University of Houston Victoria

School of Business Administration

Sample Project 2

Siemens AG: Cost of Capital, Capital Structure, and Capital Budgeting Analysis

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1 Executive Summary

This report evaluates the financial health of Siemens AG by first comparing its historical financial ratios with industry and its main competitor the Mitsubishi Corporation. Trend analysis and found that Siemens' outperformed both. Siemens' uses mostly equity to finance its operations and it is highly effective in using assets to generate sales in particular fixed assets when compared to Mitsubishi. Siemens' might be facing a liquidly concern in future and as the market ratios show that its stock might be overvalued but that hasn't impacted operations since its gross profit margins have consistently outperformed industry norms.

The Siemens capital structure estimates were carried out using book and market values. The book value capital structure is 62% equity and 38% debt, while the market value capital structure is 74% equity and 26% debt. Siemens has not preferred stock.

The weighted average cost of capital (WACC) for Siemens was determined by first finding that the after-tax cost of debt is 3.57%, which was calculated using a corporate tax rate of 31% and a 5.8% interest rate on debt. Siemens has no preferred stocks but its cost of common equity is 10.87% established by taking the average of CAPM and DCF methods. Hence, using these cost of debt and equity values combined with the market value weights for debt and equity of 26% and 74% respectively we found that Siemens' projected WACC is 8.97%.

Using this WACC we recommend that new project under consideration, with an initial investment of $192 million, should be implemented since this project will increase stockholder wealth. Using cash flow estimations over the next 8 years this project has a NPV of over $100 million and will recover the initial investment in less then 6 years. Furthermore, projects risk limited in that it is sensitive to sales price and variable cost per unit which Siemens' to a degree can control.

2 Financial Ratio Analysis

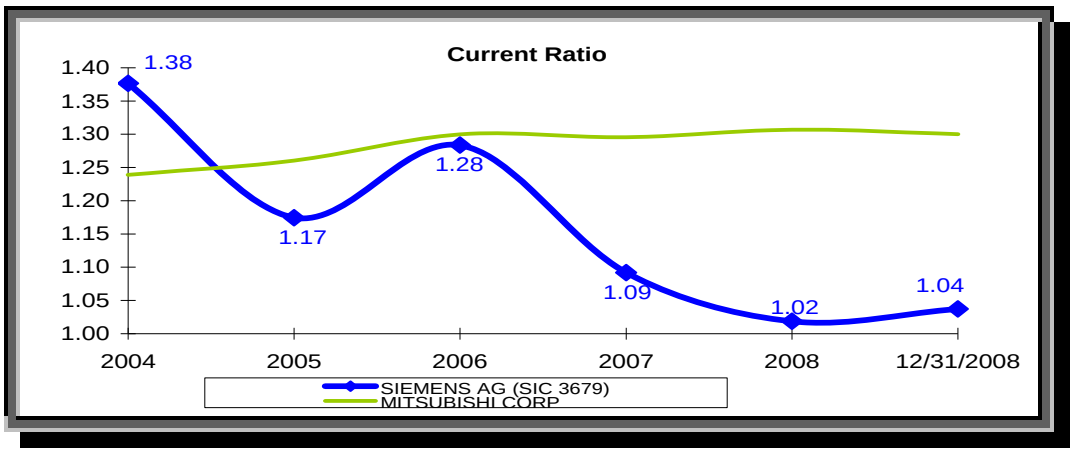
Financial ratio analysis allows us to measure Siemens performance and compare it to like companies. According to Reuters Mitsubishi Corp is one of Siemens major competitors and its industry is Industrial Conglomerates and in general Industrials with SIC 36. This research compares all the analyzed ratios with Mitsubishi and some to industry standards. Also, the fiscal years end for Siemens each year on September 30th and on March 31st for Mitsubishi.

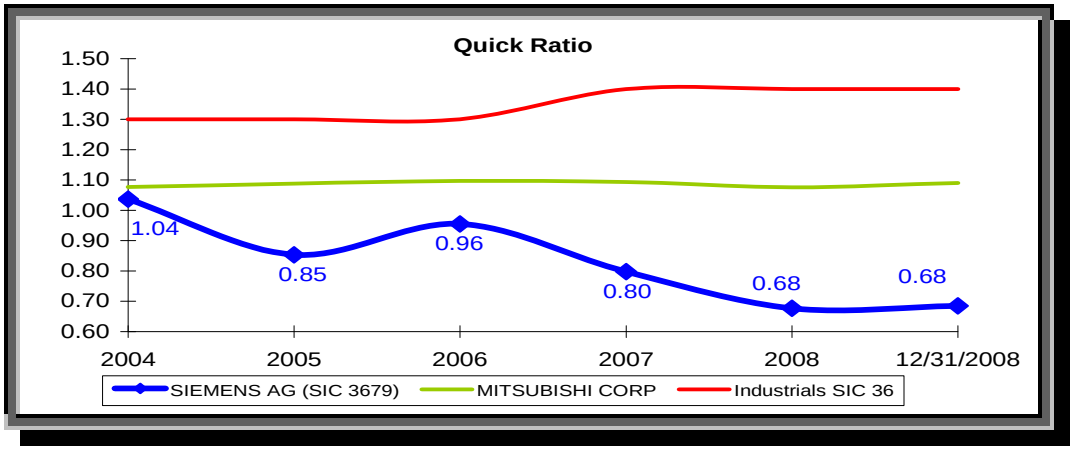
2.1 Trend Analysis

2.1.1 Liquidity

To measure Siemens' capacity to cover its current debt with its short-term assets we need to analyze it's liquidly ratio trends, see Figure 1. Both the current and quick ratios for Siemens have been declining while Mitsubishi's have been relatively stable; hence, indicating that Mitsubishi is in better condition of meeting its short term debt. Siemens' current ratio does not fall under one hence it is still in fairly good financial health to pay its obligations that might come due ("Current Ratio," 2009). However, there will be a concern with Siemens liquidity if the declining trend continues in the future.

