when earnings rise and borrowing rates fall. The CCI peaked during August 2005 and then fell about 20 percent before rebounding and reaching a near four-year high during March 2006 (*http://www.conference-board.org/economics/consumerConfidence.cfm*). Consumer confidence in the economy's prospects is tempered by expectations that consumers may spend less if gas prices and interest rates continue to rise. Conclusion from CCI: the outlook appears above average given the near four-year high in CCI.

The GDP is a barometer of economic growth. It has averaged 3.5%–4.0% the last two years prior to falling to 1.7% for the last quarter of 2005. The decline in real GDP reflected a fall in personal consumption spending, an increase in imports, a downturn in federal government expenditures, and a drop in equipment and software as well as in residential fixed investment (*http://www.bea.gov/bea/newsrel/gdpnewsrelease.htm*). Conclusion from GDP: outlook appears below average given the recent dip in GDP.

The DOI reflects the new orders of durable goods placed with domestic manufacturers for immediate and future delivery of factory hard goods. The automotive industry contributes over 30% to the DOI if defense spending is excluded. Orders for durable goods have strengthened as of February 2006 (*http://money.cnn.com/2006/03/24/news/economy/durables/index.htm*). The outlook for 2006 is good given strong expectations about durable goods orders and corporate profits. Conclusion from DOI: outlook appears above average given recent increase in DOI.

The ASI is the primary indicator for the auto industry and has shown a bouncy trend the last two years (*http://www.dailyfx.com/calendar/briefing/auto.html*). High gasoline prices make fuel efficient imports and domestic autos better buys. Reduced discounting is helping 2006 sales. Improved employment and strong income growth

argue for a positive pace for the future auto sales especially for firms offering fuel efficient cars. Conclusion from ASI: outlook appears above average.

Except for the recent dip in GDP (which may not be sustained), the conclusion from looking at some leading economic and industrial indicators is that there is an above average outlook for the auto industry. Thus, investors can be cautiously optimistic about future investment possibilities in the auto industry. To decide which particular automotive firms to invest in, one needs to make firm specific analyses. For example, consider the "Big Three" that compete on a global scale with firms that often have lower labor costs, produce more fuel-efficient vehicles, and obtain lower borrowing costs. While making inroads in reducing labor costs (through recent labor cutbacks) and creating more fuel-efficient products, the borrowing costs for "Big Three" firms are expected to remain high, especially for Ford and GM given the speculative status of their bonds. Thus, an optimistic outlook does not necessarily translate into favorable earnings for firms that experience greater borrowing costs.

III. FINANCIAL RATIO ANALYSIS

Financial ratio analysis consists of various methodologies including (1) long-standing traditional methods as epitomized by the DuPont Model and (2) relatively more recent valuation methods as represented by economic value added (EVA), return on invested capital (ROI) and free cash flow (FCF). These methodologies are discussed below.

1. BACKGROUND ON FINANCIAL RATIO METHODOLOGIES

Traditional financial ratio analysis can be traced to the origins of the DuPont system of financial analysis (referred to as the DuPont Model). The DuPont Model was developed in 1919 by F. Donaldson Brown. Brown was an engineer who entered the treasury department of E.I. du Pont de Nemours and Co. in 1914. After DuPont acquired about one quarter of GM, Brown was appointed to cleanup GM's unruly finances. Blumenthal (1998) writes that much of the credit for GM's ascension afterward belongs to Brown's systems of planning and control. Such success launched the DuPont Model to widespread use by managers of major U.S. corporations. Even today it remains a dominant form of financial analysis used by consultants and financial executives.

The DuPont Model remains today a highly preferred system of financial analysis having withstood the challenge of newer valuation methods introduced in the 1990s. Blumenthal (1998) presents both sides of the debate involving traditional financial ratio analysis (namely, the DuPont Model) on one side and newer methods

(namely, EVA) on the other side. Blumenthal cites academic and practitioner sources who contend that the DuPont Model still enjoys much success in turning around firms while heightening the focus on accountabilities for different parts of the business. Although newer methods like EVA have been actively promoted to analyze shareholders' wealth, Firer (1999) indicates that traditional approaches typified by the DuPont Model will continue to dominate financial analysis for some time.

The important role of financial ratio analysis is routinely discussed in finance and accounting texts. Financial ratios are derived from financial statements, in particular, the balance sheet and income statement. These ratios are frequently examined for their power to predict security valuation (Penman, 2004). However, despite their heavy use, one should be aware of their limitations. For example, data for financial ratios are a product of the accounting processes and reflect historical costs disregarding past inflation and future prospects. Also, financial ratios must be compared to some standard or norm to be fully meaningful and it can be difficulty to find norms for all firms. For leading firms, using norms represented by industry averages may not be applicable. In addition, "window dressing" can occur so as to make ratios look good in the short run, while international operations can present problems as a different set of accounting regulations may apply.

