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ExxonMobil Financial History and Industry Outlook

Evolution of Participation of Principal Product Markets:

ExxonMobil is an American multinational oil and gas corporation. ExxonMobil's foundation trace its roots back to the John D. Rockefeller's Standard Oil Company. Using the Sherman Antitrust Act as a justification, in 1911 the United States Supreme Court ruled that Standard Oil should be disbanded and split into 34 companies. Two of these companies were Jersey Standard ("Standard Oil Company of New Jersey"), which eventually became Exxon, and Socony ("Standard Oil Company of New York"), and it became Mobil. ExxonMobil was formed on November 30, 1999, by the merger of Exxon and Mobile. The areas in which the company operates to earn revenue are exploration and production (E&P), refining and marketing (R&M), and manufacturing. ExxonMobil's earnings by segment, as of December 31st 2011, are shown in exhibit 1.

Exhibit 1: XOM Earnings by Segment, 2010

Segment	Earnings (billion dollars)
Exploration and Production	24.1
Refining and Marketing	3.6
Manufacturing	4.9

Source: Data gathered from [wikinvest.com](http://www.wikinvest.com)

With regards to manufacturing, ExxonMobil's chemicals uses oil to manufacture and market commodity petrochemicals, like plastics. In exhibit 2, we see how ExxonMobil compares to its major competitors in terms of sales and refinery, as of December of 2009.

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Exhibit 2: Sales and Refinery Capacities of XOM and Some of its Competitors, 2009

Company	Refinery Capacity thousand barrels/day	Sales thousand barrels/day
ExxonMobil	6210	6761
BP	2,678	5,698
Chevron	2,139	3,429

Source: wikinvest.com

ExxonMobil is the largest of the six supermajors – the other five being BP, Chevron, Shell, Total, and ConocoPhillips – with daily production of 3.921 BOE and that is 3% of the world’s production. Exhibit 3 shows how ExxonMobil ranks with those companies and some state-owned oil and gas companies.

Exhibit 3: Top 10 Oil Companies, 2010

Ranking	Company Name
1	Saudi Aramco (State-Owned)
2	NIOC (State-Owned)
3	ExxonMobil (Public)
4	PDV (State-Owned)
5	CNPC (State-Owned)
6	BP (Public)
7	Royal Dutch Shell (Public)
8	ConocoPhillips (Public)
9	Chevron (Public)
10	Total (Public)

Source: Data gathered from Standard & Poor’s Industry Survey 2010.

Despite being a publicly owned company, ExxonMobil manages to be larger than many state-owned companies. More impressive is that with 37 refineries in 21 countries constituting a daily refining capacity of 6.3 million barrels, ExxonMobil is the largest refiner in the world.

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Exhibit 3: XOM Petroleum Product Sales, 2010

Product	Amount thousand barrels/day
Specialty products	685
Gasolines and naphthas	2,621
Heating oils, kerosene and diesel	2,027
Aviation fuels	520
Heavy fuels	636

Source: wikinvest.com

Similarly to other supermajors, ExxonMobil's largest market is the United State.

Exhibit 2: XOM Worldwide Oil-Sale Distribution, 2010

Section Of The World	Oil Sales Volumes thousand barrels/day
U.S.	2516
Europe	1652
Rest of World	2321

Source: wikinvest.com

Recent Asset and Sales Growth:

Ever since it's merging in 1999, ExxonMobil has been engaged in a series of partnerships, acquisitions, and diversification in order to expand its share and ownership of the oil and gas industry. Just recently, for example, the company completed a \$30 billion project called the North Field. The field is expected to boost the company's gas production 12%, making ExxonMobil the world's largest natural gas producer.

To further expand its portfolio in natural gas, in September of 2009 ExxonMobil agreed to a joint venture with Royal Dutch Shell and Chevron to construct a liquefied gas facility off the Coast of Australia. Exxon and Shell will each have 25% while Chevron will have the remaining 50%.

Likewise in 2010, ExxonMobil arrived at an agreement with XTO Energy to acquire the company for \$31 billion in stock. However, XTO's shareholders didn't

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approve the deal until June 25, 2010. All these moves highlight the company's continual effort to dominate the shale-based oil and natural gas industry just like it has dominated the petroleum industry. Since explaining every major development the company has had would take much time and space, below is a summary of the company's major developments since it's merging 13 years ago.

Exhibit 3: XOM Major Developments, 1999 to 2011

Year	Acquisition/Divestiture
1999	On November 30, Exxon and Mobil join to form ExxonMobil Corporation.
2001	ExxonMobil Research & Engineering Company (EMRE) develops the <i>SCANfining</i> process, which uses a new proprietary catalyst to selectively remove more than 95 percent of the sulfur from gasoline while minimizing octane loss.
2002	ExxonMobil, joined by other sponsors, initiates the Global Climate and Energy Project (GCEP) at Stanford University — a pioneering research effort to identify technologies that can meet energy demand with dramatically lower greenhouse gas emissions.
2005	ExxonMobil and Qatar Petroleum, with other joint-venture partners, expand development of the giant North Field offshore Qatar, the largest non-associated gas field in the world.
2007	Exxon Neftegas Limited (a subsidiary of ExxonMobil Corporation) completes the drilling of the Z-11 well, the longest measured depth extended-reach drilling (ERD) well in the world. (Located on Sakhalin Island offshore eastern Russia, the record-setting Z-11 achieved a total measured depth of 37,016 feet (11,282 meters), or more than seven miles.)
2009	ExxonMobil and Synthetic Genomics Inc. (SGI) announced the opening of a greenhouse facility today enabling the next level of research and testing in their algae biofuels program.
2010	ExxonMobil finalizes its agreement with XTO Energy Inc., creating a new organization to focus on global development and production of unconventional resources.
2011	ExxonMobil announced two major oil discoveries and a gas discovery in the deep-water Gulf of Mexico after drilling the company's first post-moratorium deep-water exploration well.