Figure 1: Siemens' Liquidity Trend Reveals Steady Decline in Liquidity



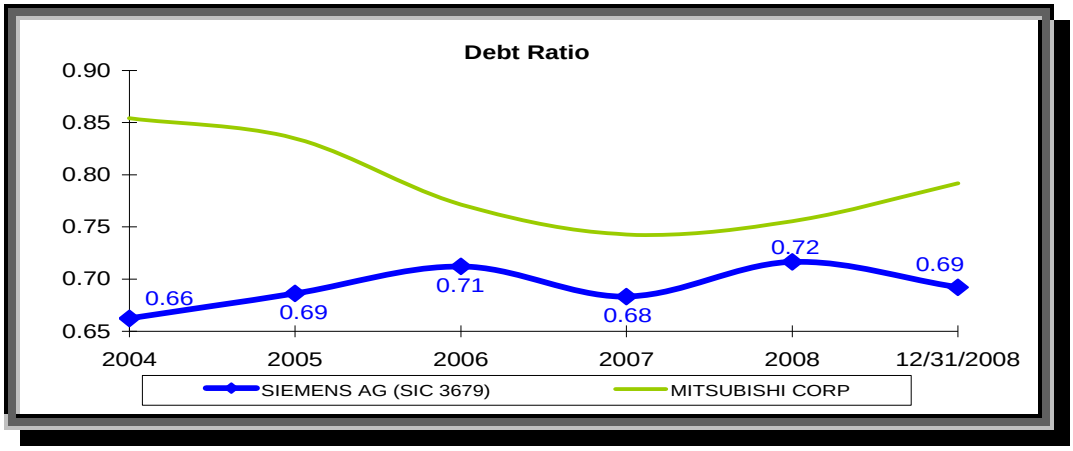


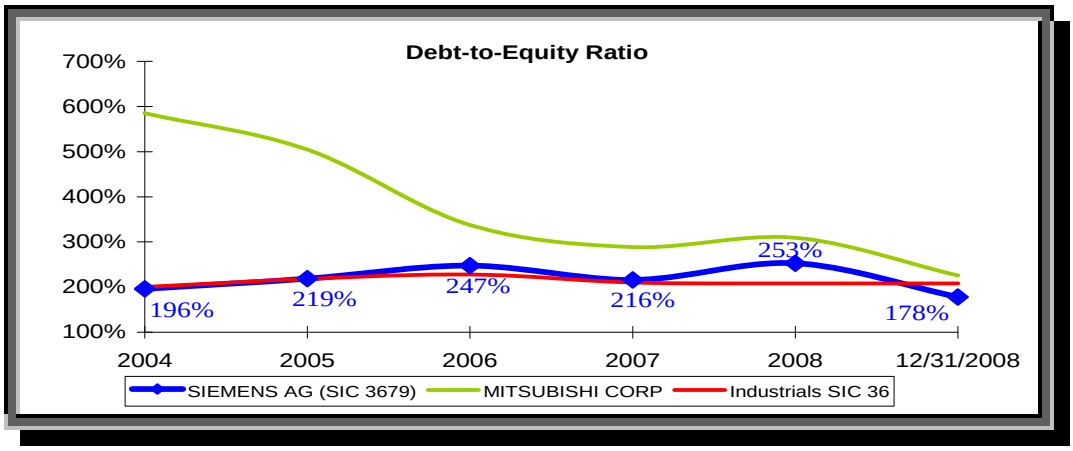
2.1.2 Debt Management

Analyzing the trend of Siemens dept ratio shows that proportion of its funding by creditors has gradually grown over the years, see Figure 2. Yet, it is not as highly leveraged as Mitsubishi during the same period even though Mitsubishi's financing with debt has steadily declined. Thus, Siemens' assets are mostly financed through equity.

The debt-to-equity ratio trend also backs this analysis. It shows that Siemens tendency is to use equity to finance its growth not debt, which is similar to industry standards. Compared to Mitsubishi which was highly aggressive in financing growth with debt in 2004 but recently it is more aligned with industry norms.

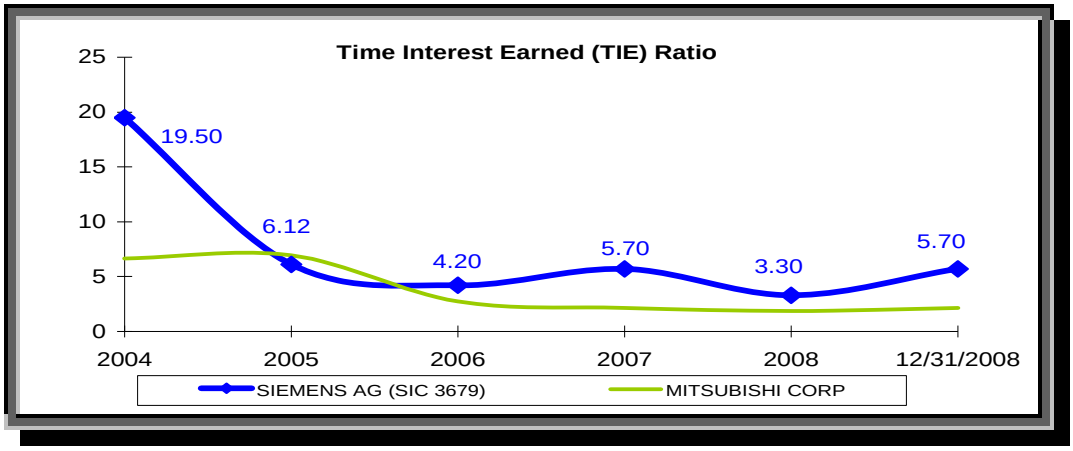
Figure 2: Siemens Financing Growth More with Equity Then Debt





Furthermore, using the time-interest-earned (TIE) ratio we can see in Figure 3 that over the years Siemens' has been somewhat steady while Mitsubishi has seen a decline in its ability to mange its debt obligations. That is, annually Siemens is better able to cover its interest payments on dept then Mitsubishi given that it consistently has a higher TIE ratio.

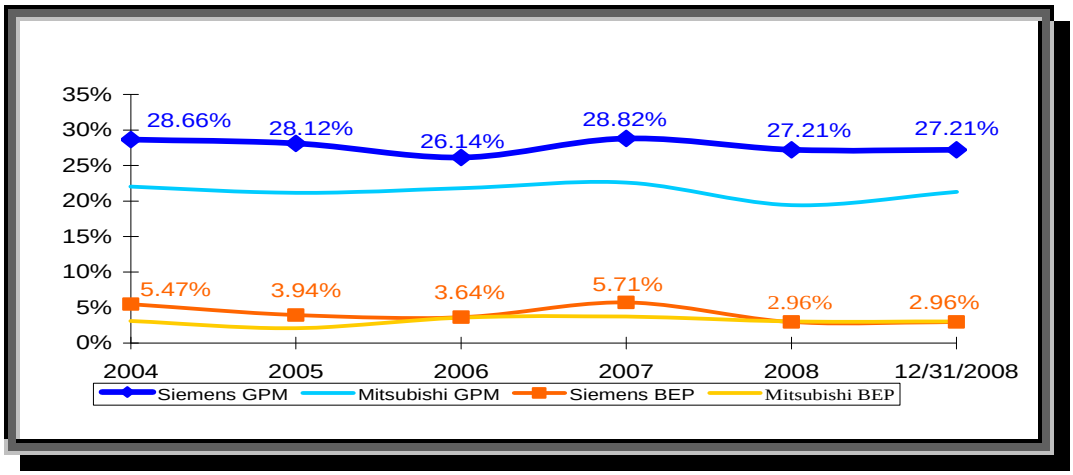
Figure 3: Siemens TIE Ratio Trend from 2004 to Previous Quarter