Financial ratios must be interpreted properly and cautiously not only because of the above limitations, but because they are also subject to unethical manipulation leading to outright inaccuracies. While these problems are hard to cover up in the long run, they nonetheless can deceive even the most skilled analyst in the short run.

2. A DESCRIPTION OF THE DUPONT MODEL

The focus of the DuPont Model is the return on equity (ROE) where ROE is net profit divided by stockholders' equity. Net income is commonly used to proxy for net profit. The focus on ROE is justified because the return on equity is arguably the preeminent measure of the wealth supplied by a firm to its shareholders. As a system of financial ratio analysis, the DuPont Model ties together income statement and balance sheet items showing how ROE is affected by margin management (Net Profit Margin), asset management (Asset Turnover), and debt management (Financial Leverage or Equity Multiplier). Margin management uses financial ratios derived from the income statement, while asset management utilizes ratios from the balance sheet. Debt management is an area determined by managerial choices about the forms of financing. As can be seen in Exhibit 1, the DuPont Model brings together these three areas of management. (See Ockree and Hull (2006) for other exhibits for the expanded DuPont Model.)

Exhibits 2−4 apply the DuPont system of financial analysis to each of the "Big Three" firms. The key ratios found in the DuPont exhibits are described below.

Margin Management (Data from Income Statement):
Net Profit Margin (NPM) = Net Profit / Sales = NP / S **(1)**

Asset Management (Data from Balance Sheet):
Asset Turnover (AT) = Sales / Total Assets = S / TA **(2)**

Debt Management (Data from Balance Sheet):
Financial Leverage (FL) = Total Assets / Common Equity = TA / CE **(3)**

Multiplying out the above three equations and canceling out from the denominators and numerators for "S" and "TA" gives:

ROE = NPM × AT × FL = (NP / ~~S~~) × (~~S~~ / ~~TA~~) × (~~TA~~ / CE) ➜ ROE = (NP / CE). **(4)**

One can observe from equations **(1)** through **(4)** that the DuPont Model allows one to focus on the separate (but interlinked) ideas of profitability (NPM), asset utilization (AT), and leverage (FL). One can also see how ROE is a function of ROA and FL since ROA = NPM × AT. Because FL > 1 always holds, a positive ROA value is magnified when computing ROE. Similarly, a negative ROA value leads to an ROE value that is more negative than ROA. A negative ROA really becomes problematic when a firm has a large FL value.

There can be flexibility in defining the variables used in the DuPont Model. For example, besides net income, other earning variables could be used in the numerator when defining NPM. Similarly, other asset variables besides total assets could be used when defining AT. Firer (1999) describes various ratios that can be used when computing ROE using the DuPont Model. Tezel and McManus (2003) point out definitional problems when properly accounting for ROE.

3. VALUATION METRICS

Valuation metrics, like EVA, won support among a contingent of supporters in corporate circles during the 1990s. The support stems from the capacity to correlate favorable firm performance with decisions that produce returns exceeding the cost of capital. Doing this implies value creation. It also shifts costs such as research and development from the expense category to capital investment. Critics argue that metrics aimed at creating value involve too much subjective guess work requiring

numerous calculations and adjustments that can more easily lead to distortion of numbers reported to the public. This type of reporting has been a major ethical problem in recent years leading to investor mistrust with company financial reports.

Exhibit 5 supplies valuation metrics for each of the "Big Three" firms. These metrics add to the DuPont results found in Exhibits 2–4. The relevant variables, used in the metrics deployed in Exhibit 5, are defined below (with precise definitions sometimes differing among sources).

NOWC (Net Operating Working Capital) is Cash & Equivalents + Accounts Receivables + Inventories – Accounts Payables – Accrued Expenses.

OLTA (Operating Long Term Assets) is Net Property, Plant & Equipment.

TOC (Total Operating Capital or Invested Capital) is NOWC + OLTA.

NOPAT (Net Operating Profit after Tax) is Operating Income × (1−T) where Operating Income is EBIT and T is the corporate tax rate.

ROIC (Return on Invested Capital) is NOPAT divided by the prior year's TOC.

EVA (Economic Value Added) is NOPAT minus the quantity consisting of the weighted average cost of capital times the prior year's TOC.

FCF (Free Cash Flow) is NOPAT minus the quantity consisting of this year's TOC minus the prior year's TOC.

4. INSPECTING ANALYSTS' ASSESSMENT

Internet sites that provide details to inspect analysts' assessment are abundant enough and can be used in conjunction with financial ratio analysis to make predictions about investment possibilities. More details on this are given in the class exercise in the next section.