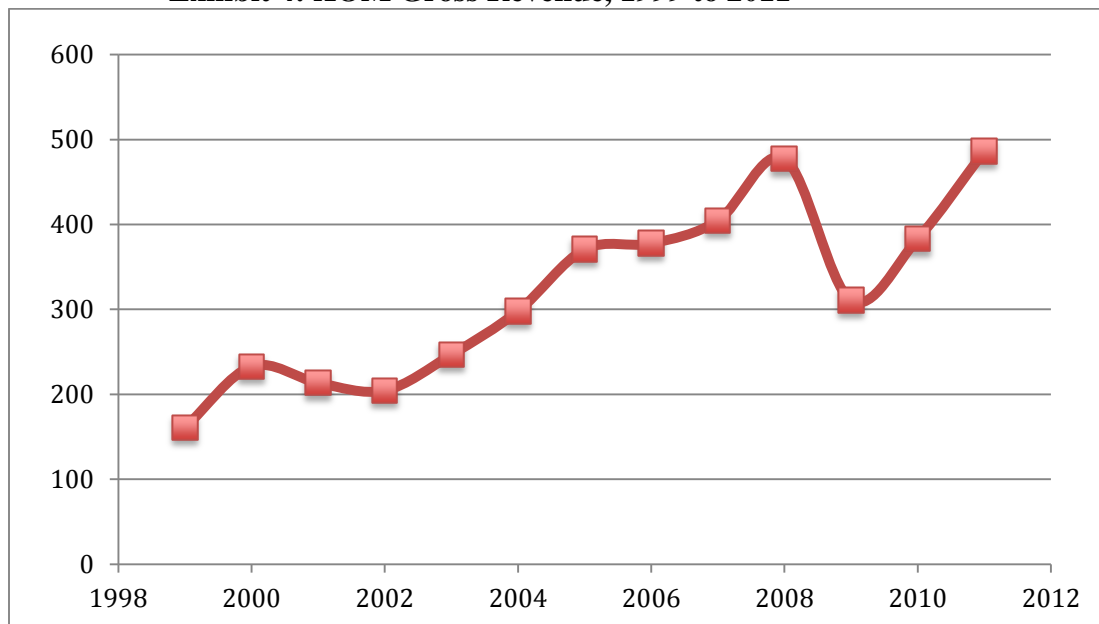
Source: www.exxonmobil.com

Despite the Exxon Valdez oil spill incident which threatened to cripple the company's growth due to the magnitude of the environmental catastrophe, ExxonMobil has managed to overcome that and many other hurdles to be the dominant force it is

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today in the petroleum industry. Part of that success can be attributed to its major oil discoveries. For example, the recent oil discoveries by the company in the deep-water Gulf of Mexico were one of the largest discoveries in the Gulf of Mexico in the last decade. But to get a full picture of the company's major expansion in more than a decade, the company's total assets.

Exhibit 4: XOM Gross Revenue, 1999 to 2011

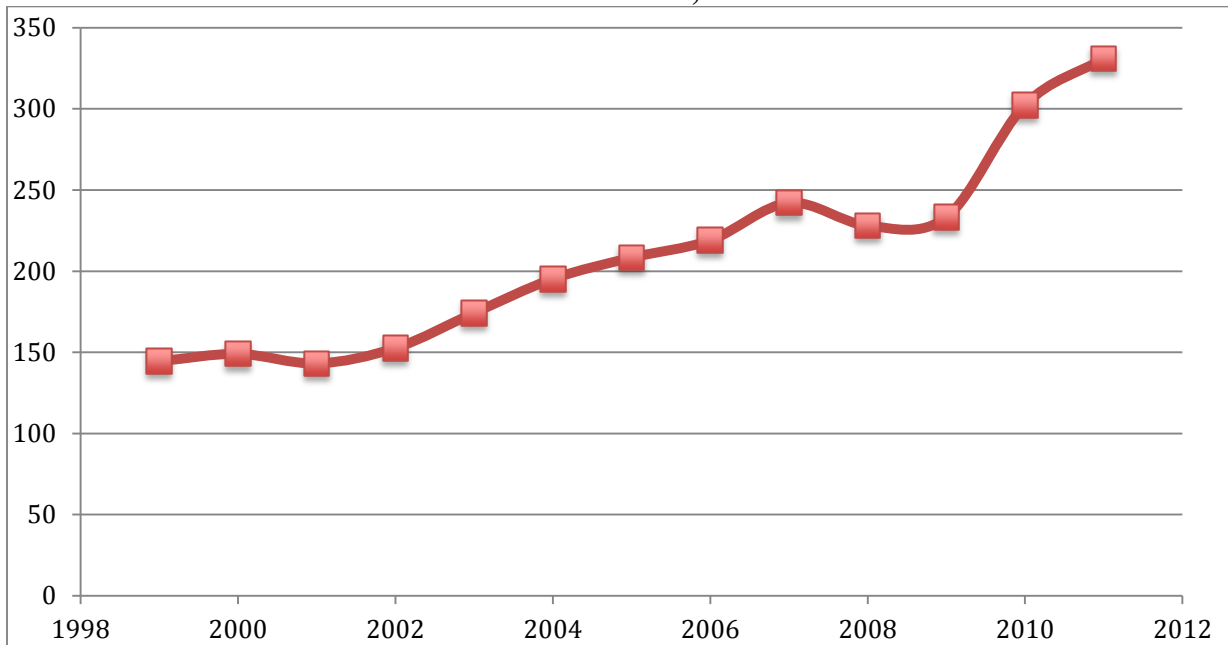


Source: mergentonline.com, financial database

Just like the major developments indicate, ExxonMobil has experienced tremendous amount of growth and expansion since its formation back in 1999. The only things that have been able to slow down ExxonMobil's growth are recessions. The slight dip that the chart shows between the year 2000 and 2002 was due to an eight-month recession that started in 2000. Likewise, the huge dip in late 2007 and early 2008 was a result of the Great Recession.

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Exhibit 5: XOM Total Assets, 1999 to 2011



Source: mergentonline.com, financial database

Similarly to gross revenues, between 2000 and 2002, there is a slight drop in the company's total assets. Despite the huge loss in its revenues, the company's total assets weren't affected as much.

Prospective Industry Developments:

The future of the petroleum industry is very volatile. Sometimes commodity prices are driven by economic issues around the world and other times they are driven by geopolitical issues in the Middle East. For example, the recent global economic recession caused oil prices and stock values of oil companies to tank. In a classic supply and demand case, oil prices should naturally fall, but despite sluggish economic recoveries around the world, oil prices continue to rise. This paradox is caused by the heightened tensions between Iran and major world powers, due to Iran's nuclear ambitions.