2.1.3 Profitability

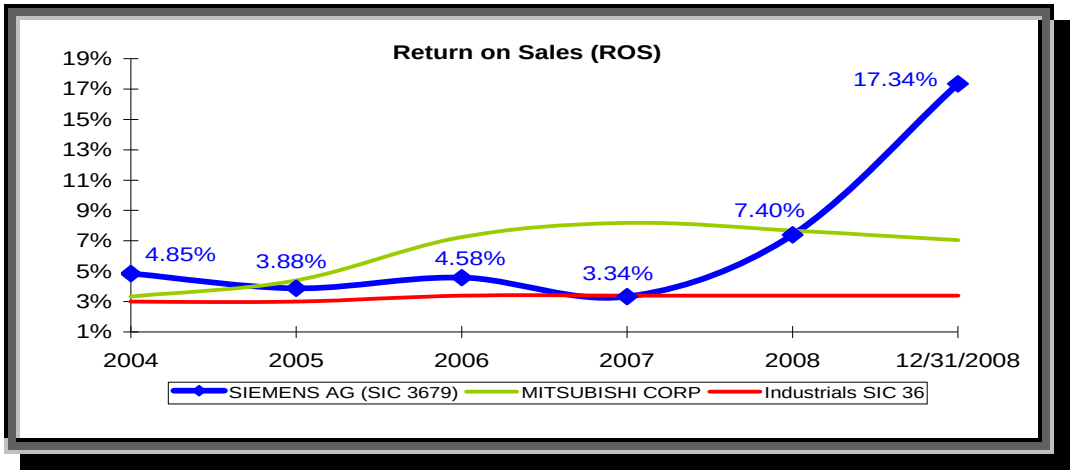
Gross profit margin has remained fairly stable for both companies over the last five years but Siemens is more efficient since it consistently has outdone Mitsubishi, see Figure 4. This figure also shows that the basic earning power (BEP) trend slightly favors Siemens but both have remained constantly steady since 2004.

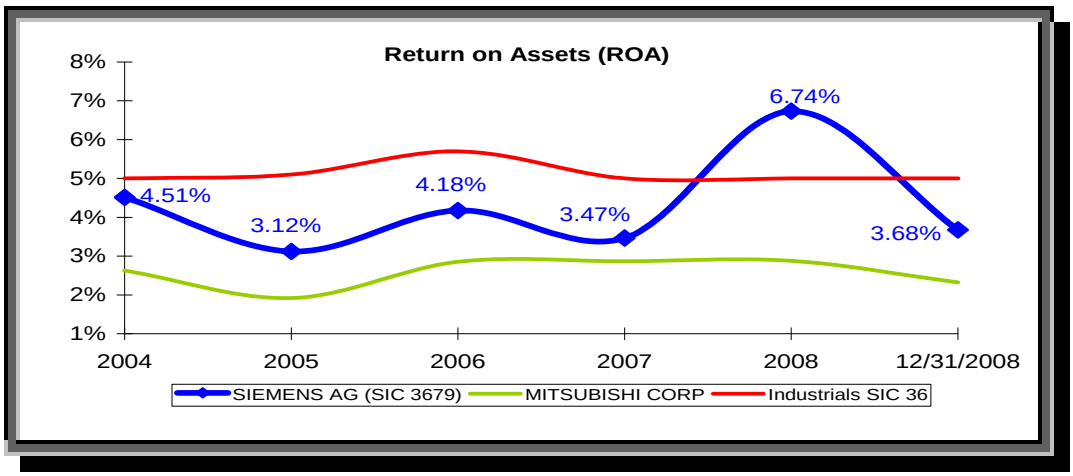
Figure 4: Gross Profit Margin (GPM) and Basic Earnings Power (BEP) Trend Analysis

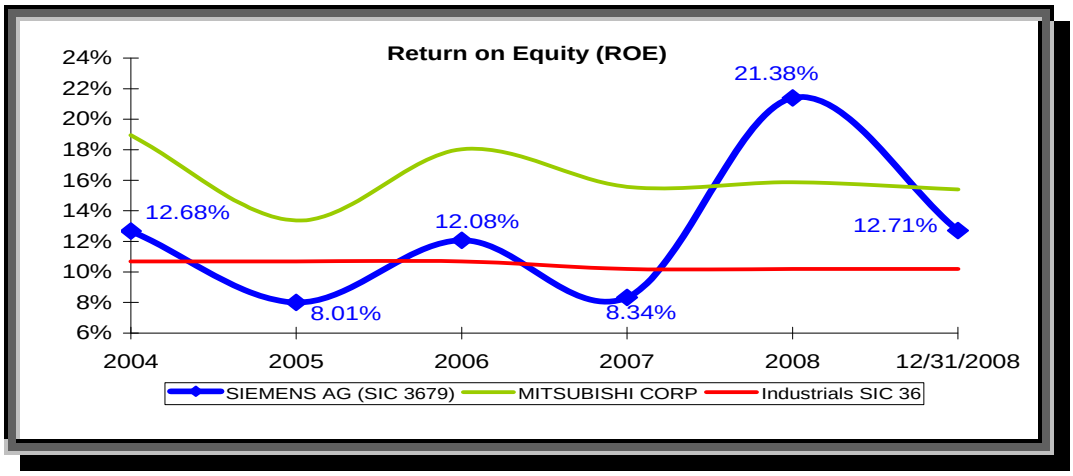


In Figure 5 we see that the annual trend in return-on-sales (ROS) Siemens has outpaced the industry constantly. Plus, Mitsubishi in 2005 overtook Siemens in generating greater profits from sales but since then Siemens has significantly closed that gab so much that by 2008 both are relatively equal and in the last quarter Siemens ROS have suppressed it .

Figure 5: Siemens Outperforms Mitsubishi in Profitability







Siemens has a healthy return on assets (ROA), as the above trend shows, when compared to Mitsubishi but last year its ROA was greater then the industry average while this past quarter its back to its normal about 4.0%. The Industrial's ROA has been relatively stable over that

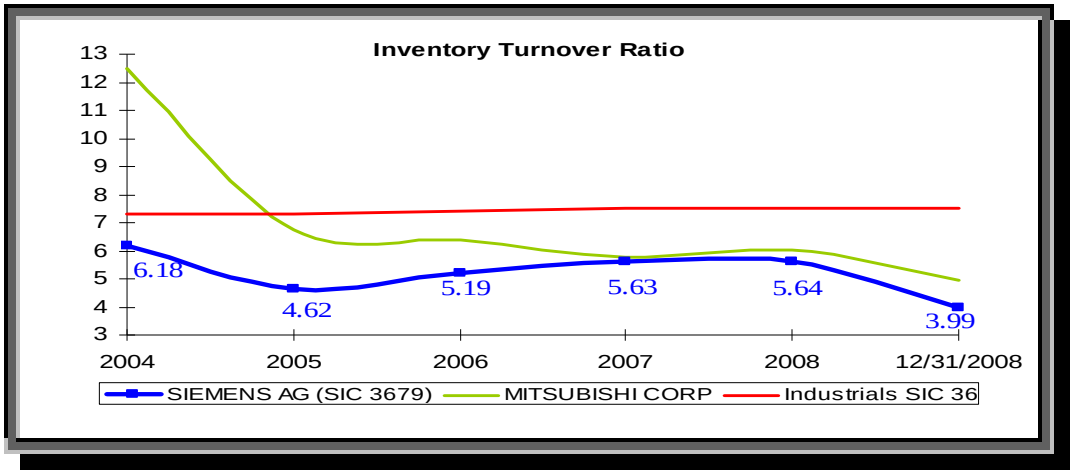
period, so has the return-on-equity (ROE). With Siemens outperforming the industry's ROE three of the last five years and by a significant margin in 2008; which is the same time when it finally outpaced Mitsubishi as well. Thus, the profitability trends indicate Siemens is efficient in generating returns for investors.