IV. CLASS EXERCISE

In this section, the information presented in the prior two sections will be incorporated into a class exercise that will also include analysts' assessment. This is accomplished in the form of five questions. Possible solutions are given after each question. In regards to Questions 2−4, students are provided beforehand with the DuPont Model flow chart given in Exhibit 1. If requested, the authors can (i) furnish instructors with Excel spreadsheets containing data that computes results in Exhibits 2−5, and (ii) supply details on other financial ratios not given in the exhibits. The exercise can be done individually by assigning one of the three firms for each student. Instructors can also expand the exercise by assigning students to analyze other automobile firms such as Toyota or Honda. The exercise can also be done in teams of

students. (See Hull, Roach and Weigand (2006) for some particulars when conducting a team exercise.)

1. SUGGESTED STUDENT QUESTIONS AND SOLUTIONS FOR PEDAGOGICAL APPLICATION

QUESTION 1. Type in key search words (such as Leading Indicators, Consumer Confidence, Gross Domestic Products, Durable Goods Orders, Auto Sales Index, and so forth) to explore the internet for information on the economy and the auto industry. One website that can be found is *http://www.briefing.com*. Click on the free "Investor Index" link and then the "Economic Calendar" link to find dates and forecasts of upcoming economic releases related to consumer confidence, gross domestic products, durable goods orders, and auto sales. After becoming accustomed with Internet resource materials, perform an economic and industrial analysis to help gain insight on the investment opportunities in the automobile industry. In this analysis, include predictions for the auto industry in general. Try to explore if your predictions apply to "Big Three" firms.

SOLUTION 1. Student answers will change over time as economic and industry conditions change. As of April 2006, the outlook appears to be good but the outlook can also be a function of the sources used. A good outlook for an industry does not necessarily hold for those companies with firm-specific problems. For additional details as of April 2006, see Section II on the "Analysis of the Economy and Industry."

QUESTION 2. Using the DuPont Model flow chart provided, perform a DuPont ratio analysis of the Ford Motor Company using financial statement data from one of the many online sources that exist. For example, go to *http://moneycentral.msn.com/home.asp*, *http://finance.yahoo.com*, or *http://www.hoovers.com/free* and type in the ticker symbol (F, GM, or DCX). If the Money Central website is chosen, begin by typing in "F" by "Symbols" in the top right hand and then hit the enter key; scroll down and click on "Financial Results" in far left column. The heading "Statements" will pop up three lines under "Financial Results"; after clicking on "Statements", then click by "Financial Statements" in the middle of the page to access either the Income Statement or Balance Sheet data for Ford. This data is needed to perform computations for the variables given in the DuPont Model flow chart (and later for valuation metrics). Money Central will give financial data for five years and that should be long enough to find a trend representative of Ford's ROE. Using the numbers in the DuPont flow chart explain any changes in ROE over time in terms of margin management, asset management, and debt management.

SOLUTION 2. See Exhibit 2 for numbers and conclusions based on financial data for Ford Motor Company from 2001−2005. Instructors can note that the lower part of Exhibit 2 supplies trend information on ROE for the five years from 2001–2005 and also gives conclusions on the roles of margin management, asset management, and debt management in explaining Ford's change in ROE from 2001 to 2005; similarly, for Exhibit 3 and 4 for Questions 3 and 4 for GM and DC.

QUESTION 3. Repeat Question 2 using General Motors Corporation ("GM" is now the ticker symbol used in following the steps given above when using the Money Central website).

SOLUTION 3. See Exhibit 3 for numbers and conclusions based on financial data for General Motors Corporation from 2001−2005.

QUESTION 4. Repeat Question 2 using DaimlerChrysler Corporation ("DCX" is now the ticker symbol used in the steps given above when using the Money Central website).

SOLUTION 4. See Exhibit 4 for numbers and conclusions based on financial data for Daimler-Chrysler Corporation from 2001−2005.

QUESTION 5. Analyze the trends in ROE for the "Big Three" auto companies using the answers in the three previous questions. Using the same data gathered to generate the DuPont analysis, compute trends over time focusing on the following valuation metrics: Return on Invested Capital, Economic Value Added and Free Cash Flow. Use T = 20% for all three firms; use WACC = 13% for Ford, WACC = 14% for GM and WACC = 10% for DC. What do these metrics suggest? Do they support the DuPont findings? Do further internet research to find out what analysts are predicting. To illustrate using the Money Central website, type in the ticker symbol and then choose such categories as "Stock Rating," "Earnings Estimates," "Analyst Ratings" and "Insider Trading" to get information. Given all of your previous answers, what are your predictions for an investment in the "Big Three"?