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However, given the financial issues that continue to cast a long shadow of uncertainty over the economic stability of the European Union – the widely accepted notion that if Europe goes burst, it will drag the global economy with it and the world will revisit another global recession – it's probable that oil prices will most likely decrease again in the near future. But these are only short-term shocks; the bigger issues are the long-term challenges that the petroleum industry is going to have to face. These include increasingly stricter industry and regulatory standards – thanks to the BP oil disaster – and higher demand for cleaner and renewable energy.

Whether by the fear of peak oil, or the environmental effects (i.e. climate change) of oil, or by the increasing desire of countries to become energy independent, more and more alternative energy resources are being considered and implemented in place of oil. In the United States for example there is a nationwide campaign to switch to shale gas. In response, ExxonMobil is spending plenty of money on R&D to develop the technology most suitable to properly extract natural gas from rocks deep underground.

Company's Business Prospects and Management Strategies:

As stated in the previous section, the threats to the oil industry are growing by the hour. And ExxonMobil realizes that in order to adapt to the changing economic and environmental climate globally, it has to explore territories, streamline its business, and even challenge the its core principles (i.e. R&D on alternative energy). As a result, the company is spending billions on R&D and finding ways to expanding into new markets in order to continue to dominate the playing field. One of ExxonMobil's strategies to expand into new markets is its latest deal with the Russian state oil company Rosneft in

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which American domestic oil and gas fields to Russian investments (New York Times). The deal offers ExxonMobil broader access to Russia's offshore Arctic fields.

In terms of R&D, ExxonMobil is working with its partners to develop advanced biofuels from photosynthetic algae that will be compatible with gasoline and diesel fuels. The company is also developing new recyclable, impact-resistant plastics to make car parts – like bumpers and fuel tanks – lighter to help improve fuel efficiency. Furthermore, the company is also working with Israeli based companies to develop an on-vehicle hydrogen production system that converts conventional hydrocarbon fuels into hydrogen to power fuel cell contained within the vehicle.

Recent Share Price Performance:

In Exhibit 6, we see ExxonMobil's recent stock performance compared to the oil sector index. The Select Oil & Gas Exploration and Production (SOEP) index measures the performance of the oil exploration and production sub-sector of the U.S. equity market.

Exhibit 6: XOM Share Performance versus the OSX



Source: yahoofinance.com.

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ExxonMobil's stock has been outperformed by the SOEP most of the five-year period. This is somewhat shocking because ExxonMobil is not only the largest oil and natural gas Company in the world, it's also the largest overall publicly owned company. One would expect it to do at better than the industry given it's dominance. This disappointing stock performance can probably be attributed to the global recession of 2008. Indeed as the graph depicts, prior to 2008, ExxonMobil's stock is doing better than the SOEP. As the graph shows, from the beginning of 2010, the gap between ExxonMobil's stock and the SOEP grows larger and larger. This can be linked to two things. First, there was the Arab Spring that began late 2010 and that caused major panic among investors about the oil industry. The second reason is due to the continuous heightened tensions between Iran and major world powers concerning Iran's nuclear ambitions.

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Analysis of XOM Financial Statements

Peer Group Selection:

When it comes to revenue, ExxonMobil competes with many other major companies but those companies cannot be called its peers because most of them are state owned companies. Of the top ten largest oil companies, only three were chosen as peers. National Iranian Oil Company, Petroleum of Venezuela, China National Petroleum Corporation, and Saudi Aramco are excluded because they are all state-owned companies. ConocoPhillips is excluded because it's not as globally diverse as ExxonMobil and its three peers. Royal Dutch Shell is very similar to ExxonMobil in terms of how it operates but the comparison has to be limited to three companies. The three companies that are the closest to be regarded as peers of ExxonMobil are British Production, Chevron, and Total S.A. Just like ExxonMobil, of three of the peers are multinational corporations, publicly owned, are involved in the markets of crude oil, natural gas, and petroleum related products.

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Fiscal Year Disparities:

All four of the companies have the same fiscal year, which ends on December 31st.

Analysis of Current Asset management:

Exhibit 7 illustrates the current asset ratio situation for BP and its peers.

Exhibit 7: Current Asset Management for XOM and its Peers

	2012(Q1)	2011				2010				2009			
	XOM	XOM	BP	CVX	TOT	XOM	BP	CVX	TOT	XOM	BP	CVX	TOT
Current Ratio	0.95	0.94	1.16	1.58	1.37	0.94	1.17	1.68	1.41	1.06	1.14	1.42	1.45
Quick Ratio	0.77	0.75	0.85	1.42	0.98	0.74	0.85	1.49	1.03	0.84	0.76	1.21	1.04
Avg. Age of Inventory (days)	41	18	13	12	58	18	34	15	61	20	43	18	71
Avg. Collection Period (days)	71	29	41	32	35	31	45	37	35	34	45	40	68
Operating Cycle (days)	75	34	26	22	114	35	66	24	115	51	89	37	120

Source: Values Calculated using data from **forbes.com** Financial Statements and Balance Sheets (See Appendix)

ExxonMobil's current ratio and quick ratios have consistently been lower than its three peers over the past three years. This suggest that compared to its peers, ExxonMobil has fewer liquid assets, and is less capable of paying off it's obligations. The average age of inventory for ExxonMobil is a bit higher than those of British Production and Chevron but significantly lower than Total S.A. This tells us that for 2011, ExxonMobil sold inventories slower than British Production and Chevron but faster than Total S.A. However ExxonMobil's average collection period has consistently been lower than those of its peers, suggesting that the ExxonMobil is more efficient in turning its receivable into cash. The operating cycle numbers of Exxon and its competitors are all over the place in between 2009 and 2011. But to put it into perspective, ExxonMobil's operating

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cycle has generally been higher than Chevron's but lower than British Production and Total S.A. This suggests that it takes ExxonMobil less time to turn raw materials (first stage of operation) into cash (last stage of operation) than British Production and Total S.A. but more time than it takes Chevron.

Analysis of Debt Management:

Debt management ratios for BP and its peers are shown in Exhibit 8.