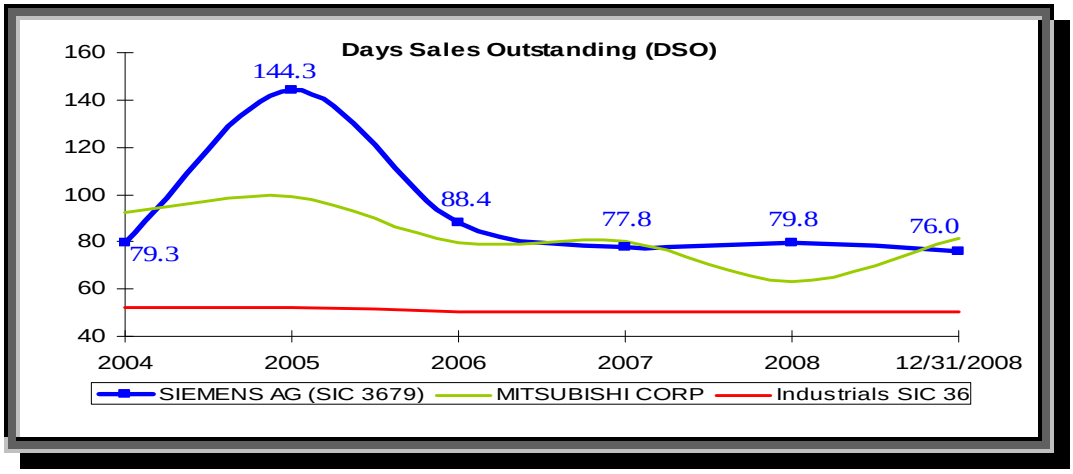
2.1.4 Asset Management

From Figure 6 we see that Siemens inventory turnover dipped in 2005 way below industry average which has remained constant over the last five years. Since then inventory turnover has been steadily increasing getting ever closer to industry norm and fairly equal to its closest competitor Mitsubishi. Thus, there's no trend in excessive inventory to worry about so need to worry about sales being affected.

Moreover, the trend for the days it takes to collect revenue from sales also increased greatly in 2005 but ever since then it declined and remained steady at its five year average. Both companies take longer to collect revenue then the industry standard but both companies take fairly the same amount of time so there's no indication of sales being adversely affected.

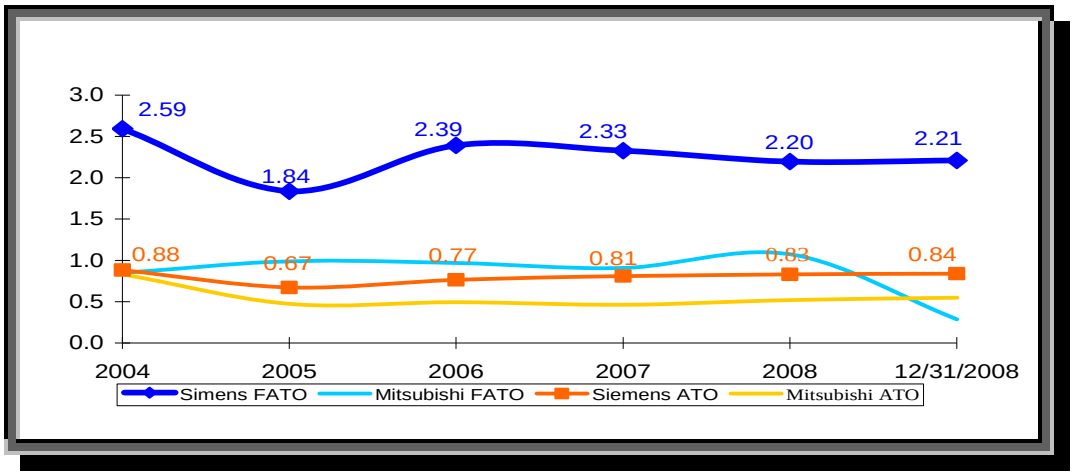
Figure 6: Inventory Turnover and Days Sales Outstanding (DSO) Trends





Siemens trend in operation performance can be further measured using fixed asset turnover and asset turnover ratios; details shown in Figure 7. It reveals that Mitsubishi enjoyed a constant trend in both ratios but Siemens was extremely more productive in generating sales using fixed assets even though over the last five years that productivity declined. While its effectiveness at using assets to create revenue slightly increased over the last three years.

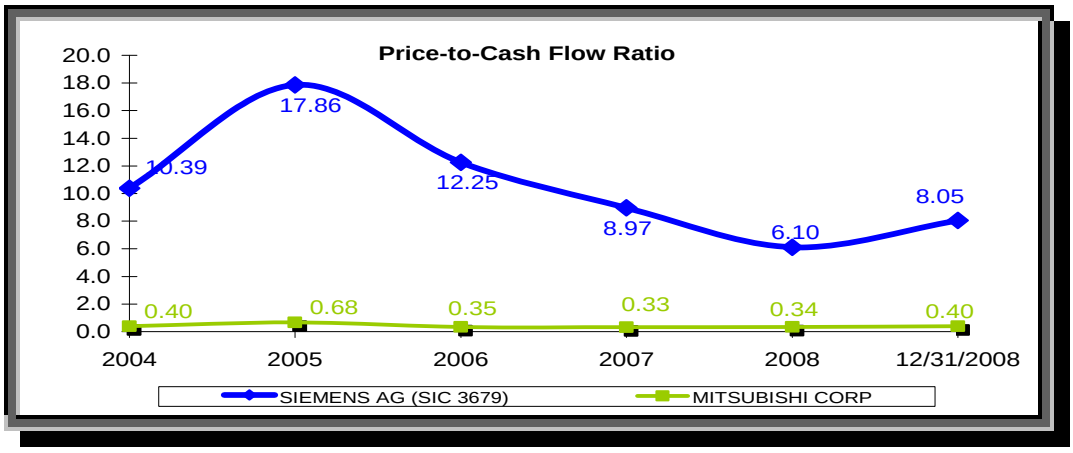
Figure 7: Fixed Assets Turnover (FATO) and Asset Turnover (ATO) Trends