SOLUTION 5. From the DuPont analysis found in Exhibits 2–4, one finds that the ROE for Ford shows a general positive five-year trend from 2001−2005. However, one also finds high variability in ROE from year to year making it more difficult to label the trend as positive. The ROE trend for GM is discouraging as one can see that it has been downward from 2002 through 2005. The ROE trend for DC has been steady but low and (like that for GM) it has been downward for more recent years. Overall, the DuPont analysis suggests that Ford has the most favorable ROE trend. As

seen in Exhibit 5, the trend analysis for valuation metrics gives some mixed results. In this exhibit, one can find a number of categories that suggests a ranking of "Big Three" firms similar to the DuPont analysis. As of April 2006, analysts differ as to which of the three firms offers the best investment potential. StockScouter ranks Ford and DM as dead even, while Yahoo ranks Ford slightly better than GM with DM last. Somewhat disturbing, one can find that analysts often change their minds reversing their rankings weekly. From August 2005 to April 2006, it appears that analysts have most often given Ford the highest ranking. (See Exhibit 5 for more details and possible answers, in regard to valuation metrics and analysts' predictions, based on information provided by Money Central.) Overall, the outlook for the "Big Three" is not great and one would tend to predict below average investment results.

V. SUMMARY STATEMENTS

This paper has presented an approach to analyze financial performance. The approach has been incorporated within a class exercise so that instructors can impart an analytic skill. Summary results of the financial analysis for the "Big Three" are given below.

First, the economic and industrial outlook indicates the auto industry should provide investors with sound returns in the future. Second, the DuPont analyses suggest that the best ROE trend belongs to Ford, but that DC has less variability. However, trends are not impressive and average ROE values are poor for all "Big Three" firms suggesting that it might be better if they were called the "Little Three" (at least in terms of market expectations). Third, metric analyses confirm findings of the DuPont analyses by indicating that the performance for Ford generally appears superior, but DC often has less variability making it less risky from an investor's standpoint. Fourth, while precise forecasts can be a matter of opinion and what aspects are being emphasized, analysts currently do not expect "Big Three" firms to be good investments (even though the industry outlook is good for its competitors such as Toyota and Honda). If expectations for the "Big Three" are poorer, then market efficiency suggests that its stock prices should already reflect this. Thus, if one wants to be more adventuresome (and take on more risk), the "Big Three" may yield a chance for greater returns if and when it can overcome its current problems in terms of higher costs and more fuel guzzling vehicles.

EXHIBIT 1: ROE Flow Chart to Be Used for the DuPont Analysis

ROE Flow Chart for Expanded DuPont Analysis

[NOTE. For each box of the firm being evaluation put in its financial statement numbers for beginning year in the lower half of the box and for the ending year in the upper half of the box.]
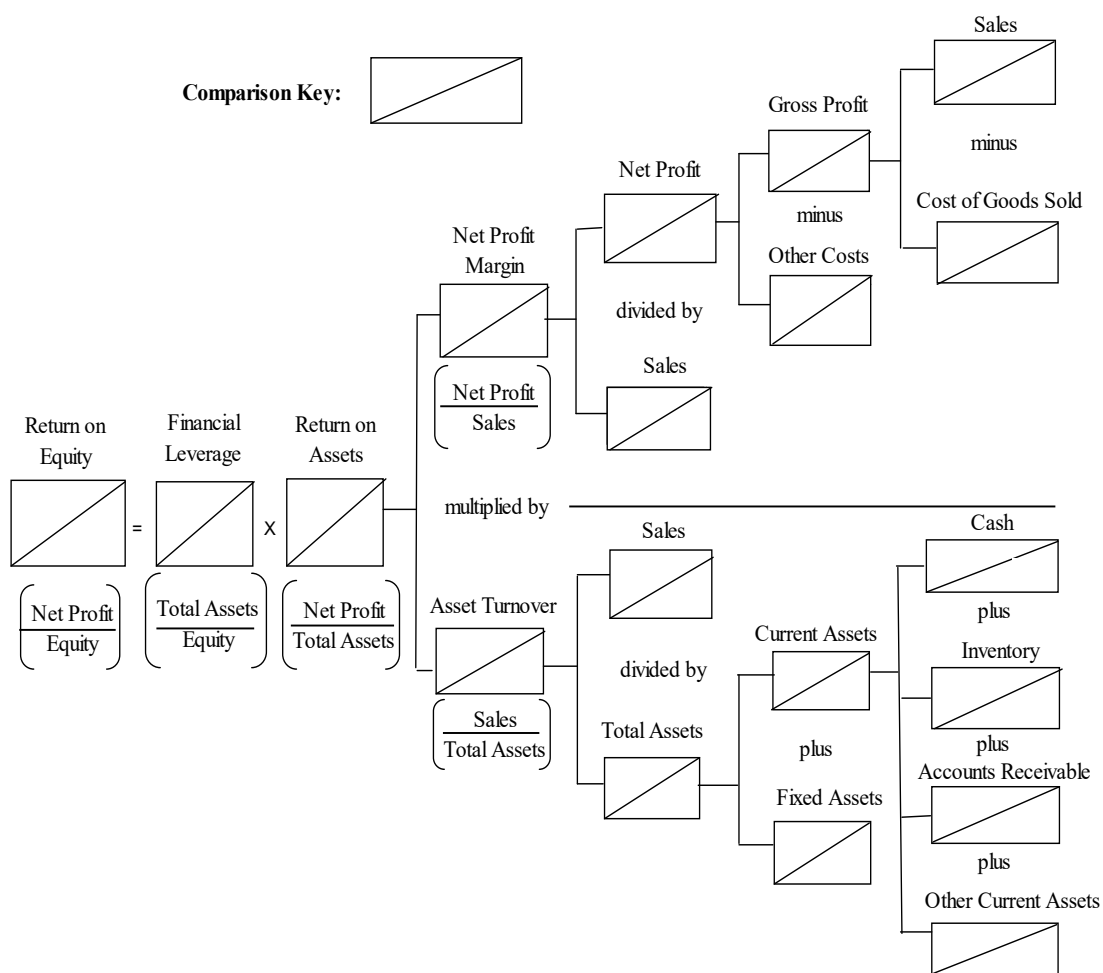
EXHIBIT 2: ROE Flow Chart for Ford Motors Company