Exhibit 8: Debt Management Ratios for XOM and its Peers

	2012(Q1)	2011				2010				2009			
	XOM	XOM	BP	CVX	TOT	XOM	BP	CVX	TOT	XOM	BP	CVX	TOT
Debt Ratio	0.55	0.53	0.62	0.42	0.59	0.51	0.65	0.43	0.58	0.53	0.62	0.41	0.63
Long-Term Debt Ratio	0.25	0.24	0.25	0.31	0.33	0.23	0.36	0.31	0.35	0.21	0.32	0.30	0.32
Interest Coverage	194.91	359.44	48.22	6331.80	73.17	277.93	8.71	864.10	53.75	64.46	23.63	662.30	20.22

Source: Values Calculated using data from **forbes.com** Financial Statements and Balance Sheets (See Appendix)

ExxonMobil's debt ratio has been relatively close to the average of its peers and has only changed by .02 percent every that it changes. And since Exxon's debt ratio is similar to that of its peers, this implies that Exxon and its peers have about the same level of leverage and same level of risk of defaulting on their debts.

On the other hand, ExxonMobil's long-term debt ratio is consistently lower than that of its peers. However, from 2009 to 2011, ExxonMobil's long-term debt has consistently been rising slowly. Some of this increase in long-term debt can probably be attributed to the company's increase in its debt ratio from 2010 to 2011. Normally, this would be a call for concern because with higher debt comes higher risks, interest rates, and all other unwanted problems, but since the company's interest coverage has also risen from 2009 to 2011, this implies that the company is not having much problems fulfilling its interest and debt obligations. ExxonMobil's interest coverage is way higher than those of its peers except for Chevron from 2009 to the first quarter of 2012, suggesting the

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company is less risky to lend money to compared to British Production and Total S.A.

from in that period.

Analysis of Profitability:

The profitability ratios and DuPont Decomposition for XOM and its peers are presented in Exhibit 9

Exhibit 9: Profitability Ratios and DuPont Decomposition for XOM and its Peers

	2012(Q1)	2011				2010				2009			
	XOM	XOM	BP	CVX	TOT	XOM	BP	CVX	TOT	XOM	BP	CVX	TOT
Gross Margin (%)	28.5	36.5	19.5	31.9	31.3	30.9	6.90	33.2	33.7	19.8	29.09	29.00	36.4
Operating Margin (%)	16.8	18.3	15.6	25.0	31.3	18.8	3.37	21.1	33.4	11.0	11.7	11.1	15.4
Net Profit Margin (%)	7.6	8.4	6.7	10.6	7.4	7.9	-1.23	9.3	7.5	6.9	6.4	6.3	7.5
Total Asset Turnover	0.36	1.5	1.3	1.2	1.0	1.3	1.11	1.1	1.0	1.0	1.4	1.0	0.9
Return on Assets (%)	2.7	12.4	8.8	12.8	7.5	10.1	-1.37	10.3	7.4	7.0	8.3	6.4	6.6
Financial Leverage	2.2	2.1	4.1	1.7	3.1	2.1	4.50	1.8	3.2	2.3	2.1	1.8	2.4
Return on Equity (%)	6.0	26.6	35.9	22.2	23.4	20.7	-6.14	18.1	23.5	16.3	17.4	11.4	16.1

Source: Values Calculated using data from **forbes.com** Financial Statements and Balance Sheets (See Appendix)

ExxonMobil's gross margin of 28.51 percent in the first quarter of 2012 alludes that 28.51 percent of the company's revenue was retained. ExxonMobil's gross margin ratio is higher than two of its peers in 2011 but lower than most of them in 2010 and 2009. Unlike its peers, ExxonMobil has consistently increased its Gross Margin from 2009 to 2011, except for the small dip in the first quarter of 2012.

While the operating margins of its competitors have experienced ups and downs, ExxonMobil's operating margin has increased every year, from 2009 to the first quarter of 2012. This indicates that the company is operating more and more efficiently, hence increasing its earnings before interest and taxes more and more in that three-year period.

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Likewise, the company's net profit margin also increased every year from 2009 to 2011, reinforcing the conclusion that the company is keeping more and more of a percentage out of every dollar of sales. ExxonMobil's net profit margin is very similar to all its peers in each year, except for BP in 2010, which had a negative net profit margin. However, this can be disregarded because 2010 was when the BP oil spill happened in the Gulf of Mexico and that put a huge dent on BP's financials.

ExxonMobil's total asset turnover has experienced a relatively stable increase, just like its peers, except for BP. Again; this inconsistency from BP can be attributed to the oil spill. The closeness of the total asset turnover of ExxonMobil and its peers each year indicates that all four companies have similar level of efficiency in using their assets to generate sales or revenue. Similar to total asset turnover and net profit margin, ExxonMobil and its peers – again, except for BP- have constantly increased their return on asset ratios from 2009 to 2011, suggesting that all three companies increased the profitability relative to their assets.

The return on equity of ExxonMobil and its peers – except for BP in 2010 – have increased every year, signaling an increase in net income as a percentage of shareholder's equity for all three companies. Given that ExxonMobil and its peer's Return on Equity have consistently been higher than their return on assets, we can conclude that ExxonMobil and its peers have successfully utilized financial leverage.

Section Conclusion:

The current asset ratios, the debt ratios and profitability ratios all suggests that ExxonMobil has done well and sometimes better than its peers from 2009 to 2011. The company's debt ratio is not too high or too low to the point where it's a detriment.

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Likewise, the company's profitability ratios are on par with its peers in the industry, except for BP, which has experienced some major issues due to the 2010 oil spill.

It is worth pointing out that for the first quarter of 2012, ExxonMobil's current ratios and profitability ratios are all experience some negative impacts. The average collection period for example went from an average of 32 in the years from 2009 to 2011 to a whopping 70 in the first quarter of 2012. Likewise, the company's return on equity went from 26.59% in 2011 to 6.02% in the first quarter of 2012. This is a major call for concern. A possible explanation could be the deal that ExxonMobil signed in mid April with the Russian oil company Rosneft offshore drilling. It could be that ExxonMobil has started pouring resources into the proposed deal but the fruits of it are not produced yet and that make it seem like the company is loosing money on operations.

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ExxonMobil Stock Valuation

Constant (Gordon) Growth Model:

ExxonMobil's stock value can be calculated using the Constant (Gordon) Growth Model. The constant growth model works by assuming that future cash flows will continue to grow at a constant rate (**g**) indefinitely. In order for the the Gordon Model to work, the required rate of return (**k**), which acts as the discount rate, has to be larger than the growth rate of cash flows (**g**). The constant growth model is better illustrated in Exhibit 10.