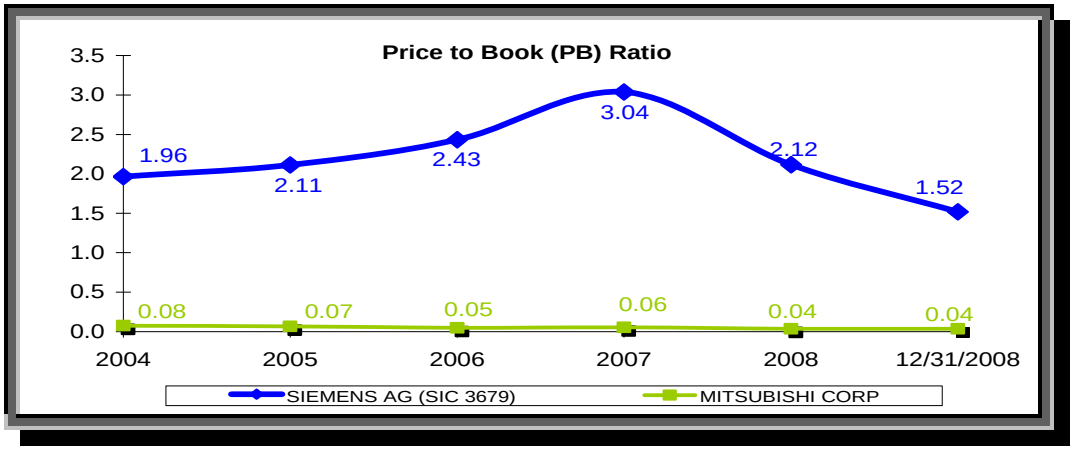


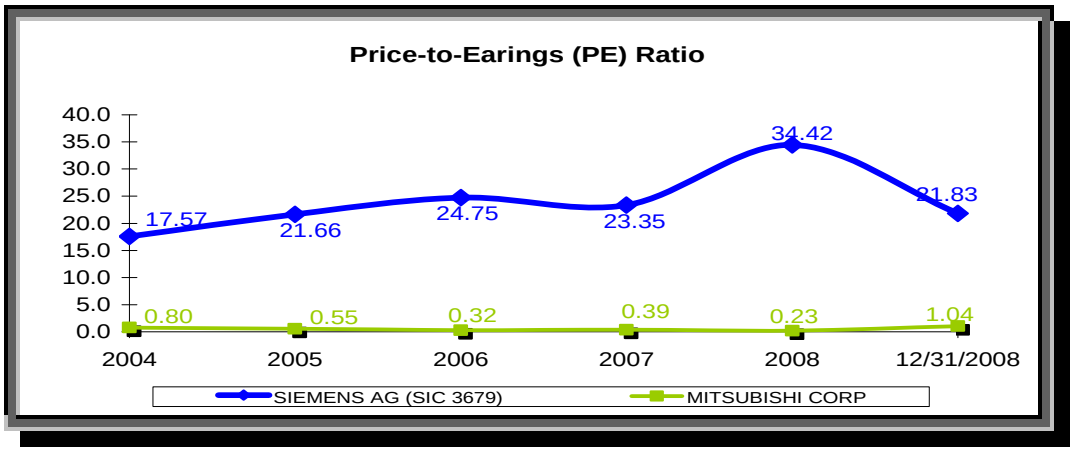
2.1.5 Market Value

To start we analyze Siemens price-to-cash-flow ratio, it measures what investors expect the company's future cash flows. Figure 8 reveals a trend over the last five years that began with a significant increase and then a decline in the past three years getting closer to Mitsubishi; whose price-to-cash-flow ratio remained constant during the same period. This movement seems to indicate Siemens has been overvalued.

Figure 8: Trends in Market Value Ratios







Siemens price-to-earnings (PE) and price-to-book (PB) ratios have been rising over the last five years. While the PE and PB ratios for Mitsubishi have remained constant below one percent. This indicates in general that the market tends to expect higher earnings growth from Siemens and possibly it is overvalued.

2.2 Benchmark Comparison

2.2.1 Analysis of Profitability

The way to determine profitability is by comparing gross profit margin, BEP, ROA, ROE, and ROS of the two companies and comparing these values to industry norms; Table 1 compares the latest five year averages. We see that of the five ratios analyzed Siemens is only underperforming both the industry and benchmark firm on ROE. However, remember trend analysis showed Siemens' ROE last year surpassed Mitsubishi. Therefore, comparing profitability ratios also illustrate that overall Siemens is more successful in generating higher returns on investment (ROI) by earning more on each dollar sale and using assets more effectively to generate earnings.

Table 1: Profitability for Siemens as compared to Mitsubishi and the Industrials Industry using averages from 2004 to 2008

	Siemens	Mitsubishi	Industrial Conglomerates	Comparison
Gross Profit Margin	27.69%	21.39%	20.68%	Good
Basic Earning Power (BEP)	3.92%	3.14%	-	Good
Return on Assets (ROA)	4.28%	2.58%	2.19%	Good
Return on Equity (ROE)	12.53%	16.20%	12.86%	Okay
Return on Sales (ROS)	6.90%	6.32%	2.80%	Okay

According to Advani (2006) the most reliable of these ratios is gross margin, given that it is difficult to embellish, it provides an "exceptional measure of a company's profitability", and even with similar profit margins the company with higher gross margin "drives more from a sale" then the other. Hence, Siemens' gross margin of 27.69% is significantly larger then both Mitsubishi (21.39%) and industry (20.68%). Since Siemens gross profit margin is more than 6% higher then its main competitors and makes roughly five percent more from a sale then the industry norm. So, Siemens is more able to withstand "competition and adverse conditions like rising costs and falling prices" as compared to others in the industry including Mitsubishi ("Financial," 2005).

2.2.2 Operational Efficiency

Comparing asset management ratios reveals the operational efficiency of a firm. Table 2 compares the latest five year average asset management ratios for Siemens, Mitsubishi, and industry. From this we can see that Siemens is quite effective in generating sales from assets even though it takes more time to collect this revenue from customers. The inventory ratio shows that the longer inventory is held the more it costs the organization. Siemens is in good condition when compared to industry since it turns inventory to sales at about industry norms.

Table 2: Asset Management Comparison for Siemens

	Siemens	Mitsubishi	Industrila Conglomerates	Comparison
Inventory Turnover	5.21	7.06	4.53	Good
Days Sales Outstanding (DSO)	90.92	82.72	51.00	Bad
Fixed Assets Turnover	2.60	0.85	-	Good
Total assets turnover (ATO)	0.80	0.56	0.59	Good

The total asset turnover ratio measures the firm's ability to use its assets to drive revenue, higher the number the better. Asset turnover calculations seem to suggest that overall Siemens is more efficient in operations then Mitsubishi. These asset ratios explain that Siemens profits were in part driven by asset turnovers since these ratios are above industry norm.

2.2.3 Financial Strength Analysis

Financial strength determines the firm's ability to meet its short term (liquidity) and long-term (solvency) financial obligations see Table 3. The question that liquidity analysis tires to answer is can a company pay its short-term obligations with its liquid assets? If current ratio is greater than one then the firm can cover its short term debt.