Expanded DuPont Analysis for Ford Motors from 2001 to 2005 (values in billions)

YEAR	ROE	TREND (ROE relative to prior year)
2005	3.16%	↓
2004	15.74%	↑
2003	1.11%	↓
2002	8.39%	↑
2001	-68.62%	↓
2000	11.65%	↓
1999	21.23%	-
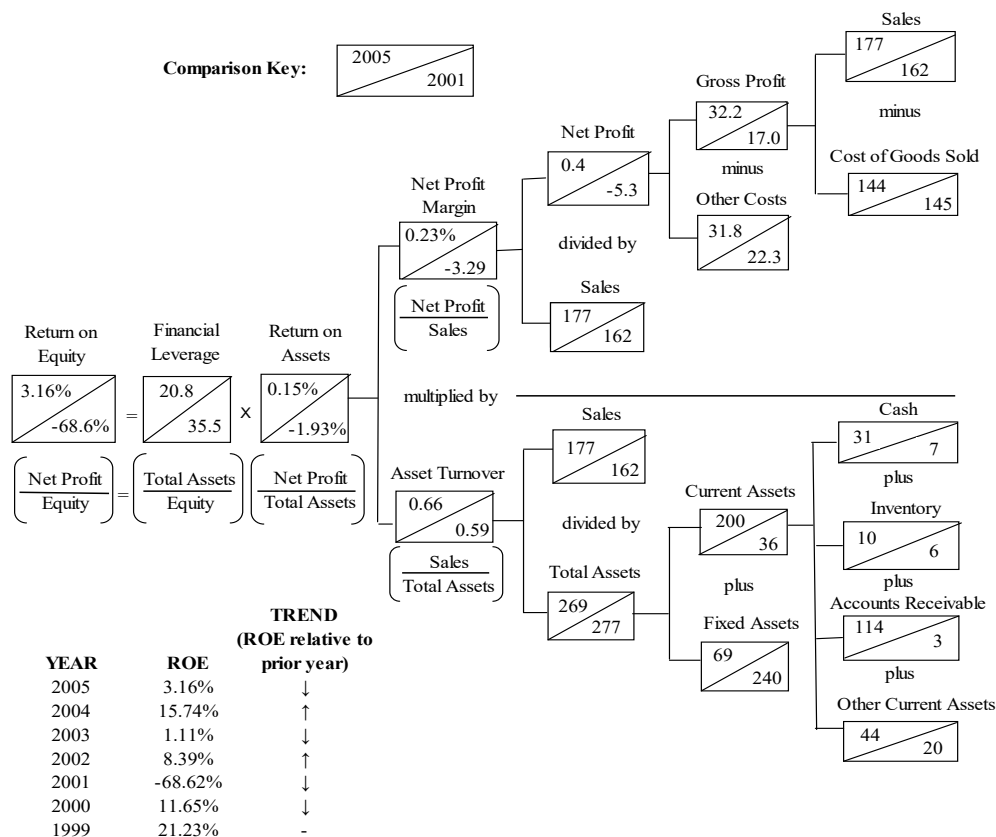
Conclusion for Ford Motors from DuPont Analysis

The change in sign for Return on Equity (ROE) from a negative percentage in 2001 to a positive percentage in 2005 is caused by a change in sign for Net Profit. While sales went up from 2001 to 2005, costs did not increase as much. The end result was that the Net Profit Margin (NPM) went from being negative to being slightly positive. Besides improving its margin management, Ford also improved its asset management (from 2001 to 2005) as its Asset Turnover increased from 0.59 to 0.66. The large value for financial leverage (FL) in 2001 caused the negative Return on Assets (ROA) to be magnified. The firm needs to continue to improve its margin management through increasing its sales relative to its costs. While the effect from debt management is positive for 2005 due to multiplying a very large FL value by a positive ROA, this creates a highly risky situation since a negative NPM can cause a severely negative ROE (as occurred in 2001).