Exhibit 10: Constant Growth Model

Assuming:

- i) Constant growth of cash flows, &
- ii) Rate of growth of cash flows (**g**) is smaller than required rate of return (**k**)

The equation becomes: $P_0 = \frac{CF_0(1+g)}{k-g}$

$$\text{OR} \quad P_0 = \sum_{t=1} CF_t / (1+k)^t$$

Where: **P₀** = Price of the stock

CF₀ = Most recent cash flow

g = Growth rate of cash flow

k = Required rate of return

Estimating Future Cash Flow for XOM:

Before applying the Gordon-growth model and find the stock price, we have to first get Exxon's past and recent cash flow. Due to the fact that prior to 1999, ExxonMobil was two different companies, the data for the Earnings Per Share and Dividend Per Share will only go back as far as 1999. The dividend per share and the

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earnings per share can each be used to measure cash flows. Below is a table depicting Exxon's EPS and DPS values from 1999 to 2013.

Exhibit 11: XOM Earnings per Share (EPS) and Dividends per Share (DPS) (1999 -2013)

Fiscal Year	Earnings Per Share	Dividends Per Share (\$)
1999	1.14	0.844
2000	2.55	0.88
2001	2.23	0.91
2002	1.69	0.87
2003	3.24	0.98
2004	3.91	1.06
2005	5.76	1.14
2006	6.68	1.28
2007	7.36	1.37
2008	8.78	1.55
2009	3.99	1.66
2010	6.24	1.74
2011	8.43	1.85
2012	8.29	2.18
2013	8.93	-

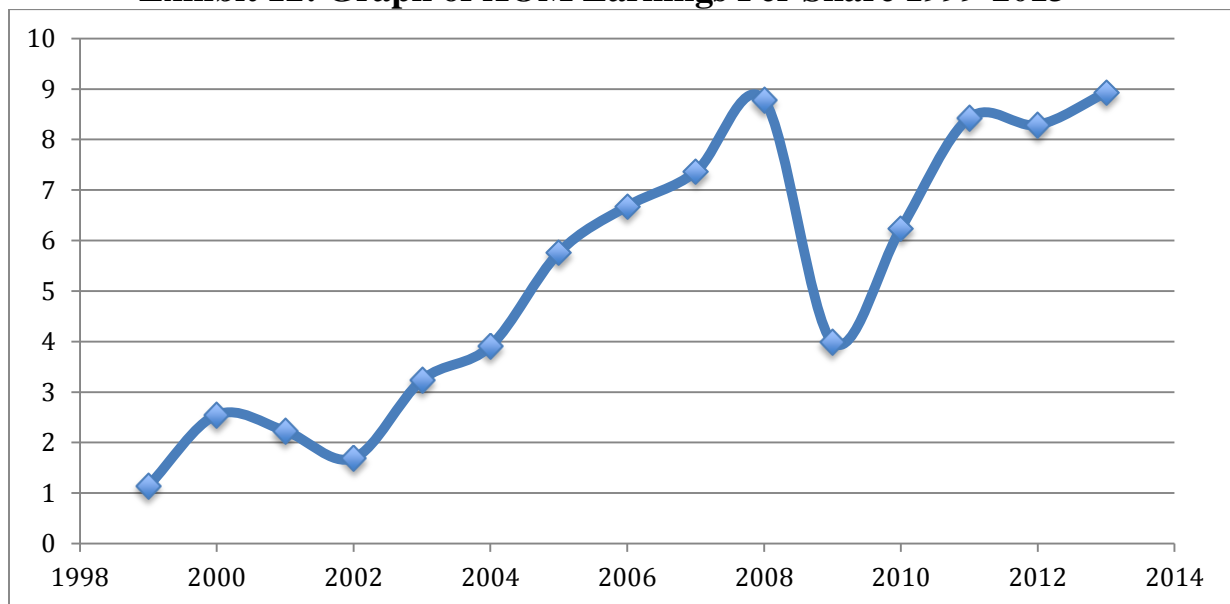
Source: EPS data (1999-2010) copied from mergentonline.com. EPS data (2011) compiled from yahoofinance.com. DPS data (1995-2011) copied from Exxonmobil.com. 2012 and 2013 EPS data are analyst expectations found at yahoofinance.com. The dividend per share is high in 2012 because Exxon increased their quarterly dividend from \$.47 to \$.57 on May 10th

The EPS values depicted above are Basic Shares of Outstanding EPS. The CF_0 (using EPS) that will be used is \$7.5. Of course 7.5 is not on the chart above, but it is the most plausible one given the trend of the EPS growth. The other CF_0 (using DPS) that

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will be used is \$1.85. This number is derived from both Exxon's dividend payouts in the past two quarters (\$0.47 for Q1 and \$0.57 for Q2) and analyst expectations (\$0.57 for both Q3 and Q4) from wsj.com. Exxon had a 21% increase of its dividend payout in the second quarter of 2012. An important thing to note is that the most recent cash flow (2011) is only a reflection of the things that have happened up until January. It doesn't take into account whether or not the company has had significant gains or losses. That's why using \$8.43 as the current cash flow is problematic. Likewise, the analyst estimate for the next two years is only an estimate as of May 10, 2012. Below is a graph showing Exxon's EPS over time