Trend analysis showed current ratio declining from 1.38 to 1.02 over the last five years. This implies that Siemens might, in the near future, have to generate cash by either issuing long-term debt or sell fixed assets to cover its short-term obligations, while Mitsubishi is in a better position because it has ample liquidity to cover its short-term debt (Advani, 2006).

The liquidity of a firm can also be uncovered by the quick ratio; it evaluates a firm to see if it has enough short-term assets to pay impending debt without selling inventory ("Dictionary," 2008). Comparing quick ratios reveals that Mitsubishi tends to be better positioned to pay its current liabilities without worrying about selling inventory to cover the debt. The same cannot be said about Siemens.

Table 3: Liquidity and Solvency Comparison for Siemens using Averages from 2004-08

	Siemens	Mitsubishi	Industrila Conglomerates	Comparison
Current Ratio	1.16	1.28	1.29	Okay
Quick Ratio	0.83	1.09	0.98	Bad
Debt Ratio	0.70	0.79	-	Good
Debt to Equity Ratio	218.15%	375.19%	208.20%	Good
Time Interest Earned (TIE)	7.66	3.75	2.40	Good

To measure each firm's financial leverage the analysis of dept-to-equity ratios must be made, see above. The table shows that Siemens is debt to equity is just about industry average compared to Mitsubishi which is about doubled industry average. Clearly Mitsubishi is overleveraged and Siemens is not. Lastly, TIE is frequently used to determine if a firm has enough EBIT to make interest payments. In general, the larger the TIE the more it is able to pay interest on its dept. Thus, by comparing the two companies we see that Siemens can relatively without doubt cover its interest payments with earnings.

2.2.4 Investment Valuation

Table 4 reveals that on average over the last five years Siemens' stock has been performing well. The price-to-book ratio answers the question on a per share bases how many times a firm's stock is trading compared to its book value? Siemens' stock was trading on average 2.33-times its book value; Mitsubishi sold for 0.06-times its book value, while the Industrials averaged a PB of 1.09.

Table 4: Market Value Comparison for Siemens using Five Year 2004-08 Averages

	Siemens	Mitsubishi	Industry Conglomerates	Comparison
Price-to-Earnings (PE) Ratio	23.93	0.55	4.29	Okay
Price-to-Cash Flow Ratio	10.60	0.41	0.36	Bad
Price-to-Book Ratio (PB)	2.20	0.05	1.09	Good

The price-to-earnings gives a feel of how much an investor will be paying for every dollar of earnings. The average P/E ratio for the industry is 4.29 with Siemens on the average trading at $23.93 per dollar earnings while Mitsubishi trades at 0.55-times its earnings. According to Loth (2005), investors need to compare the current PE ratio against their historical records of the company and industry in order to weigh the price-range. Hence, currently Siemens' PE ratio is 22.73 while Mitsubishi's is at 5.30 and 4.65 for the industry so we can conclude that Siemens is currently overvalued but not excessively.

The price-per-cash-flow (PCF) measures the market price in terms of the firm's cash position. Earlier rend analysis showed that Siemens' PCF was declining steadily towards industry average over the last four years. Nonetheless, when comparing Siemens' PCF ratio (11.12) to that of industry (0.36) and sector (0.94) we conclude that its stock is overvalued.

2.3 Financial Performance Evaluation Summary

Analysis of Siemens financial ratios reveals that over the last five years it has outperformed Industrials, its industry, and Mitsubishi, its benchmark competitor. Using the seventeen ratios analyzed above it was determined that even though the market has slightly overvalued Siemens' stock it is still considered a financially healthy firm.

Profitability for the organization was achieved by above average gross profit margin as well as efficient asset management that lead to a healthy return on assets; which are financed mostly by equity. However, we noticed in the analyses that over the last five years its current ratio dropped to about one while industry average stayed constant around 1.26. Thus, Siemens might be facing liquidly concerns soon.

3 Capital Structure Estimates

3.1 Book Values

Using the last quarter's balance sheet, book values, we can estimate Siemens current capital cost structure. Exhibit 1 illustrates that by using book values Siemens capital structure consists of 62 % common equity, 38% debt, and has no preferred stock.

Exhibit 1: Siemens Capital Structure Estimate using Book Values

From Annual Report filed September 31, 2008 (Euro in Millions)

	Book Value	Weights
Common Equity	€ 26,774	62%
Preferred Stock	-	0%
Debt	16,079	38%
Total Capital	42,853	

3.2 Market Values

Current market values is the best way to estimate a given firms capital structure. Using Siemens last quarter's financial statements we can see from Exhibit 2 that by using market values Siemens capital structure consists of 74 % common equity, 26% debt, and has no preferred stock.

Exhibit 2: Siemens Capital Structure Estimate using Market Values

(Euro in Millions)

		2008	Weights
Value of Common Equity	①	€ 41,466	74%
Value of Preferred Stock		0	0%
Value of Dept	②	14,210	26%
Total Capital		55,676	

① Siemens market value for common equity is found by obtaining the closing stock price and multiplying it with the common shares outstanding, thus on Apirl 17, 2009, as quoted by Reuters, the market cap was 41,466 million EUR.

② Simens market value for debt is found from first quarter financail statements which ended for Siemens on December 31, 2008.

4 Weighted Average Cost of Capital (WACC)

4.1 Cost of Debt

First, we begin with calculating Siemens before-tax and after-tax component cost of debt from previous fiscal year's SEC filings. Total debt from commercial paper, medium-term notes, bonds, loans from banks and other financial indebtedness such as obligations under finance leases is €16,079 million and interest expense €834 million. Therefore, a reasonable estimate of the interest rate on debt, r_d, is 5.18%. Furthermore, according to Siemens 2008 annual report its combined tax rate in Germany is 31%. Thus, we can find the *after-tax cost of debt* as following:

Exhibit 3: After-Tax Cost of Debt Calculation

Siemens Corporate Tax Rate = T = 31%

Interest Rate on Debt = r_d = 5.18%

$$
\begin{aligned}
\textit{After-tax cost of debt} &= \text{Interest rate} - \text{Tax Savings} \\
&= r_d - r_d T \\
&= r_d (1 - T) \\
&= 5.18\% \, (1 - 31\%) \\
&= 0.0518 \, (1 - 0.31) \\
&= 0.0518 \, (0.69) \\
&= 0.035742 \\
&= 3.57\%
\end{aligned}
$$

4.2 Cost of Preferred Stock

Siemens has no preferred stock so there is no component cost of preferred stock.

4.3 Cost of Common Equity

CAPM Approach: Cost of common equity using the CAPM approach is 10.98%; we discuss the details next:

- *Risk-Free Rate*: The 10, 20, 30-year T-Bond as of April 24, 2009 is 3.03%, 3.99%, and 3.89% respectively according to the U.S. Department of Treasury.
- *Market-Risk Premium:* The market risk premium of 5.0% is used in our calculations as suggested by the class textbook.
- *Beta:* Reuters quotes Siemens beta as 1.59 as of April 27, 2009.