EXHIBIT 3: ROE Flow Chart for General Motors Corporation

Expanded DuPont Analysis for General Motors from 2001 to 2005 (values in billions)

Comparison Key:
2005	
	2001

Sales
193	
	177

Gross Profit
21.6	
	33.4

minus

Cost of Goods Sold
171	
	144

Net Profit
-11.1	
	0.8

minus

Other Costs
32.6	
	32.7

Net Profit Margin
-5.74%	
	0.42%

$\frac{\text{Net Profit}}{\text{Sales}}$

divided by

Sales
193	
	177

Return on Equity
-75.7%	
	3.81%

$\frac{\text{Net Profit}}{\text{Equity}}$

=

Financial Leverage
32.6	
	16.4

$\frac{\text{Total Assets}}{\text{Equity}}$

X

Return on Assets
-2.32%	
	0.23%

$\frac{\text{Net Profit}}{\text{Total Assets}}$

multiplied by

Asset Turnover
0.40	
	0.55

$\frac{\text{Sales}}{\text{Total Assets}}$

Sales
193	
	177

divided by

Total Assets
476	
	324

Current Assets
313	
	194

plus

Fixed Assets
313	
	194

Cash
31	
	19

plus

Inventory
14	
	10

plus

Accounts Receivable
196	
	141

plus

Other Current Assets
71	
	24

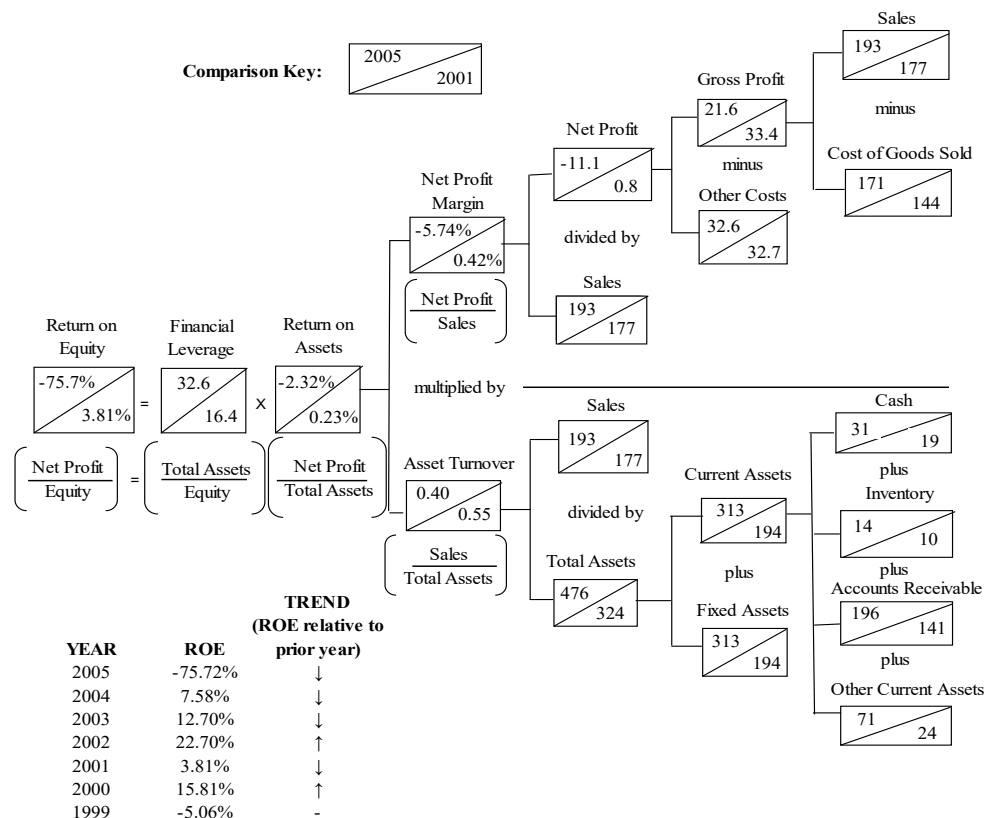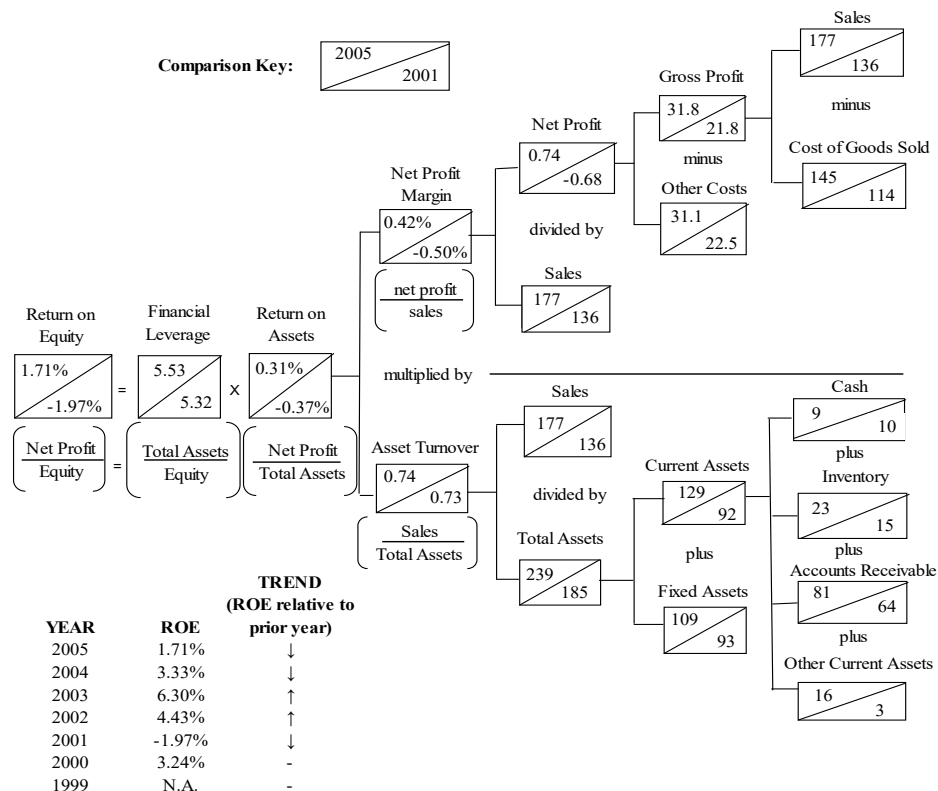| YEAR	ROE	TREND (ROE relative to prior year)
2005	-75.72%	↓
2004	7.58%	↓
2003	12.70%	↓
2002	22.70%	↑
2001	3.81%	↓
2000	15.81%	↑
1999	-5.06%	-