Exhibit 12: Graph of XOM Earnings Per Share 1999-2013



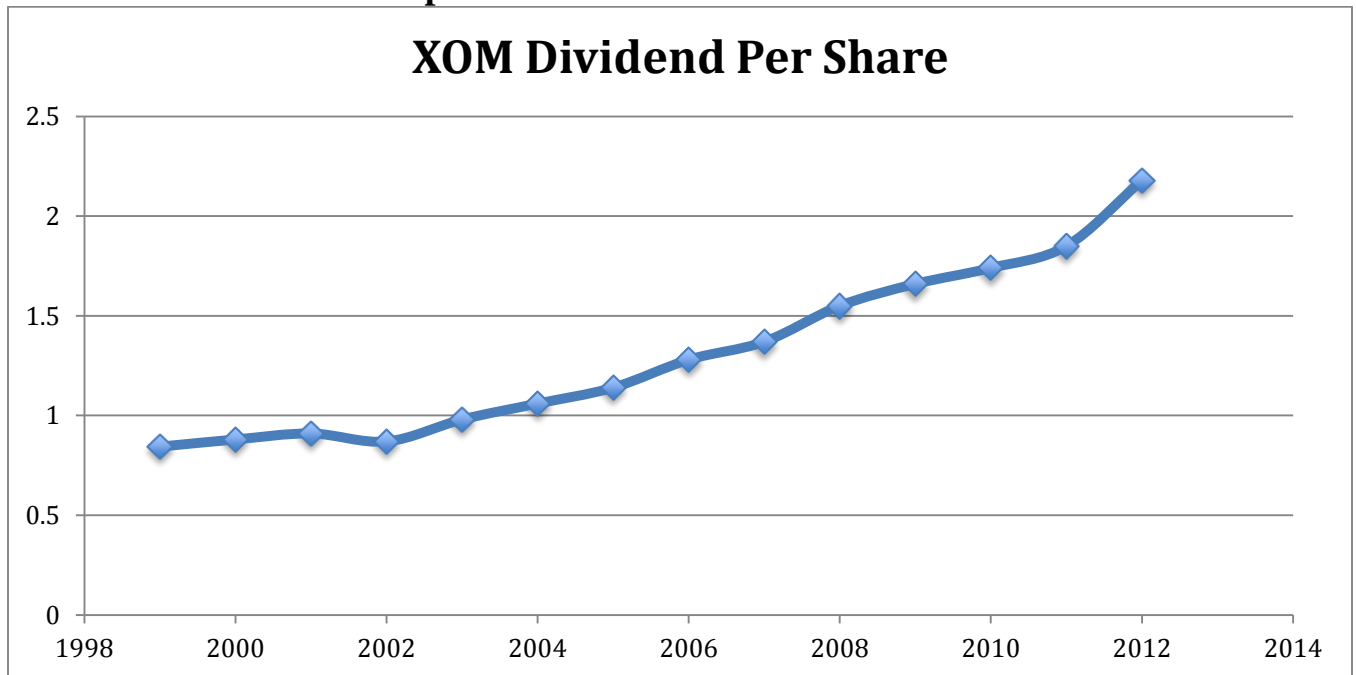
Source: Data copied from mergentonline.com (1999-2010) and yahoofinance.com (2010-2012). (Used Basic Earnings per Share values from mergentonline.com)

The volatility of Exxon's EPS depicted by the graph is the reason why the CF_0 (using EPS) will be \$7.5. The thing that probably caused the most volatility to the graph was the Great (Global) Recession that started in 2008. And as the graph shows, after having record profits in 2008, the company then experienced a huge drop in its earnings.

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Exxon's most recent EPS, which was in 2011, was \$8.43. Analyst estimates for the next two years are \$8.29 and \$8.93. None of those numbers truly reflect the current cash flow of the company due to the volatility of the earnings and the things that could have happened since the data was achieved. In exhibit 13, ExxonMobil's dividend per share is presented.

Exhibit 13: Graph of XOM Dividend Per Share 1999-2012



Source: data compiled from mergentonline.com

Unlike its EPS, Exxon's DPS has had a somewhat constant growth rate. Since ExxonMobil's DPS has had a constant growth rate, using \$1.85 as the cash flow is plausible. Since the past and current cash flows have been achieved, the growth rate can be estimated using a combination of different years. Below is a table depicting the growth rates.

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Exhibit 14 Possible Growth Rate Values (%) for XOM

Cash Flow Period (in Fiscal Years)	Growth Rate (%)
EPS (1999-2013)	13.7
EPS (2005-2013)	3.9
EPS (2007-2013)	4.4
DPS (1999-2012)	7.5
DPS (1999-2005)	4.9
DPS (2005-2012)	8.4
5-Year Analyst Estimate	7.9

Source: Values were estimated using the historical data presented in Exhibit 11. 5-Year Estimate is by analysts from finance.yahoo.com

As expected, when calculating the company's growth rate for different combination of years, the growth rates percentages are much closer if the CF_0 being used are DPS than they are if they are EPS. Given the nature of the oil industry, this phenomenon is not unusual. Exxon usually gives out the same amount of money for dividends every quarter or year, but the company does not get to choose how much to earn every quarter or year, the market does. In the period from 1999 to 2013 (EPS) for example, the company experienced a 13.7 growth rate. That is not surprising given the global economic expansion – and the lack of major recessions – that happened between 1999 and 2007. However, in the period between 2007 and 2013 (EPS), the growth rate is only 4.4%. Needless to say, 2007 was when the global financial crisis started and 2008 was when the Great Recession started, and both crisis lasted until 2012 so that could be the reason why growth was smaller from 2007 to 2012

Estimating Require Return (k) for XOM:

CAPM is a model that describes the relationship between risk and expected

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return and that is used in the pricing of risky securities. Below is the equation.

Exhibit 15: CAPM Equation

$$K_s = K_f + B(K_m - K_f)$$

Where: K_s = Required rate of return

R_F = Risk-free rate of return

B = Beta coefficient of firm

K_m = Market return

No matter how much investments are diversified, it is close to impossible to get rid of all the risk. Investors deserve a rate of return that compensates them for taking on risk. The Capital Asset Pricing Model (CAPM) helps to calculate investment risk and what returns should be expected on investments.

The general idea behind CAPM is that investors need to be compensated in two ways: time value of money and risk. The time value of money is represented by the risk-free (K_f) rate in the formula and compensates the investors for placing money in any investment over a period of time. The other half of the formula represents risk and calculates the amount of compensation the investor needs for taking on additional risk. This is calculated by taking a risk measure (beta) that compares the returns of the asset to the market over a period of time and to the market premium ($K_m - K_f$).

The risk-free return can be obtained by taking the rates of return on U.S. Treasury Bills and U.S. Long-Term Government Bonds, both of which have very little to no risk. However, if they were to be ranked, then the U.S. Treasury Bills would be less risky because of their shorter maturity period (i.e. 3 months) compared to Bonds (i.e. 20 years). This is because in general, the longer the time to maturity, the more chances there are of bad things happening, hence the more risk there is. However, since the probability of the

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U.S. government defaulting on its debts is very low – if anything, the government can just print more money to pay its debt – then the treasury bills and the government bonds can be regarded as risk-free because it is the closest one can get to a risk-free investment. As the numbers indicate in exhibit 16, people – or the market - are risk-averse; the longer the holding period, the more risk is associated with it. As a result, return rates increase as the holding period does. Also below is a table that shows the return rates of large-company stocks, U.S. bonds and treasury bills for different maturity periods.