Exhibit 4: Cost of Equity using CAPM Approach

Risk-free rate = r_{RF} = 10 year T-Bond rate = 3.03%
Market risk premium = RP_M = 5%
Siemens' beta = b_i = 1.59

$r_s = r_{RF} + RP_M(b_i)$
$= 3.03\% + 5\%(1.59)$
$= 3.03\% + 7.95\%$
$= 10.98\%$

DCF Approach: When we use the DCF approach we find that the cost of common equity is 10.75%, see details below.

- *Growth Rate Expected:* First, by using the retention growth model we can estimate the expected growth rate. Siemens has averaged ROE of 11.78% and dividend payout rate of 0.39 over the past 15 years. So, the retention rate has averaged:

  Retention ratio = 1 – Payout ratio
  = 1 – 0.39
  = 0.61

  Consequently, the expected growth rate is:

  Expected growth rate = ROE (Retention ratio)
  = 11.78% (0.61)
  = 7.19%

- *Price:* As of April 24, 2009 Siemens price per share was €48.27.

- *Next Expected Dividend:* According to Siemens the current dividend (D_0) was €1.60, thus we can find the next expected dividend (D_1) by the following:

  $D_1 = D_0 (1 + g)$
  = €1.60 (1 + 7.19%)
  = €1.60 (1.0719)
  = 1.71504
  = €1.72

Now that we have all the input variables we can find the cost of common equity capital using the DCF approach as following:

Exhibit 5: Cost of Equity using DCF Approach

Next expected dividend = D_1 = €1.72
Market price= P_0 = €48.27
Expected growth rate = g = 7.19%

$$r_s = [D_1 / P_0] + g$$
$$= [€1.72 / €48.27] + 7.19\%$$
$$= 3.56\% + 7.19\%$$
$$= 10.75\%$$

Bond-Yield-Plus- Risk-Premium (BYPRM) Approach: The bonds of Siemens have a yield of 3.57%, same as the cost of debt, see Exhibit 3. And we will estimate the bond risk premium to be 3.0%; hence the estimated cost of common equity is 6.57%, see next exhibit.

Exhibit 6: Cost of Equity using Bond-Yield-Plus-Risk-Premium Approach

Bond yield = cost of debt = 3.57%
Estimated bond risk premium = 4.0%

r_s = Bond yield + Bond risk premium
= 3.57% + 3.0%
= 6.57%

Therefore, using CAPM, DCF, and BYPRM approaches the cost of common equity is 10.98%, 10.75%, and 7.57% respectively. We can see that BYPRM approach gives a widely varied estimate over the other two approaches thus we recommend that the final cost of equity is the average of the CAPM and DCF estimates, which is 10.87%.

4.4 WACC using Market-Based Capital Weights

We can find the WACC by using the market value based capital weights form Exhibit 2, after-tax cost of debt from Exhibit 3, and the average cost of common equity of 10.87%:

Exhibit 8: WACC using Market Value Weights

Market value of common equity weight = $w_{ce} = 74\%$
Market value of debt weight = $w_d = 26\%$
After-tax cost of debt = $r_d(1 - T) = 3.57\%$
Average cost of common equity = $r_s = 10.87\%$

$$WACC = w_d\, r_d(1 - T) + w_{ce}\, r_s$$
$$= 0.26(3.57\%) + 0.74(10.87\%)$$
$$= 8.97\%$$

5 Cash Flow Estimation

Estimating the cash flows of the new project under consideration are detailed in the accompanying Excel file under the *Cash Flow and Budget Analysis* worksheet and summarized in the following exhibits:

Exhibit 9: New Project Inputs

Fixed Assets	
Property & equipment	$180,000,000
Shipping & installation fee	$12,000,000
Salvage value	$25,000,000
MACRS class	7
Variable Assets	
First year sales (in units)	870,000
Sales price per unit	$250
Variable cost per unit	$175
Growth rate	10%
Tax rate	33%
WACC	8.97%
Net Operating WC/Sales (NOWC)	18.00%
Inflation	2.5%

NOTE: See details in Excel workbook *AsifAli__FIN6352__FinalProject.xls* under *Cash Flow and Budget Analysis* worksheet

Exhibit 10: Depreciation Expense and Net Salvage Cash Flow

Fixed assets depreciation	
Cumulative depreciation expense	*$127,307,535*
Book value when salvaged	***$64,692,465***
	Fixed Assets
Market value when salvaged	$ 25,000,000
Book value when salvaged	64,692,465
Expected gain (loss)	(39,692,465)
Tax rate	33%
Tax paid (credit)	(13,098,513)
Net cash flow form salvage	**$ 38,098,513**

NOTE: See details in Excel workbook *AsifAli__FIN6352__FinalProject.xls* under *Cash Flow and Budget Analysis* worksheet

Exhibit 11: Estimated Annual Cash Flows for Life of Project

Years:	0	1	2	3	4	5	6	7	8
(in millions)	2009	2010	2011	2012	2013	2014	2015	2016	2017
Initial	$192								
Operation		52.6	58.4	52.9	51.5	50.9	51.9	52.9	52.9
NOWC	(39.15)	(0.98)	(1.00)	(1.03)	(1.05)	(1.08)	(1.11)	(1.14)	46.54
Salvage									38.0
Net (time line)	($231)	$52	$57	$52	$50	$50	$51	$52	$137

NOTE: See details in Excel workbook *AsifAli__FIN6352__FinalProject.xls* under *Cash Flow and Budget Analysis* worksheet

6 Capital Budgeting Analysis

We analyzed the capital budget of the new project using the various methods shown in Exhibit 12. Using the NPV method we see that the shareholders wealth will increase by over a $100 million during the entire life of the project. The profitability index (PI) for the project is 1.44 based on a WACC of 8.97% also signifies that the project should be accepted. Furthermore, IRR (18.61%) is over two times and MIRR (14.01%) is over of one-and-a-half times more then the required hurdle rate of 8.97%; that is, the project is estimated to earn at the minimum one-and-a-half times more than the cost of capital needed to finance it.

The project has a life of eight years. During those years the project is expected to recover its initial investment of $192 million just less then six years. This is because the pay back period is 4.40 years while discounted payback period is 5.90 years.