Conclusion for General Motors from DuPont Analysis

The change in sign for Return on Equity (ROE) from a positive percentage in 2001 to a negative percentage in 2005 is caused by a change in sign for Net Profit. While sales went up from 2001 to 2005, costs went up much more. The end result was that the Net Profit Margin (NPM) became very negative. Besides the deterioration in its margin management, GM's asset management (from 2001 to 2005) also degenerated as its Asset Turnover fell from 0.55 to 0.40. The large value for financial leverage (FL) in 2001 caused the slightly positive Return on Assets (ROA) to be magnified. With its equity falling in 2005 to half its 2004 value, FL ballooned to 32.6 magnifying a slightly negative ROA to produce an extremely negative ROE. The firm needs to improve its margin management through increasing its sales relative to its costs, while cutting back its highly risky situation caused by too much debt relative to equity value.

EXHIBIT 4: ROE Flow Chart for DaimlerChrysler Corporation

Expanded DuPont Analysis for DaimlerChrysler from 2001 to 2005 (values in billions)

Comparison Key: 2005 / 2001

Return on Equity
1.71% / -1.97%
Net Profit / Equity

=

Financial Leverage
5.53 / 5.32
Total Assets / Equity

x

Return on Assets
0.31% / -0.37%
Net Profit / Total Assets

Net Profit Margin
0.42% / -0.50%
net profit / sales

Net Profit
0.74 / -0.68

divided by

Sales
177 / 136

Gross Profit
31.8 / 21.8

minus

Other Costs
31.1 / 22.5

Sales
177 / 136

minus

Cost of Goods Sold
145 / 114

multiplied by

Asset Turnover
0.74 / 0.73
Sales / Total Assets

Sales
177 / 136

divided by

Total Assets
239 / 185

Current Assets
129 / 92

plus

Fixed Assets
109 / 93

Cash
9 / 10

plus

Inventory
23 / 15

plus

Accounts Receivable
81 / 64

plus

Other Current Assets
16 / 3

YEAR	ROE	TREND (ROE relative to prior year)
2005	1.71%	↓
2004	3.33%	↓
2003	6.30%	↑
2002	4.43%	↑
2001	-1.97%	↓
2000	3.24%	-
1999	N.A.	-

Conclusion for DaimlerChrysler from DuPont Analysis

The change in sign for Return on Equity (ROE) from a negative percentage in 2001 to a positive percentage in 2005 is caused by a change in sign for Net Profit. While costs went up from 2001 to 2005, sales went up even more. The end result was that the Net Profit Margin (NPM) became slightly positive. While its margin management improved, DaimlerChrysler's asset management (from 2001 to 2005) remained virtually constant as its Asset Turnover improved only from 0.73 to 0.74. The relative large value for financial leverage (FL) in 2001 caused the negative Return on Assets (ROA) to be magnified a bit. The firm needs to continue to improve its margin management through increasing its sales relative to its costs. While the effect from debt management is positive for 2005 due to multiplying a relatively large FL value by a positive ROA, this creates an undesirable situation since a negative ROA can lead to a larger negative ROE.