Exhibit 16: Required Rates of Return for 15, 25, and 35-year Periods

Holding Period	Long-Term Government Bonds	U.S. Treasury Bill	Large-Company Stocks
15-year (1997-2011)	5.0	3.4	5.5
25-year (1987-2011)	5.5	3.9	9.3
35-year (1977-2011)	7.3	5.3	9.8

Source: Data compiled from *Stocks, Bonds, Bills, and Inflation Yearbook* published by Ibbotson Associates, Table 2-2, C-6, and C-1.

The market return, which refers to the return on the market portfolio of all securities, can be obtained by taking the return rates of large company stocks. The same period is being used for both the risk-free returns (bonds and treasuries) and the market return (large-companies) in order to hold inflation constant. Again, its important to note the higher rates of return associated with the market compared to U.S. treasury bills and bonds. As stated earlier, the market is volatile and there is no guarantee that a company will continue to exist ten years after it issues a bond. On the contrary, probability of the U.S. government not existing ten years after issuing a bond is very low compared to any company. As a result, the markets, being risk –averse, demands higher returns from

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companies than from the government. Now that the rates for the market return, the risk-free return, and the beta coefficient (.69) for ExxonMobil are available, the required return can now be calculated using different combinations of returns and beta (.69 and 1.0) coefficients. The result is depicted below.

Exhibit 17: Possible k Values (%) for XOM

Assuming Beta = .69	Holding Period of risk-free rate k_{rf} and market return k_m	Required Rate of Return, k (%)
Treasury Bill	15-year	4.5
Treasury Bill	25-year	7.6
Treasury Bill	35-year	8.4
L-T Government Bond	15-year	5.3
L-T Government Bond	25-year	8.1
L-T Government Bond	35-year	9.0
Assuming Beta = 1.0		
Treasury Bill	15-year	5.5
Treasury Bill	25-year	9.3
Treasury Bill	35-year	9.8
L-T Government Bond	15-year	5.5
L-T Government Bond	25-year	9.3
L-T Government Bond	35-year	9.8

Source: Values calculated using the CAPM, Exhibit 15, substituting values from Exhibit 16, and using beta values of

The beta coefficient, b , is a relative measure of nondiversifiable risk, market risk. It is an index of the degree of movement of an asset's return in response to a change in the market return. The higher the absolute value of the beta, the more sensitive it is to

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market volatility. Since ExxonMobil's beta is positive (as of May 12, 2012, that means that Exxon's response to market volatility will be in the same direction as the market.

To get the required rates of return listed above, the CAPM equation is used in which $K_s = K_f + B(K_m - K_f)$. In the first row of Exhibit 17 for example, substituting $K_f = 3.4$, $B = 0.69$ and $K_m = 5.5$ into the CAPM equation gives the required return value of 4.5.

Due to the fact that Exxon's beta is less than one, another estimate of the required return is made again while the beta is exactly one, as depicted in exhibit 17. After using different combinations of the market return, risk-free return, and beta coefficients to get different k values, some of those k values can now be used to do an estimate of Exxon's stock prices using the Gordon Model. Below is a table that shows the different possible stock values for ExxonMobil using different possible values of k and g, and the 2011 Dividend Per Share value for CF_0 .

Exhibit 18: Possible Stock Values (\$) of XOM When CF_0 (DPS) = 1.85

Possible g values (%)	Possible k values (%)			
	4.5	5.3	8.1	9.3
4.4	\$1931.4	\$214.6	\$52.2	\$39.4
7.5	-	-	\$331.5	\$110.5
7.9 (Analyst Est.)	-	-	\$998.1	\$142.6
8.4	-	-	-	\$222.8
13.7	-	-	-	-

Source: possible share values estimated using the Gordon model with possible g values from Exhibit 14, possible k values from Exhibit 17, and a CF_0 value of \$1.85

To get the possible stock values listed above, the constant growth equation is used. In the first row and column of Exhibit 18 for example, substituting $CF_0 = 1.85$, $k = 4.5$ and $g = 4.4$ into the constant growth equation gives the stock value of \$1931.4.

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As the table indicates, the possible stock values for ExxonMobil cannot be calculated in any of the places where the g is larger than the k , a key assumption that cannot be violated in order for the Gordon Model to work.

Using a CF_0 of \$1.85, in exhibit 18 we are presented with various possible stock values for ExxonMobil. According to Google Finance, the stock price for ExxonMobil in January fluctuated around \$85. Given that information, it can be seen that none of the stock prices in exhibit 18 are in the ball park \$83. In this case, we can come to the conclusion that using the DPS cash flow of \$1.85, the Gordon Model did not come close to estimating the market price of ExxonMobil's stock.

Exhibit 19: Possible Stock Values (\$) of XOM When CF_0 (EPS) = 7.5

Possible g values (%)	Possible k values (%)			
	4.5	5.3	8.1	9.3
4.4	\$7830	\$870.2	\$221.6	\$159.8
7.5	-	-	\$1343.8	\$447.9
7.9 (Analyst Est.)	-	-	\$4046.3	\$578.0
8.4	-	-	-	\$903
13.7	-	-	-	-

Source: possible share values estimated using the Gordon model with possible g values from Exhibit 14, possible k values from Exhibit 17, and a CF_0 value of \$7.5

Compared to DPS, using EPS as CF_0 gives us stock prices that are way above the current price of Exxon's stock. And given that Exxon's current stock in January was around \$85, the Gordon Model, in this scenario, with the EPS cash flow of \$7.5, does not even come close to predicting the right price of Exxon's stock. Certainly, it is not possible for the January price to be undervalued – or overvalued – because markets are

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efficient and the price that the market chooses is the most efficient price. However, it's worth pointing out that Exxon's EPS is one of the highest in the market, unusually high actually, given it's growth rate. The company has experienced tremendous amount of growth in the past decade. Sometimes, when companies experience high EPS, it's because they are cutting costs – or firing workers – a strategy that usually stifles growth in future periods. Therefore, a very high EPS coupled with a very high growth rate for more than a decade is very unusual and very hard to sustain. The high EPS makes the numerator of the Gordon equation unusually high; the high growth makes the denominator low. All else being equal, the higher the growth rate, the higher the stock price. Those two things combined make the stock price really high when using Exxon's current – or estimated – EPS as CF_0 in the Gordon Model.