Exhibit 12: New Projects Capital Budget Analysis

Net Present Value (NPV)	$100,694,580	
Internal Rate of Return (IRR)	18.61%	
Modified Internal Rate of Return (MIRR)	14.01%	
Profitability Index (PI)	1.44	
Payback Period	4.40	years
Discounted Payback Period	5.90	years

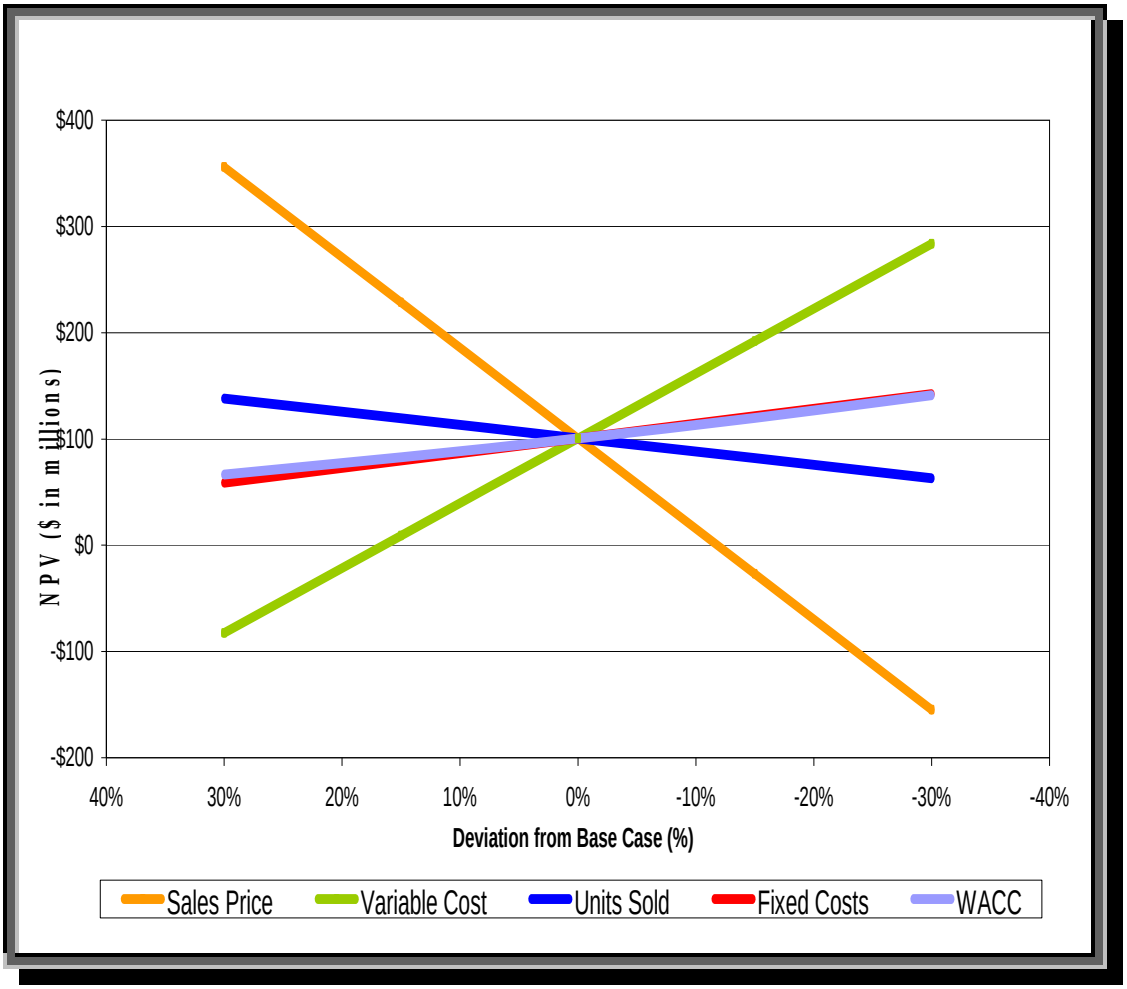
NOTE: See details in Excel workbook *AsifAli__FIN6352__FinalProject.xls* under *Cash Flow and Budget Analysis* worksheet

Sensitivity analysis of key variables, see Exhibit 13, shows that some variables have a major effect on the project's NPV, while others have little impact:

- The project's NPV is very sensitive to changes in per unit variable costs and sales price.
- The unit costs, fixed costs, or WACC do not significantly impact the project's NPV.

Thus, the project does have risk mainly tied to variable costs and sales price. If the estimates of these two sensitive variables are even slightly off then the probability is high that the project's NPV is wrong. But, the good news is the firm can use cost control strategies to manage direct and indirect variable costs and to some extent control prices by using an appropriate pricing strategy.

Exhibit 13: Sensitivity Analysis for Key Variables



NOTE: See details in Excel workbook (AsifAli__FIN6352__FinalProject.xls) under *Cash Flow and Budget Analysis* worksheet

Finally, it is recommended that Siemens AG implement the project due the following reasons:

- The new project will increase shareholder wealth as revealed by the indicators of project profitability: NPV, IRR, MIRR, PI, and payback and discounted payback capital budgeting methods above.
- The new project's risk, as revealed by sensitivity analysis, is mainly tied to sales price and per unit variable costs which to some extent the firm can control.

7 Summary

In conclusion Siemens AG's is overall performing quite well when compared to industry and its major competitor Mitsubishi Corporation. This was determined by financial ratio analysis trends and benchmark comparisons over the last five years. The analysis found that Siemens' assets are mostly leveraged by equity then by debt. Siemens had a higher ROI mainly due to using assets more effectively to generate earnings. In particular its average gross profit margin of 27% was greater than that of industry so the firm is exceptionally profitable.

Siemens' after-cost-of-debt was determined to be 3.57% and cost of common equity is 10.87%. Hence, its WACC is 8.97% using market value weights. This value was used to estimate the new project's cash flow estimates which were then used to analyze the capital budget of the project.

The NPV was found to be over $100 million with the new project estimated to recover its initial $192 million investment in less then six years. This NPV will be mostly impacted by sales price and variables costs per unit; but these inputs mostly can be controlled by the firm. Thus, it was recommended that the company implement the new project because doing so will increase shareholder wealth.

8 References

Advani, R. (2006). The wall street MBA: Your personal crash course in corporate finance. New York: McGraw-Hill Professional.

Benchmarks: Industrial, Conglomerate. New York, NY: Thomson Reuters. Retrieved April 15, 2009, from http://www.reuters.com/finance/industries/overview?industryCode=52311

"Current Ratio". (2008). Edmonton, Alberta: Investopedia. Retrieved April 15, 2008, from http://www.investopedia.com/terms/c/currentratio.asp

Dictionary search tools. (2008). Edmonton, Alberta: Investopedia. Retrieved April 15, 2008, from http://www.investopedia.com/terms/dictionary/default.asp

Financial statement analysis: Profitability ratios. (2005). Toronto, Ontario: Credit Guru Inc. Retrieved April 18, 2008, from http://www.creditguru.com/ratios/ratiopg3.htm

Loth, R. (2005). *Investment valuation ratios*. Edmonton, Alberta: Investopedia. Retrieved April 15, 2008, from http://www.investopedia.com/university/ratios/investment-valuation/default.asp

9 Appendices

9.1 Appendix 1: Book Value Capital Structure Estimation

Siemens Book Value Capital Structure		
As of September 30, 2008 (Euro in Millions)		
	2008	**Weights**
Equity		
Common Stock	€ 26,774	62%
Preferred Stock	-	0%
Total Equity	26,774	
Debt		
Short-term debt	1,819	
Long-term debt	14,260	
Total Debt	16,079	38%
Total Capital	42,853	
As precnetaage of total capital		
Common Equity	62.5%	
Preferred Stock	0%	
Debt	37.5%	
Short-term	*4.2%*	
Long-term	*33.3%*	