EXHIBIT 5: Trend Analysis for Valuation Metrics
(Dollar Amounts in Millions)

Ford Motor Company	2005	2004	2003	2002	2001
NOPAT (Net Operating Profit After Tax): EBIT × (1–T)	7,711	9,539	7,248	7,822	2,611
ROIC (Return On Invested Capital): NOPAT / TOC $_{prior\ year}$	4.43%	5.74%	5.28%	23.0%	6.36%
EVA (Economic Value Added): NOPAT – (WACC × TOC $_{prior\ year}$)	-14,916	-12,059	-10,598	3,401	-2,728
FCF (Free Cash Flow)	7,609	1,618	21,611	-95,452	9,676
NOWC (Net Operating Working Capital)	133,454	129,508	124,145	99,344	884
Operating Long Term Assets (Property, Plant & Equipment, net)	40,707	44,551	41,993	37,935	33,121
TOC (Total Operating Capital or Invested Capital)	174,161	174,059	166,138	137,279	34,005

Valuation Metrics indicate mixed results with ROIC and EVA better during the past 5 years compared to GM & DC. From *http://moneycentral.msn.com/home.asp*, one can gather information including the following as of April 2006. There have been 37 more major holders selling than buying. Institutional ownership is 45%. Analysts predict that earnings will grow 5.4% over the next 5 years compared to industry average of 8.4%. For the most part, recommendations by analysts are "moderate sell." StockScouter's rating is 4 on a scale of 10. It appears that Ford will not exceed most other investments in the future. Comparing Ford with GM and DC depends on which statistics are used, but Ford appears to be holding its own in most categories.

General Motors Corporation	2005	2004	2003	2002	2001
NOPAT (Net Operating Profit After Tax): EBIT × (1–T)	-454	11,099	10,446	7,987	7,967
ROIC (Return On Invested Capital): NOPAT / TOC $_{prior\ year}$	-0.16%	4.44%	5.43%	4.47%	6.14%
EVA (Economic Value Added): NOPAT – (WACC × TOC $_{prior\ year}$)	-39,552	-27,998	-24,550	-18,935	-17,050
FCF (Free Cash Flow)	27,060	18,195	-47,227	-5,618	-41,025

NOWC (Net Operating Working Capital)	211,538	240,246	211,761	154,326	143,786
Operating Long Term Assets (Property, Plant & Equipment, net)	40,214	39,020	38,211	37,973	34,908
TOC (Total Operating Capital or Invested Capital)	251,752	279,266	249,972	192,299	178,694

Valuation Metrics indicate mixed results but there is a positive trend in terms of FCF for the last five years. From *http://moneycentral.msn.com/home.asp*, one can gather information including the following as of April 2006. There have been 50 more major holders selling than buying. Institutional ownership is 80%. Analysts predict that earning will grow 4.9% over the next 5 years. For the most part, recommendations by analysts are for "hold." StockScouter's rating is 3 on a scale of 10. Comparing GM with Ford and DC depends on which statistics are used, but StockScouter ranks GM last.

DaimlerChrysler Corporation	2005	2004	2003	2002	2001
NOPAT (Net Operating Profit After Tax): EBIT × (1–T)	4,167	5,530	1,517	5,973	198
ROIC (Return On Invested Capital): NOPAT / TOC $_{prior\ year}$	2.26%	3.01%	0.94%	4.10%	0.13%
EVA (Economic Value Added): NOPAT – (WACC × TOC $_{prior\ year}$)	-13,814	-12,906	-16,870	-10,086	-14,360
FCF (Free Cash Flow)	8,712	5,041	-21,759	9,039	12,649
NOWC (Net Operating Working Capital)	95,811	102,117	111,828	92,836	76,801
Operating Long Term Assets (Property, Plant & Equipment, net)	84,001	82,240	72,040	67,756	68,779
TOC (Total Operating Capital or Invested Capital)	179,812	184,357	183,868	160,592	145,580

Valuation Metrics are relatively steady compared to Ford and GM with more favorable FCFs. From *http://moneycentral.msn.com/home.asp*, one can gather information including the following as of April 2006. There have been 7 more major holders buying than selling. Institutional ownership is 17%. Analysts predict that earning will grow 6.1% over the next 5 years. For the most part, recommendations by analysts are for "hold." StockScouter's rating is 4 on a scale of 10, which is the same as Ford but higher than GM.