What especially makes the Gordon Model unable to predict or explain the current price of Exxon's stock – using Exxon's current EPS – is because there are many factors that determine the price of the stock but are not reflected in the application of the model. For example, on August 18, 2009, Petro China signed a liquefied-natural-gas import deal with ExxonMobil valued at an estimated \$50 billion Australian dollars (online.wsj.com). Likewise, in early December 2010, ExxonMobil management staff in Nigeria went on a couple of weeks strike (Reuters.com). Also, on October 19, 2011, ExxonMobil, BP, and Italy's Eni announced that they would spend \$100 billion to upgrade three oilfields in southern Iraq (Reuters.com). These are all major developments that profoundly impact the value of the company. Unfortunately, things like these are not reflected in the Gordon Model.

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CONCLUSION

The oil industry is evolving rapidly and ExxonMobil is at the forefront of innovation to meet the challenges of the evolution. The company has dominated the industry for about a decade and looks like it will continue to do so in the future due to its large investments into lucrative future energy resources. However, the company's share performance has been taking major hits recently and that is a call for concern.

The company's current asset management ratios are close to its peers and continue to improve. Likewise, the debt management and profitability ratios are also in the ballpark of its peers. From 2009 to 2011, none of the ratios seem to indicate that the company is having financial issues. Additionally, using ExxonMobil's financial information, the Gordon Model was unable to predict stock values that are remotely close to Exxon's stock value in January of 2012. It was acknowledged that there are factors that determine the price of the stock but are not reflected in the Model. However, this doesn't mean that the Gordon Model is flawed. What it does mean is that given ExxonMobil's financials, the situation it was in, and other unknown factors, the Gordon Model failed to predict stock values that were at least close to ExxonMobil's stock value in January of 2012.

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APPENDIX

Financial Ratio Calculations Basis:

All data was gathered from company profiles at forbes.com

ExxonMobil Balance Sheet and Income Data for Fiscal Years 2009-2011

	2012(Q1)	2011	2010	2009
Total current assets	76,160,000	72,963,000	58,984,000	55,235,000
Total current liabilities	79,994,000	77,505,000	62,633,000	52,061,000
Total assets	345,152,000	331,052,000	302,510,000	233,323,000
Total liabilities	188,140,000	176,656,000	155,671,000	122,754,000
Long-term debt	9,231,000	9,322,000	12,227,000	7,129,000
Inventories	14,749,000	15,024,000	12,976,000	11,553,000
Accounts receivable	35,844,000	38,642,000	32,284,000	41,275,000
Total shareholder's equity	157,012,000	247,000	146,839,000	110,569,000
Net sales	124,053,000	486,429,000	383,221,000	310,586,000
Operating profit	20,855,000	88,781,000	71,984,000	52,891,000
Interest expense	107,000	247,000	259,000	548,000
Net income	9,450,000	41,060,000	30,460,000	19,280,000
Cost of goods sold	88,690,000	308,883,000	264,442,000	213,790,000

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British Production Balance Sheet and Income Data for Fiscal Years 2009-2011

	2011	2010	2009
Total current assets	97,584,000	96,853,000	67,653,000
Total current liabilities	84,318,000	82,832,000	59,320,000
Total assets	293,068,000	272,262,000	235,968,000
Total liabilities	181,603,000	177,275,000	134,355,000
Long-term debt	35,169,000	30,710,000	25,518,000
Inventories	25,661,000	26,218,000	22,605,000
Accounts receivable	43,761,000	37,242,000	29,989,000
Total company equity	111,465,000	94,987,000	101,613,000
Net sales	386,463,000	302,545,000	243,965,000
Operating profit	60,084,000	10,194,000	47,430,000
Interest expense	1,246,000	1,170,000	1,110,000
Net income	25,700,000	-3,719,000	16,578,000
Cost of goods sold	311,283,000	281,669,000	191,842,000

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Chevron Balance Sheet and Income Data for Fiscal Years 2009-2011

	2011	2010	2009
Total current assets	53,234,000	48,841,000	37,216,000
Total current liabilities	33,600,000	29,012,000	26,211,000
Total assets	209,474,000	207,759,000	164,621,000
Total liabilities	88,092,000	103,759,000	72,707,000
Long-term debt	9,684,000	11,003,000	9,829,000
Inventories	5,543,000	5,493,000	5,529,000
Accounts receivable	21,793,000	20,759,000	17,703,000
Shareholder's Equity	121,382,000	105,081,000	91,914,000
Net sales	253,706,000	204,928,000	171,636,000
Operating profit	63,318,000	43,205,000	30,959,000
Interest expense	10,000	50,000	28,000
Net income	26,895,000	19,024,000	10,483,000
Cost of goods sold	172,788,000	136,802,000	118,852,000

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Total S.A. Balance Sheet and Income Data for Fiscal Years 2009-2011

	2011	2010	2009
Total current assets	82,643,802	76,382,125	71,388,398
Total current liabilities	60,625,965	53,998,470	49,366,561
Total assets	212,959,381	192,803,960	183,292,443
Total liabilities	124,637,493	111,175,594	107,893,943
Long-term debt	29,282,255	27,881,300	27,887,057
Inventories	23,524,982	20,928,079	19,895,550
Accounts receivable	20,532,000	18,159,000	33,027,733
Shareholder's Equity	88,321,888	81,048,013	75,398,499
Net sales	216,206,041	188,454,675	160,910,486
Operating profit	67,722,923	62,878,147	58,365,256
Interest expense	925,577	1,169,826	1,255,398
Net income	15,936,027	14,181,457	12,119,255
Cost of goods sold	148,483,117	125,576,528	102,545,230

Financial Ratios Calculated

Current ratio = total current assets/total current liabilities

Quick ratio = (total current assets – inventories)/total current liabilities

Average age of inventory = 365/(cost of goods sold/inventories)

Average collection period = accounts receivable/(annual sales/365)

Debt ratio = total liabilities/total assets

Long-term debt ratio = long-term debt/total assets

Interest coverage ratio = operating profit/interest expense

Gross margin = (sales – cost of goods sold)/sales

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Operating margin = operating profits/sales

Net profit margin = earnings available for common stockholders/sales

Total asset turnover = sales/total assets

Return on assets = earnings available for common stockholders/total assets

Financial leverage (FLM) = total assets/common stock equity

Return on equity = (net profit margin)*(total asset turnover)*(FLM)

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